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## Environment conservation: Ranking of selected Eco-club schools in Delhi

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### Abstract

Environment education has always been of prime concern to sensitize young children towards ecological preservation and sustainable future. Eco-club is the largest programme in the country promoting environment conservation and protection among masses. This study aims to investigate the involvement of schools in selected eco-club activities based on the 60-point scoring list developed to rank them. 26 schools, selected from nine zones of the city formed part of the research. According to the findings of the study, most of the schools had about 50% participation in the listed eco-club activities. Planting trees and observing environmental days were the two most common activities opted by the educational institutions. School 1 from North Zone ranked highest with a score of 47 out of 60, however, the performance of West Zone was best owing to good participation from all schools in the zone.

**Keywords:** Environment education, eco-club, Delhi schools, environment conservation

### 1 Introduction

India has a unique environment inherited by past generations which highlights the rich history of the country as well as quality of life people in the country had. *Gurukul* was the only system of education available in ancient India that helped form a strong bond between the teacher and the disciple for their overall development (Dattaswami, 2013). However, the modern education system emphasises more on classroom learning, and the link with nature is limited to few extra-curricular activities (Gautum *et al.* 2016)<sup>[8]</sup>.

Over the years, educators around the world have recognized and acknowledged the potential of environment education (EE) towards sensitizing corrective ecological practices among individuals (UNESCO, 1997). Recognizing its importance, the Government of India implemented various programmes and schemes in the country (Environment Management Bureau, 2005) to promote eco-consciousness among young minds.

Taking it forward, EEAT (Environment Education, Awareness & Training) Scheme was initiated in India in 1983-84 with the idea that group work is more productive in achieving something for the environment than individual efforts ([www.delhi.gov.in](http://www.delhi.gov.in)). It was launched during the VI<sup>th</sup> Five Year Plan and numerous programmes were undertaken to meet the objectives related to environment education both in formal and informal sector, facilitation of development of materials and aids, promotion of scientific research, encouraging non-governmental organizations, using media for spreading awareness and mobilizing people's participation for preservation and conservation of environment.

In order to achieve these objectives, several programmes were introduced over the years. One such programme launched nation-wide was the 'National Green Corps (NGC) ([www.delhi.gov.in](http://www.delhi.gov.in)). NGC is a national programme conceptualized and started by the Ministry of Environment and Forest (MOEF), Government of India and aims to achieve the following four major objectives (Roberts, 2009)<sup>[2]</sup>.

- Increasing awareness among children about their immediate environment through education.
- Imparting knowledge about the eco-system and their inter-dependence through visits and demonstrations.
- Instilling a scientific attitude towards environmental problems through youth mobilization.
- Making efforts towards active environmental preservation through youth involvement.

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Under NGC, Eco-club programme was initiated with the aim of spreading awareness among masses at the very tender age and hence focusing on young children or 'Early Adopters' for motivating families, societies and nation as a whole. The eco-club programme is spread across the country and exists in each of the 29 states and 7 union territories in affiliation with recognized boards like CBSE (Central Board of Secondary Education) and ICSE (Indian Certificate of Secondary Education) (Adato and Meinzen 2007, SCERT, 2012) [4, 7]. The programme received positive response from educational institutions and the number of participating schools and colleges went up from 100 schools in 2001-02 to 1, 00, 000 in

2016-17 making it is most extensive programme on environment conservation operating in the country (Kumar, 2009). To promote environmental activities under eco-club, the government provides monetary support in the form of annual grants for facilitating programmes at the district level (CEE, 2013).

**Activities of Eco-club:** The activities planned under eco-club are intended towards encouraging environment education, sustainable development and ecological conservation through independent thinking and logical reasoning. They can be categorized under four major heads (Table 1):

**Table 1:** Eco-club activities

Observing Environment and understanding the relationship between various elements	It includes activities like organic gardening, seminars and workshops, competitions and awareness campaigns. They are aimed to understand the importance of nature in human life, learn to protect and care for environment; and spread awareness on conservation practices.
First-hand experience through field visits	It includes visits and excursions to science parks, wildlife parks, nature walks. They are designed for exposing and motivating learning among children and familiarize them with living things in their natural surroundings.
Community interaction	It includes activities related to community like rain water harvesting plant, gobar gas plant, solar power plant, sewage treatment plant, adopting slum or community and developing templates, leaflets and posters for spreading awareness. The purpose of the community related activities is to promote new methods of managing resources and spread awareness.
Cultivating a scientific temper with research skills	It involves tests for analysing waster, noise, soil, air and indoor air quality. These tests help in inculcating observational skills in young researchers and give first-hand experience on conducting research.

Source: Gupta *et al.*, 2014 [5]

Started in the 90's with only a few schools but by 2008 they set the national record with active participation from almost 2000 schools and colleges across the city including government institutions (Gupta *et al.*, 2014) [5]. The number of schools enrolling in the programme is increasing every year and students are regularly exposed to field activities and encouraged to involve in environmental activities through their school programme.

