

RESEARCH ARTICLE

ENVIRONMENTAL EDUCATION AMONG SCHOOL CHILDREN OF BANGLA NAGAR, PUGAL ROAD, BIKANER (RAJASTHAN)

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ARTICLE DETAILS

Article History:

Received 20 December 2023
Revised 23 January 2024
Accepted 21 February 2024
Available online 23 February 2024

ABSTRACT

Environmental issues primarily pollution of air, water and soil, overpopulation, deforestation, global warming, climate change, species extinction and waste disposal are critical issues which need to be handled and managed properly to preserve our planet. Environmental education is a tool to solve these issues as by this process, the learner would expand level of awareness and would learn solutions of environmental issues. The present case study was done to assess the level of environmental education in different age groups of school students of Bangla Nagar, Bikaner (Rajasthan). Seven schools were chosen for the survey. Questionnaires were prepared for different groups of classes such as group 1 of classes I to V, group 2 of classes VI to VIII, group 3 of classes IX to X, and group 4 of classes XI to XII. These forms were distributed among students to get their responses. Data were analysed, and results were set. It was found that students from class I to XII showed 63.73% positive response towards environmental education and awareness. The study revealed that we are making our future generations environmentally aware. However, we need more awareness among school students to make the planet earth sustainable as well as for human sustainability.

KEYWORDS

Environmental awareness, Environmental issues, Environmental education, School children, Bikaner.

1. INTRODUCTION

Environmental Education (EE) is a process that allows individuals to explore environmental issues, engage in problem solving, and take action to improve the environment. As a result, individuals develop a deeper understanding of environmental issues and have the skills to be informed and be responsible. Henceforth, environmental education is more than information about the environment. It increases public awareness and knowledge of environmental issues. It teaches individuals critical thinking and enhances individuals' problem solving and decision-making skills. It does not advocate a particular viewpoint. The five components of environmental education are (i) Awareness and sensitivity to the environment and environmental challenges, (ii) Knowledge and understanding of the environment and environmental challenges, (iii) Attitudes of concern for the environment and motivation to improve or maintain environmental quality, (iv) Skills to identify and help to resolve environmental challenges, and (v) Participation in activities lead to the resolution of environmental challenges (EPA, 2023).

The United Nations education, scientific and cultural organizations (UNESCO) emphasize the role of environmental education in safeguarding future global development of societal quality of life, through the protection of environment, eradication of poverty, minimization of inequalities and insurance of sustainable development (Melissa, 2016). Environmental education is closely related to the sustainable development. However, we need to develop it as the main objective of environmental education to achieve sustainable development goal (Nyika and Fredrick, 2021). In pursuance of documents introduced in 1992 through UNESCO at the conference, environmental education is one of the subjective educations that can be distributed in all types of education and can also be related to

sustainable development (Yadav et al., 2022).

The level of environmental education and awareness have been studied globally like in Oman and Turkey (Abdul-Wahab, 2010; Yeşilyurt et al., 2020). Henceforth, environmental education is simply mandatory and without it, people would not have the knowledge to realize the seriousness of environmental issues. The present case study was done to assess the level of environmental education in different age groups of school students with the aims of (a) to analyse the level of environmental education among the peer groups of primary, secondary, and senior secondary classes; and (b) to analyse whether subject 'environment' is taught in schools.

2. MATERIALS AND METHODS

2.1 Study Area

The study area is located between latitude 28.11729 and longitude 73.0402 in Bikaner district. The total population of the Bangla Nagar area is 9233. The male and female population are 4851 and 4382 respectively. The population density of Bangla Nagar is 7941 people per square kilometers. The size of the area is about 1.16 square kilometers. There are seven schools in Bangla Nagar. Out of which, one is government and six are private schools. Three schools are senior secondary while, four are elementary. The total students in these schools are 1536. The seven schools chosen for the survey are namely: (1) Government Senior Secondary School, Pugal Road (old diet), (2) Aayush Public Shikshan Sansthan, (3) Saraswati Shiksha Bharti Senior Secondary School, (4) Vidhya Vatika School, (5) Shastri English School, (6) Sunrise Public Secondary School, and (7) Minmansa School. Figure 1 represents map of these schools of Bangla Nagar.

