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Environmental Behaviour of Students at Different Levels of Education

Archana Singhal*

ABSTRACT

*Knowledge about environmental behaviour of students at different levels of education may help in devising an effective strategy to improve environmental behaviour of Indian youth in sustainable development of our society. The sample comprised of a total of 2045 students from Jabalpur city in Madhya Pradesh, and was segregated as 751 students of IX standard from 7 schools, 651 students of XI standard from 7 schools, and 643 students from UG I year from 5 colleges. The standardized test entitled "**Environmental Behaviour Scale (Singhal et al., 2010)**" was used to measure environmental behaviour of the sampled students. The mean scores differed significantly among different levels of education ($Fp < 0.001$), which was significantly lower among IX standard as compared with that among XI standard and UG I year students. The latter two levels have recorded statistically similar values of mean behaviour. The proportion of students with average to positive environmental behaviour consistently improved between IX standard and UG I year. Majority of students at all levels of education exhibited average to positive environmental behaviour, while a minority recorded the negative to worst behaviour. These findings clearly denoted that level of education has significantly impacted environmental behaviour of students.*

INTRODUCTION

India is experiencing a rapid growth in agriculture, manufacturing, transport and urbanization in synergy with a geometric rise in its human population. Such anthropogenic pressures have already degraded more than 50% of its geographical area and are critically affecting quality of the ecological services from various ecosystems. The emerging environmental problems like global warming and land degradation are societal in nature and can be solved only by a collective action of the society. We should focus not only on awareness and attitude but also on skill development towards solving environmental problems.

The main hurdle in tackling the problem of fast environmental degradation in India is not only lack of scientific knowledge but also the lack of the will to act. The existing system of environmental education helps students to be well acquainted with their environment and its functioning (Saxena, 1986; Sarabhai et al., 2002; Trivedi, 2004; Sharma, 2006; Shrivastava, 2007). But it grossly fails to educate them about implications of their actions. The society, therefore, needs to be educated about importance of their environment and its sustainable development for ensuring a healthy and homeostatic mechanism for our present and future generations. Environmental behaviour may play a pivotal role in this direction.

Hungerford and Volk (1990) have proposed changing learners behaviour through environmental education. Kaiser et al. (1999) found that environmental attitude as a powerful predictor of ecological behaviour. The perception of individuals in particular and communities in general may determine their love for beauty of surrounding nature as well as concern about local problems.

*Assistant Professor, Department of Education, St. Aloysius' Autonomous College, Jabalpur 482 001, Madhya Pradesh (asinghalrdvv@gmail.com).

The proposed research analyses environmental behaviour of students at primary, secondary and tertiary levels of education and may help in finding ways and means of improving environmental behaviour of Indian youth in sustainable development of society.

RESEARCH PLAN

The present research has obtained the sample from at least 5 institutions of Jabalpur city in Madhya Pradesh, each of which was imparting education to IX and XI standard and UG I year (i.e. B.A., B.Com. and B.Sc. I year) students. The sample comprised of a total of 2045 students, segregated as 751 students of IX standard from 7 schools, 651 students of XI standard from 7 schools, and 643 students of UG I year from 5 colleges. The schools were affiliated either to Central or Madhya Pradesh Boards of Secondary Education and all the colleges to Rani Durgavati University, Jabalpur. The students of XI standard and UG I year were sampled across disciplines of Arts, Commerce and Science.

The standardized test entitled "Environmental Behaviour Scale (Singhal et al., 2010)" was used to measure environmental behaviour of the sampled students. The test is based on a total of 60 statements covering multiple dimensions of environment with a maximum score of 60 and a minimum of 0. A total of **44** statements are positively worded - eliciting a **'yes'** response, and the remaining **16** statements are negatively worded - eliciting a **'no'** response from the students. For positive statements, 1 mark is to be awarded for a 'yes' response. For the negative statements, 1 mark is to be awarded for a 'no' response. The direction of scoring is such that a higher scoring at the scale shows better environmental behaviour.

Norms of the Environmental Behaviour Scale are defined as below:

Category of Environmental Behaviour	Range of Scores
Excellent	59 to 60
Positive	50 to 58
Average	44 to 49
Negative	35 to 43
Worst	<34

RESULTS AND DISCUSSION

Among the students of IX standard, environmental behaviour score ranged from 20 to 58. There was no student with the excellent environmental behaviour (i.e. 59 to 60, Table 1). The maximum proportion of the students had the average (i.e. 44 to 49), followed closely by that with the negative (i.e. 33 to 43) and positive (i.e. 50 to 58) behaviour (Table 1). The proportion of students with positive, average and negative behaviour categories did not differ much from each other as it was 28, 34 and 31%, respectively. A meager 7% of the students have recorded the worst behaviour (i.e. <34).

Among the students of XI standard, environmental behaviour score ranged from 22 to 58. There was no student with the excellent environmental behaviour (i.e. 59 to 60, Table 1). The maximum proportion of the students had the positive (i.e. 40%), followed by that with the average (i.e. 30%) and negative (i.e. 24%) behaviour (Table 1). The proportion of students with positive, average and negative behaviour categories differed from each other. A meager 6% of the students have recorded the worst behaviour (i.e. <34).