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### Methodology

The study was carried out in the National Capital Territory of Delhi (NCT). Twenty-six schools were selected from nine zones in the city namely: North, South, East, West, North-East, North-West, South-West, Central and New Delhi.

The empirical phase of the study involved two stage evaluation design:

Stage 1: Document review and secondary research for enlisting eco-club activities undertaken by schools in Delhi.

Stage 2: Semi-structured interview with school authorities for ranking the schools.

The respondents forming part of the study included one eco-club teacher coordinator and five eco-club student volunteers from each school. All the schools participating in the study were a part of eco-club programme for more than 10 years. The demographic data of the respondents indicated that 100%

of the eco-club teacher coordinators in selected schools were female. 75% of coordinators had more than 10 years of experience, while only 25% had been involved for less than 5 years in environmental activities at their respective schools.

The study was conducted using the quantitative data collection method. A semi-structured interview schedule was developed comprising of a checklist of activities covered under eco-club programme. The survey also included transect walks around school for validation of information received through the questionnaire.

### Analysis

The data acquired was tabulated and analysed using content analysis. The information gathered was divided into various categories for ease of analysis.

### Study findings

Eco-clubs have played a fundamental role in spreading awareness and supporting sensible behaviour towards ecological conservation among school children.

After field survey and study of the past documents like Eco-Club Manual (2012) and Delhi eco-club website, 60 activities were selected to formulate the checklist for ranking the schools. These activities were further classified into 9 categories-Garden related activities, controlling pollution, use of modern technology, management of solid waste, equipment for recycling, knowledge building – awareness generation, IEC material for knowledge sharing, environmental campaigns and community outreach for ease of evaluation (Table 2).

**Table 2:** Classification of eco-club activities

Categories	Discription	Number of activities
Garden related activities	Projects related to nature and plants, such as tree plantation, herbal/medicinal garden, kitchen and organic garden, butterfly and cactus park; and mushroom cultivation	9
Controlling Pollution	Practices to understand pollution levels and recommended solutions for noise, air, soil, water pollution, indoor Air Quality (IAQ) and cloud cover.	7
Use of Technology	Technologies for resource conservation like Rain water harvesting and solar energy for lighting and water heating	3
Management of Solid Waste	Activities concerned with effective management of solid waste like e-waste recycling and waste segregation at source.	3
Equipment for Recycling	Development of skill and availability of equipment necessary for recycling like paper recycling plant, gobargas plant and composting pits.	8
Knowledge building awareness generation	Increase attention towards environment through capacity building activities, competitive events, excursions and environment protection activities.	18
IC material for knowledge sharing	Development of audio, visual and audio-visual aids like documentaries, news coverage, school magazine and field study.	3
Environmental Campaigns	Campaigns like health and sanitation drives, observing environment awareness days, water conservation drives, Swachh Bharat Abhiyan and 'Say No to Plastic' campaigns.	5
Community Outreach	Sharing knowledge with community adoption of slum or park, community service and sapling distribution.	4

The findings of the study revealed that each school was involved in some eco-club programmes. The list prepared was used for ranking schools based on their participation in each activity. For fair marking a score of 1 was assigned if an

activity was conducted in the school (within one year from the time of survey) and 0 for those not practiced. Thus, a school could score anywhere between zero to 60 points (Table 3).