Quick Response Code



Access this article online

Website:
www.environecosystem.com

DOI:
[10.26480/ees.01.2024.07.15](http://doi.org/10.26480/ees.01.2024.07.15)

2.2 Methodology

Questionnaires were prepared for different groups of classes such as group 1 of classes I to V, group 2 of classes VI to VIII, group 3 of classes IX to X,

and group 4 of classes XI to XII. Schools were visited and questionnaire forms were distributed among students. Responses were filled by students. Forms were collected. The gathered data were analysed for the study.

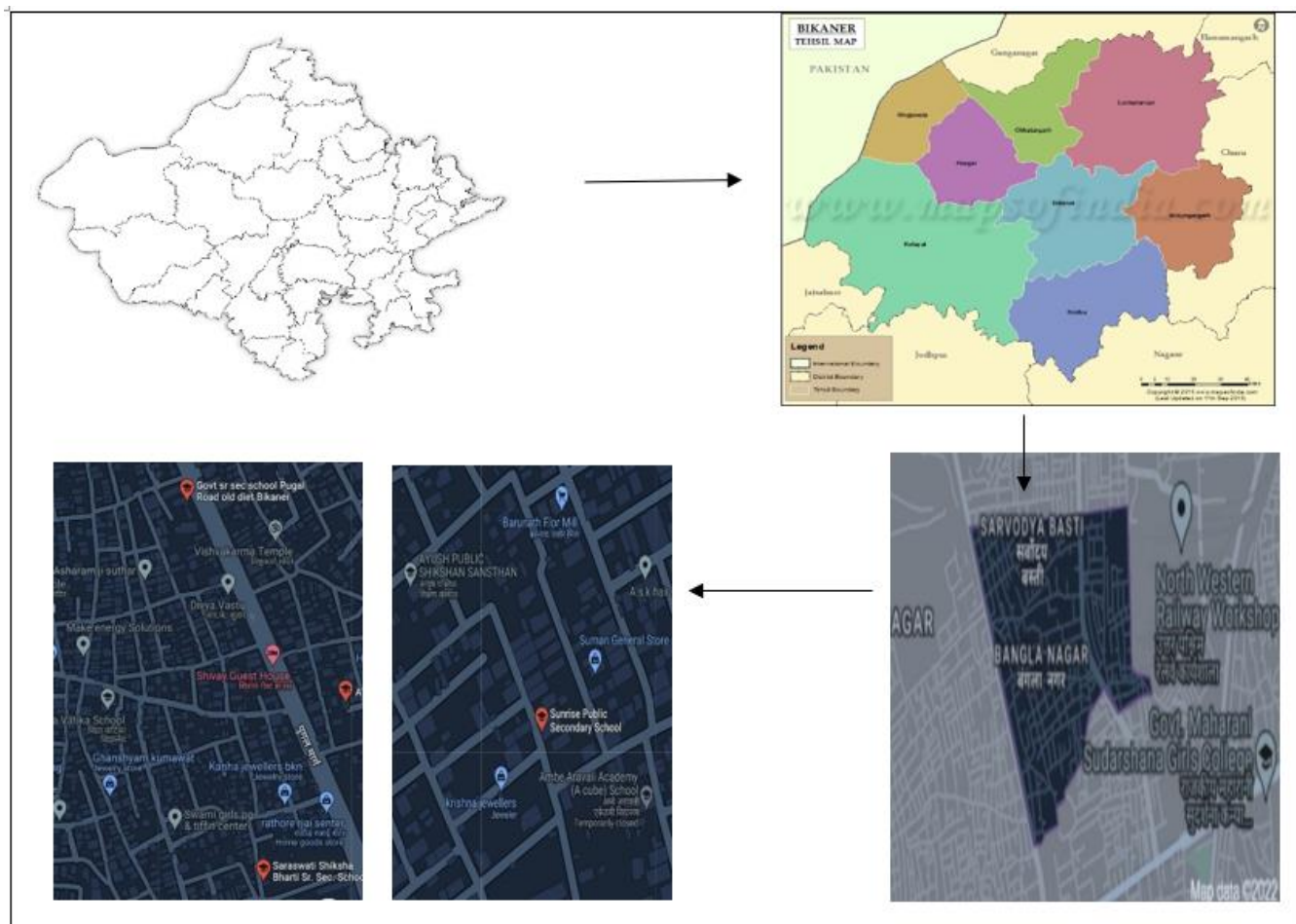


Figure 1: Map of the schools of Bangla Nagar, Bikaner (Rajasthan).