Among the students of UG I year, environmental behaviour score ranged from 23 to 60. The minimum proportion of students recorded the excellent environmental behaviour (i.e. 0.6%, Table 1).

The maximum proportion of the students had the positive (i.e. 40%), followed by that with the average (i.e. 32%) and negative (i.e. 23%) behaviour (Table 1). The proportion of students with positive, average and negative behaviour categories differed from each other. A meager 4% of the students have recorded the worst behaviour (i.e. <34).

The proportion of students in the positive behaviour category was similar between XI and UG I year students (i.e. 40% each) that was much higher than that of the IX standard students (i.e. 28%). Similarly, the proportion of students in the negative behaviour category was the maximum for IX standard students (i.e. 31%) as compared with that for XI standard (i.e. 24%) and UG I year (i.e. 23%) students (Fig. 1). However, the proportion of students in the average behaviour category did not differ according to the level of education (i.e. ranging from 30 to 34%). These findings clearly denote that level of education had a significant impact on environmental behaviour of students, as was previously observed by Ziadat (2010) for Jordanian students. This is also clear that behaviour of students gets shape by middle level of education and does not improve much with further advanced studies. This may require a serious relook about the content and mode of syllabus of the UG students who are expected to be mentors of their juniors and expeditors for their seniors.

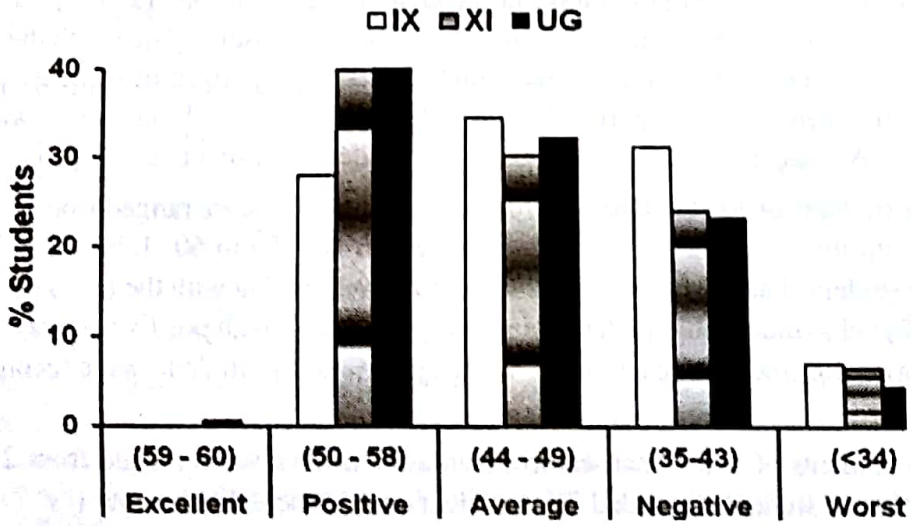
Table 1:

Distribution of students (%) in different performance categories of environmental behaviour

Performance Behaviour Category	Level of Education		
	IX standard	XI standard	UG I year
Excellent (59 to 60)	0	0	0.6
Positive (50 to 58)	27.8	39.8	40
Average (44 to 49)	34.3	30	32
Negative (35 to 43)	30.9	23.8	23
Worst (< 34)	6.9	6.4	4.4

Fig. 1:

Distribution of students in performance categories at different levels of education.



The mean environmental behaviour score was the minimum for IX standard students and the maximum for UG I year students (Table 2). The coefficient of variation varied narrowly from 14 to 15% among students of different levels of education, highlighting relatively consistent variation in scores across different levels. The mean environmental behaviour of students has consistently increased with the increase in level of education (Table 2). The mean scores differed significantly among different levels of education (Table 2, $Fp < 0.001$). The mean score was significantly lower in case of IX standard students as compared with that in XI standard and UG I year students, the latter two levels have recorded statistically similar values of mean behaviour (Table 2).

Table 2:

Comparison of mean environmental behaviour of students at different levels of education (the means with same alphabets are statistically equal to each other1).

Level	n	Mean	Standard Error	Coefficient of Variation
IX Standard	751	45.03 a	0.24	14.8%
XI Standard	651	46.54 c	0.27	14.8%
UG I year	643	47.18 c	0.26	14.0%

1Multiple comparisons of the means have been made on the basis of one-way analysis of variance test followed by Duncan's New Multiple RangeTest and Turkey's Procedure (Duncan, 1955; Scheffe, 1959; Turkey, 1953).

ANOVA Table

Source of Variation	Degree of Freedom	Sum of Squares	Mean Sum of Squares	F Ratio
Between levels of Education	2	1720.28	860.14	19.08***
Error	2042	92046.1	45.08	
Total	2044	93766.38		

***p=<0.001

The level of education has significantly impacted environmental behaviour of students. The proportion of students with average to positive environmental behaviour consistently improved between IX standard and UG I year, i.e. it was 62% for IX, 70% in XI and 73% in UG I year students. Majority of students at all levels of education exhibited average to positive environmental behaviour, while a minority (i.e. 27 to 38%) of students recorded the negative to worst behaviour. These findings are consistent with those reported for the societies of other countries (Clark et al., 2003; Tonglet et al., 2004; Onder, 2006).

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