**Table 3:** Score sheet of school's involvement in eco-club activities

Zones	School (n= 26)	Garden Activities	Controlling Pollution	Use of Modern technology	Management of Solid Waste	Equipment for recycling	Knowledge building awareness generation	IEC material for knowledge sharing	Environmental Campaigns	Community Outreach	TOTAL SCORE (SCHOOL)	%
<b>MAX SCORE</b>		9	7	3	3	8	18	3	5	4	60	%
CENTRAL	SCHOOL 1	3	1	2	3	1	8	1	5	3	27	45.0%
	SCHOOL 2	5	0	2	3	1	11	3	5	3	33	55.0%
EAST	SCHOOL 1	2	4	1	2	3	12	3	5	3	35	58.3%
	SCHOOL 2	2	3	1	1	2	6	1	4	1	21	35.0%
	SCHOOL 3	2	4	1	1	1	10	3	5	1	28	46.7%
NEW DELHI	SCHOOL 1	3	1	1	2	1	10	2	4	1	25	41.7%
	SCHOOL 2	1	3	0	2	2	4	1	3	0	16	26.7%
	SCHOOL 3	3	3	2	0	2	10	1	4	1	26	43.3%
NORTH	SCHOOL 1	4	6	3	3	4	15	3	5	4	47	78.3%
	SCHOOL 2	2	3	0	1	1	6	2	4	0	19	31.7%
	SCHOOL 3	4	0	1	2	1	8	3	3	1	23	38.3%
NORTH EAST	SCHOOL 1	1	0	0	0	0	0	0	1	0	2	3.3%
	SCHOOL 2	2	2	1	3	1	5	1	4	1	20	33.3%
	SCHOOL 3	4	1	1	1	2	8	1	4	1	23	38.3%
NORTH WEST	SCHOOL 1	4	3	2	3	3	12	3	5	1	36	60.0%
	SCHOOL 2	4	5	2	3	3	10	1	4	1	33	55.0%
	SCHOOL 3	4	7	2	1	2	13	3	4	1	37	61.7%
SOUTH	SCHOOL 1	4	5	2	3	2	15	2	5	3	41	68.3%
	SCHOOL 2	7	5	3	3	3	12	3	5	4	45	75.0%
	SCHOOL 3	2	3	2	3	3	7	1	4	1	26	43.3%
WEST	SCHOOL 1	6	4	2	3	4	13	3	5	2	42	70.0%
	SCHOOL 2	4	5	2	3	2	14	3	5	1	39	65.0%
	SCHOOL 3	6	6	2	3	3	14	3	3	2	42	70.0%
SOUTH WEST	SCHOOL 1	2	4	2	3	4	13	3	4	2	37	61.7%
	SCHOOL 2	5	4	1	3	4	14	3	5	3	42	70.0%
	SCHOOL 3	2	4	1	1	3	9	2	3	2	27	45.0%
<b>TOTAL SCORE (HEADS)</b>		88	86	39	56	58	259	55	108	43		
<b>MAX SCORE (HEADS)</b>		234	182	78	78	208	468	78	130	104		
<b>%</b>		37.60%	47.25%	46.15%	65.38%	27.88%	55.34%	70.51%	83.07%	41.34%		

The schools obtained scores between 2 and 47. Most educational institutions were found to be in the range of 28-38.

**Popular Activities:** Among the 60 listed activities, tree plantation (under garden related activities) and observation of environment awareness days like earth day, ozone day, environment day and wildlife day (under environmental campaigns) were the two *most popular activities* practiced by all the participating schools. Next in popularity were health and sanitation drive and attending seminars and workshops related to environment conservation where more than 90% schools were involved.

Results of the rating scale suggest that activities like mushroom cultivation and cactus park (under garden related activities) and tree census (knowledge building–awareness generation) were *least popular activities* as they were only limited to a few schools primarily owing to the high cost of investment and maintenance of the resources.

**Popular Categories:** Analysis of selected schools revealed that participation in environmental campaigns like cleanliness drives and Swachh Bharat Abhiyan was the *most popular category* among the schools (83.07%). Other popular category was knowledge building–awareness generation (70.51%) which included visits to science-park, excursions, seminars and campaigns.

Garden related activities (37.60%) was found to be the *least popular category* as it involved development and maintenance of natural resources like butterfly park, science park and practicing organic farming methods. Study revealed that insufficient space, lack of expertise and financial constraints were some of the reasons for schools to not get involved in these activities.

**Ranking of Selected Eco-clubs:** was based on the scores obtained by each institution for active participation in selected eco-club activities (Table 3). North Zone - School 1 was ranked on top with a score of 47 out of 60 (78.3%) as they had maximum involvement in the listed activities. Second rank was secured by South Zone- School 2 obtaining a total score of 45. Lowest score was recorded by NE Zone - School 1 (2 out of 60) as they were only engaged in tree plantation and observing special days.

**Ranking of Zones:** of the schools revealed that West Zone on top (68.3%) closely followed by South (62.2%) as their participation was maximum in most of the activities (Table 4). This could be attributed to availability of facilities, involvement of faculty and support from school management. North-East Zone ranked lowest because of the low score obtained by North-East Zone- School 1.

**Table 4:** Ranking of eco-clubs by zones in Delhi

Zones	Total Score	Percentage	Zonal Ranking
n=26 schools	[[[	%	
WEST	123	68.3	1
SOUTH	112	62.2	2
SOUTH WEST	106	58.8	3
NORTH WEST	106	58.8	3
NORTH	89	49.4	4
CENTRAL	60	50	5
EAST	84	46.6	6
NEW DELHI	67	37.2	7
NORTH EAST	45	25.0	8

## 5. Conclusion

Eco-club is one of the most wide-spread environmental programme started by the government of India. It is an all-inclusive programme that encompasses all areas of resource conservation and environment protection. Results of the research revealed that among 26 participating school, best performance was displayed by School 1 in North Zone; however, West Zone had top-most zone wise performance owing to good contribution by all the schools in the zone.

The investigation concluded that even though eco-club programme is operational in most of the educational institutions of the city, the participation of many schools is still limited to a selected few activities like tree plantation and observation of environmental days. On an average a school was found to be participating in around 50% of the selected activities on an annual basis. This could be attributed to the various reasons like curriculum overburden, lack of interest from teacher co-ordinator, insufficient funds and time constraints. The results suggest a need for a stronger system to ensure active participation from schools and delegation of funds to help them take up activities for the betterment of human life.

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