3. RESULTS AND DISCUSSIONS

The responses of group 1 to 4 of Govt. Senior Secondary school Pugal Road (old diet) of Bangla Nagar are shown in Table 1 to 4 respectively.

Table 1: Responses of class 1st to 5th students of Govt. Senior Secondary school Pugal Road, Bikaner.

Questions	Class 1 st		Class 2 nd		Class 3 rd		Class 4 th		Class 5 th	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
1. Have you ever heard the word environment?	31	0	33	0	13	0	42	0	48	0
2. Do you like plants?	31	0	33	0	13	0	42	0	48	0
3. Is environment as subject taught in your class?	29	0	33	0	13	0	42	0	48	0
4. Do you know about pollution?	20	11	28	6	10	2	20	22	44	4
5. Does the environment you live clean?	18	13	8	25	5	8	18	24	20	28

Table 2: Responses of class 6th to 8th students of Govt. Senior Secondary school Pugal Road, Bikaner.

Questions	Class 6 th		Class 7 th		Class 8 th	
	Yes	No	Yes	No	Yes	No
1. Is environment as subject taught in your class?	0	64	0	92	0	78
2. Do you know types of pollution?	36	38	20	72	60	18
3. Have you ever grow any plant in your house?	40	24	46	46	57	21
4. Do you know meaning of recycling?	32	34	67	25	50	28
5. Which of these materials can be recycled?						
(A) Metals	2		7		7	
(B) Plastic bottles	36		73		56	
(C) Paper cardboard	20		7		10	
(D) Light bulbs	6		5		5	

Table 3: Responses of class 9th and 10th students of Govt. Senior Secondary school Pugal Road, Bikaner.

Questions	Class 9 th		Class 10 th	
	Yes	No	Yes	No
1. Is environment subject taught in your class?	0	142	0	139
2. Do you try to reduce the uses of plastic?	96	46	113	26
3. Meaning of environmental education is – (A) To engage student with burdensome schedule. (B) Aware children about environment. (C) To entertain children. (D) To save environment from pollution through education.	1 5 0 136		1 12 6 120	
4. What is deforestation? (A) Loss of tree (B) Loss of water (C) Loss of clouds (D) Loss of grass	132 2 0 8		130 0 0 9	
5. How frequently do you recycle products in your home- (A) Always (B) Sometimes (C) Never	103 39 0		124 12 3	

Table 4: Responses of class 11th and 12th students of Govt. Senior Secondary school Pugal Road, Bikaner.

Questions	Class 11 th		Class 12 th	
	Yes	No	Yes	No
1. Is environment subject taught in your class?	0	145	0	185
2. Do you know the meaning of 5 "R"?	24	121	81	104
3. The first "World environment day" was celebrated in – (A) 1972 (B) 1974 (C) 1984 (D) 1992	39 38 54 14		107 45 13 20	
4. Which of the following is greenhouse gas? (A) CO ₂ (B) CH ₄ (C) N ₂ O (D) All of the above	33 34 17 31		28 103 31 23	
5. Give your opinion or innovative idea to make environment clean and green – (A) Plantation (B) Clean energy (C) Make sure your waste goes to the right place	132 8 5		170 11 4	

The responses of group 1 to 4 of Sarswati Shiksha Bharti Senior Secondary School of Bangla Nagar are shown in Table 5 to 8 respectively.

Table 5: Responses of class 1st to 5th students of Sarswati Shiksha Bharti Senior Secondary School.

Questions	Class 1 st		Class 2 nd		Class 3 rd		Class 4 th		Class 5 th	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
1. Have you ever heard the word environment?	8	0	7	0	10	0	5	0	11	0
2. Do you like plants?	8	0	7	0	10	0	5	0	11	0
3. Is environment as subject taught in your class?	8	0	7	0	10	0	5	0	11	0
4. Do you know about pollution?	6	1	6	1	6	4	3	2	2	9
5. Does the environment you live clean?	1	4	1	6	0	10	1	4	1	10

Table 6: Responses of class 6th to 8th students of Sarswati Shiksha Bharti Senior Secondary School.

Questions	Class 6 th		Class 7 th		Class 8 th	
	Yes	No	Yes	No	Yes	No
1. Is environment as subject taught in your class?	0	13	0	17	0	9
2. Do you know types of pollution?	9	4	8	9	8	1
3. Have you ever grow any plant in your house?	10	3	15	2	9	0
4. Do you know meaning of recycling?	13	0	12	6	1	8
5. Which of these materials can be recycled? (A) Metals (B) Plastic bottles (C) Paper cardboard (D) Light bulbs	1 11 2 0		0 16 1 0		0 6 2 0	

Table 7: Responses of class 9th and 10th students of Sarswati Shiksha Bharti Senior Secondary School.

Questions	Class 9 th		Class 10 th	
	Yes	No	Yes	No
1. Is environment subject taught in your class?	0	15	0	13
2. Do you try to reduce the uses of plastic?	13	2	12	1
3. Meaning of environmental education is – (A) To engage student with burdensome schedule. (B) Aware children about environment. (C) To entertain children. (D) To save environment from pollution through education.	0 1 0 12		0 3 0 10	
4. What is deforestation? (A) Loss of tree (B) Loss of water (C) Loss of clouds (D) Loss of grass	15 0 0 0		12 0 0 1	
5. How frequently do you recycle products in your home- (A) Always (B) Sometimes (C) Never	12 3 0		11 2 0	

Table 8: Responses of class 11th students of Sarswati Shiksha Bharti Senior Secondary School.

Questions	Class 11 th	
	Yes	No
1. Is environment subject taught in your class?	0	20
2. Do you know the meaning of 5 “R”?	2	18
3. The first “World environment day” was celebrated in – (A) 1972 (B) 1974 (C) 1984 (D) 1992	5 4 7 4	
4. Which of the following is greenhouse gas? (A) CO ₂ (B) CH ₄ (C) N ₂ O (D) All of the above	4 11 0 5	
5. Give your opinion or innovative idea to make environment clean and green – (A) Plantation (B) Clean energy (C) Make sure your waste goes to the right place	18 2 0	

The responses of group 1 to 4 of Aayush Public Shikshan Sansthan of Bangla Nagar are shown in Table 9 to 12 respectively.

Table 9: Responses of class 1st to 5th students of Aayush Public Shikshan Sansthan.

Questions	Class 1 st		Class 2 nd		Class 3 rd		Class 4 th		Class 5 th	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
1. Have you ever heard the word environment?	13	0	10	0	8	0	11	0	18	0
2. Do you like plants?	13	0	10	0	8	0	11	0	18	0
3. Is environment as subject taught in your class?	13	0	10	0	8	0	11	0	18	0
4. Do you know about pollution?	10	3	9	1	4	4	8	3	15	3
5. Does the environment you live clean?	2	11	2	8	2	6	2	9	4	14

Table 10: Responses of class 6th to 8th students of Aayush Public Shikshan Sansthan.

Questions	Class 6 th		Class 7 th		Class 8 th	
	Yes	No	Yes	No	Yes	No
1. Is environment as subject taught in your class?	0	22	0	30	0	23
2. Do you know types of pollution?	12	10	26	4	18	5
3. Have you ever grow any plant in your house?	20	2	28	2	23	0
4. Do you know meaning of recycling?	19	3	16	4	8	15
5. Which of these materials can be recycled?						
(A) Metals	1		0		0	
(B) Plastic bottles	18		30		17	
(C) Paper cardboard	2		0		5	
(D) Light bulbs	1		0		1	

Table 11: Responses of class 9th and 10th students of Aayush Public Shikshan Sansthan.

Questions	Class 9 th		Class 10 th	
	Yes	No	Yes	No
1. Is environment subject taught in your class?	0	40	0	34
2. Do you try to reduce the uses of plastic?	32	8	34	0
3. Meaning of environmental education is –				
(A) To engage student with burdensome schedule.	2		0	
(B) Aware children about environment.	10		4	
(C) To entertain children.	2		0	
(D) To save environment from pollution through education.	6		30	
4. What is deforestation?				
(A) Loss of tree	36		32	
(B) Loss of water	0		0	
(C) Loss of clouds	0		0	
(D) Loss of grass	4		2	
5. How frequently do you recycle products in your home-				
(A) Always	30		23	
(B) Sometimes	10		9	
(C) Never	0		2	

Table 12: Responses of class 11th students of Aayush Public Shikshan Sansthan.

Questions	Class 11 th	
	Yes	No
1. Is environment subject taught in your class?	0	29
2. Do you know the meaning of 5 “R”?	0	27
3. The first “World environment day” was celebrated in –		
(A) 1972		11
(B) 1974		13
(C) 1984		4
(D) 1992		1
4. Which of the following is greenhouse gas?		
(A) CO ₂		6
(B) CH ₄		16
(C) N ₂ O		0
(D) All of the above		7
5. Give your opinion or innovative idea to make environment clean and green –		
(A) Plantation		20
(B) Clean energy		5
(C) Make sure your waste goes to the right place		4

The responses of group 1 and 2 class students of Shastri English school were taken and it is shown in Table 13 and 14 respectively.

Table 13: Responses of class 1st to 5th students of Shastri English School.

Questions	Class 1 st		Class 2 nd		Class 3 rd		Class 4 th		Class 5 th	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
1. Have you ever heard the word environment?	2	0	3	0	3	0	5	0	4	0
2. Do you like plants?	2	0	3	0	3	0	5	0	4	0
3. Is environment as subject taught in your class?	2	0	3	0	3	0	5	0	4	0
4. Do you know about pollution?	0	2	1	2	2	1	1	4	3	1
5. Does the environment you live clean?	0	2	0	3	2	1	2	3	3	1

Table 14: Responses of class 6th to 8th students of Shastri English School.

Questions	Class 6 th		Class 7 th		Class 8 th	
	Yes	No	Yes	No	Yes	No
1. Is environment as subject taught in your class?	0	6	0	3	0	4
2. Do you know types of pollution?	2	4	1	2	2	2
3. Have you ever grow any plant in your house?	6	0	3	0	4	0
4. Do you know meaning of recycling?	2	4	2	1	1	3
5. Which of these materials can be recycled?						
(A) Metals	0		0		0	
(B) Plastic bottles	4		3		2	
(C) Paper cardboard	1		0		2	
(D) Light bulbs	1		0		0	

The responses of group 1 and 2 class students of Vidhya Vatika School were taken and it is shown in Table 15 and 16 respectively.

Table 15: Responses of class 1st to 5th students of Vidhya Vatika School.

Questions	Class 1 st		Class 2 nd		Class 3 rd		Class 4 th		Class 5 th	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
1. Have you ever heard the word environment?	15	0	12	0	10	0	13	0	8	0
2. Do you like plants?	15	0	12	0	10	0	13	0	8	0
3. Is environment as subject taught in your class?	15	0	12	0	10	0	13	0	8	0
4. Do you know about pollution?	10	5	8	4	4	6	10	3	6	2
5. Does the environment you live clean?	2	13	2	10	3	7	2	11	1	7

Table 16: Responses of class 6th to 8th students of Vidhya Vatika School.

Questions	Class 6 th		Class 7 th		Class 8 th	
	Yes	No	Yes	No	Yes	No
1. Is environment as subject taught in your class?	0	5	0	8	0	6
2. Do you know types of pollution?	3	2	7	1	2	4
3. Have you ever grow any plant in your house?	4	1	7	1	4	2
4. Do you know meaning of recycling?	3	2	4	4	4	2
5. Which of these materials can be recycled?						
(A) Metals	0		0		0	
(B) Plastic bottles	5		7		5	
(C) Paper cardboard	0		1		1	
(D) Light bulbs	0		0		0	

The responses of group 1 and 2 class students of Sunrise Public Secondary School were taken and it is shown in Table 17 and 18 respectively.

Table 17: Responses of class 1st to 5th students of Sunrise Public Secondary School.

Questions	Class 1 st		Class 2 nd		Class 3 rd		Class 4 th		Class 5 th	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
1. Have you ever heard the word environment?	5	0	3	0	6	0	4	0	5	0
2. Do you like plants?	5	0	3	0	6	0	4	0	5	0
3. Is environment as subject taught in your class?	5	0	3	0	6	0	4	0	5	0
4. Do you know about pollution?	4	1	1	2	2	4	2	2	3	2
5. Does the environment you live clean?	2	3	0	3	3	3	1	3	2	4

The responses of class I to V students of Bangla Nagar schools are shown in Figure 1. Here, there were 379 positive responses with zero negative response for Q.1 (Have you ever heard the word environment?) and Q.2 (Do you like plants?). While, for Q.3 (Is Environment subject taught in class?) received responses were 373 positive and 6 negative responses. The responses for Q. 4 (Do you know about pollution?) were 256 positive and 123 negative

responses. And, Q.5 (Does the environment around you clean?) have 121 positive and 268 negative responses. Overall, 82.74% of students have positive response towards environmental education. It shows that class I to V students of Bangla Nagar schools are aware about environment as per their educational phase.

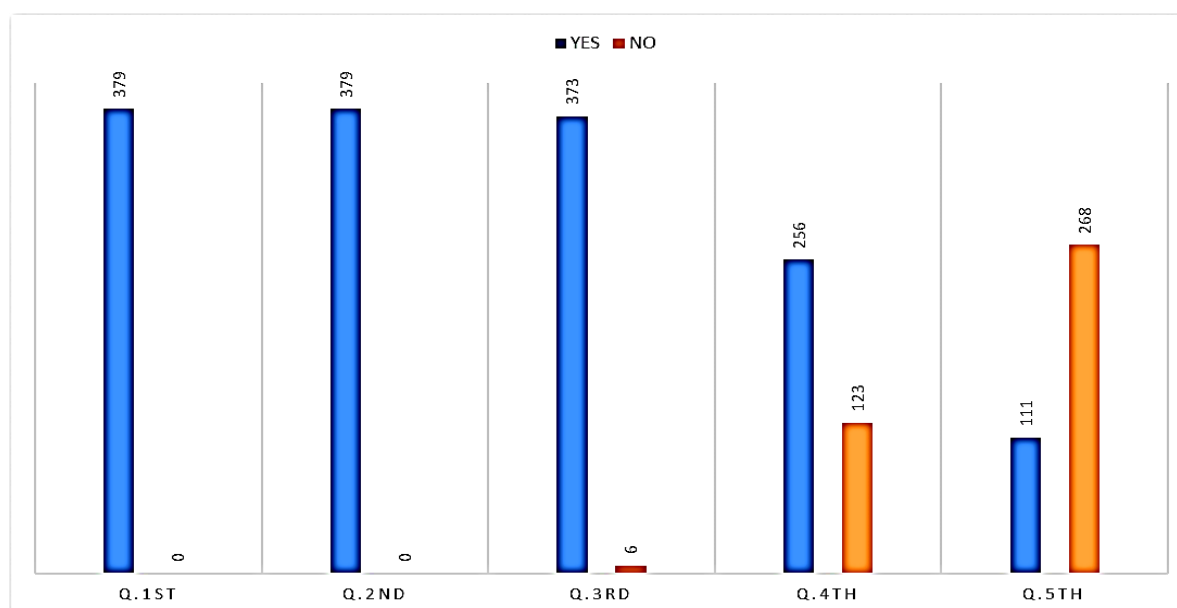
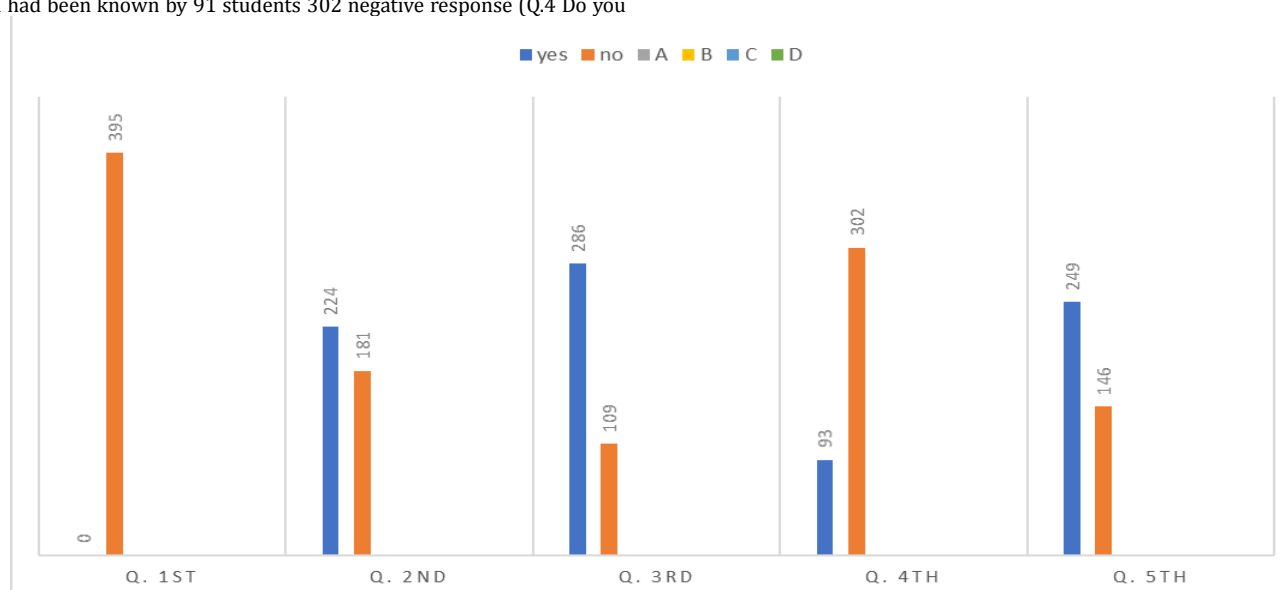
**Figure 1:** Responses of class I to V students of Bangla Nagar schools.

Figure 2 represents the responses of class VI to VIII students of Bangla Nagar schools. The response was fully negative (395 responses) for Q.1 (Is Environment subject taught in the class?). 224 students were aware about types of pollution (Q.2) with 182 negative responses. 286 students had grown plants at their houses and 102 students had not done plantation (Q.3 Do you ever grow any plants in your house?). In group 2, recycling term had been known by 91 students 302 negative response (Q.4 Do you

know the meaning of recycling?). Q.5 was which of these materials can be recycled - A. Metals, B. Plastic bottles, C. Paper cardboard, D. Light bulbs? Here, 249 students opted answer C paper cardboard and 146 students replied answer B Plastic bottles. Overall, the level of environmental awareness in group 2 (VI to VIII) were only 43.13% which indicates low level of environmental awareness according to their educational level.

**Figure 2:** Responses of class VI to VIII students of Bangla Nagar schools.

The responses of group 3 (class IX and X) students of Bangla Nagar schools is shown in Figure 3. When students were asked about Q.1 (Is Environment subject taught in class?), the reply was no from all 382 participants. 300 students of group 3 were keen to reduce use of plastics (Q.2 Do you try to reduce plastic uses?) with 83 negative responses. Similarly, 356 students replied right meaning of environmental education (Q.3) which is to save

the environment from pollution through education. 357 students knew the meaning of deforestation (Q.4). When students were asked about how frequently they recycle products at home? (Q.5), 262 students replied that they always recycle products at their home and 35 students said that they do it sometimes. The level of environmental awareness through education was positive with 66.57% responses.

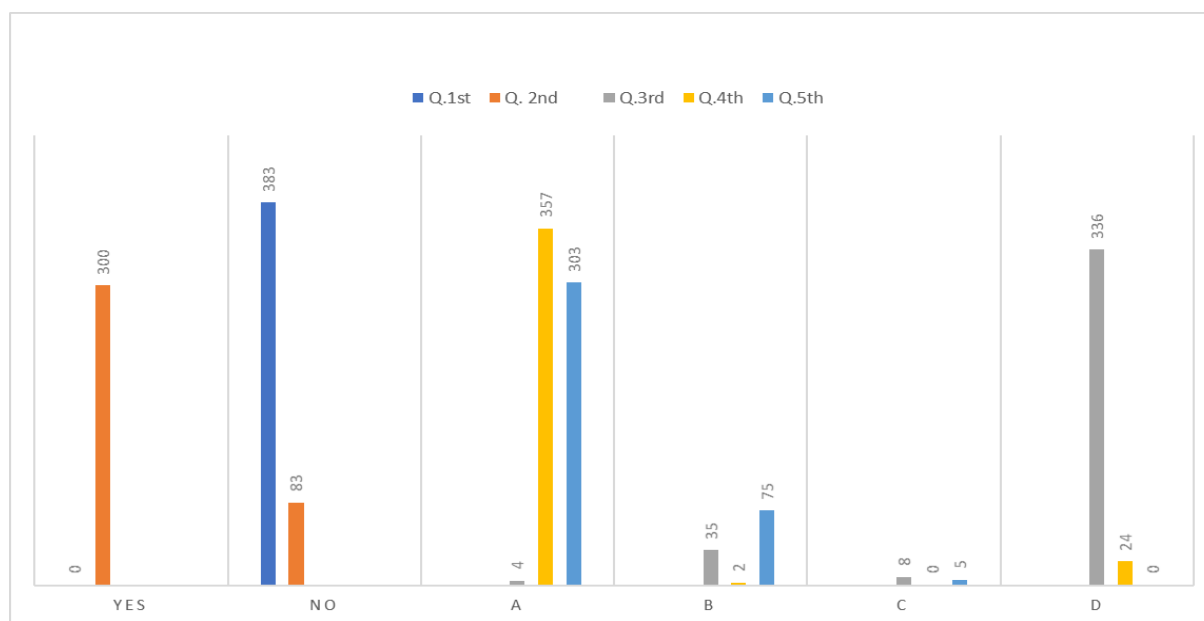


Figure 3: Responses of class IX to X students of Bangla Nagar schools.

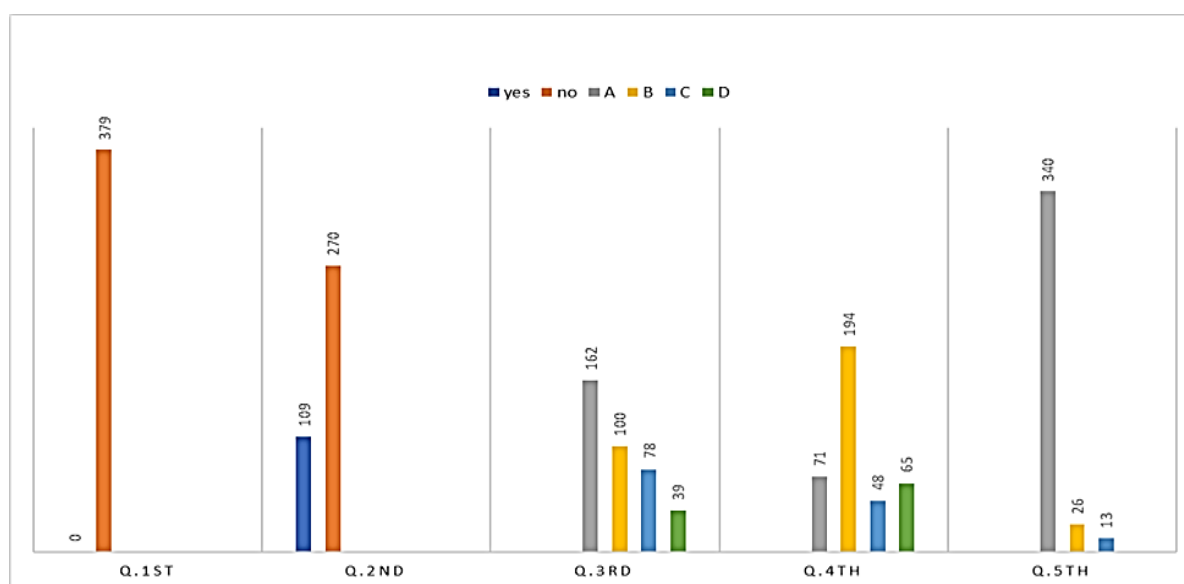


Figure 4: Responses of class XI to XII students of Bangla Nagar schools.

Figure 4 is the representation of group 4 (class XI and XII) students of Bangla Nagar schools. Q.1 (Is the environment subject taught in class?) had 379 negative responses with zero positive response. Only 109 students had known the meaning of '5R' (Q.2) and 279 participants did not know it. Q.3 was when was the first world environment day held, in which 162 students opted the right answer i.e., option A 1972. When students were asked about greenhouse gas (Q.4), 194 students gave right answer (option B CH₄). When students were asked to give their opinion and innovative ideas to make environment clean and green (Q.5), it had varied responses such as 349 students said plantation is the best idea to make environment clean and green. While, 26 students believed it is clean energy and 13 students said that 'make sure your waste go to the right place' is the idea to make environment clean and green. Hence, 62.58% of group 4 students had positive response towards environmental awareness.

3. CONCLUSION

The study was the survey of Bangla Nagar schools to investigate the environment awareness among the school children through environmental education. Students from class I to XII of different

government and private schools participated and showed 63.73% positive response towards environmental education and awareness. Which is a decent indication of making our future generation environmentally aware as well as closure to nature. However, we need more awareness among school students to make the planet earth sustainable and to make human sustainability too.

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