

A COMPARATIVE STUDY OF ENVIRONMENTAL ATTITUDE AMONG STUDENTS OF SECONDARY SCHOOL IN IRAN AND INDIA

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Abstract

In this study, the author investigated secondary school students' environmental attitude in India and Iran. Nine hundred and ninety-one students were selected through the stratified random sampling technique from 103 secondary schools of Mysore city (India) and Tehran city (Iran). Subjects consisted of 476 boys and 515 girls. They were assessed using the Taj Environmental Attitude Scale (TEAS) developed by Haseen Taj (2001). Results revealed that there are significant differences between them in environmental attitude across and within two groups with regard to their gender. Also, type of school management (govt. and private) is a factor, which can affect students' environmental attitude.

Keywords

Environmental attitude, Health and Hygiene, Wild life, forests, Polluters, Population explosion, Environmental concern, Iran, India, Government and private schools, Taj Environmental Attitude Scale (TEAS)

Introduction

We have entered the 21st century, an era of science and technology, man has made his life much more comfortable than ever before. While doing so, he has destroyed forests, polluted air and water, and disturbed nature's balance. The rate of extinction of species of animals and plants has been rising. How to avert this catastrophe? The obvious answer is Environmental Education. We can save our species only when we organize EE programmes on a large scale.

The last 20 years have been growing international recognition that the challenges

associated with environmental degradation and sustainable development have important implications for, and connection with, education and schooling [1]. Allied with this increasing recognition for environmental education has been a concomitant growth in the field to environmental education research. Recent description of the field have highlighted its rapidly expanding size and increasingly diverse nature. Particularly over the last ten years. The research efforts undertaken in the context of school-based environmental education have clarified the

theoretical status as the measurement of the attainment variables such as environmental awareness, environmental attitude, environmental concern, pro-environmental behaviour, etc. and studies on the influence of learner variables on the attainment in the field of environmental education [2, 3, 4]. But at the same time the research results concerning one of the most important outcome variables, viz. environmental interest, are rather disappointing and hence the authors have made a modest attempt to take up the present study. So, in this paper a comparative Study of environmental attitude among secondary school students in Iran and India has been performed and state of awareness in this area is monitored. Also in this study Government school, a school that is paid for the government and provides free education. Compare private school, noun a school that receives no money from the government and where the education of the students is paid for by their parents.

RESEARCH METHODOLOGY

The present study is an attempt to examine the environmental attitude of secondary school students in relation to residential background, gender and type of school. This section explains the hypotheses, sample, instrument, procedure, scoring and statistical techniques used for the study.

HYPOTHESES

Following null hypotheses were formulated for testing the assumptions:

Hypothesis 1

There is no significant difference in the level of environmental attitude among secondary

school students in Tehran and Mysore.

Hypothesis 2

There is no significant difference between boy and girl students in their level of environmental attitude.

Hypothesis 3

There is no significant difference between Government and private school students in their level of environmental attitude.

Sample

A sample of 991 (476 boys and 515 girls) secondary school students was selected from different schools in Mysore city (India) and Tehran city (Iran). The students were selected both from government and private schools. Stratified random sampling technique was used to select the sample [5].

INSTRUMENT

The tool used in the present investigation was the Taj Environmental Attitude Scale (TEAS) developed by Haseen Taj (2001), Bangalore University. This tool measures environmental attitude of students as consisting of six areas dealt within the scale are attitude toward: (i) Population, (ii) Health and hygiene, (iii) Polluters, (iv) Wild life, (v) Forests and (vi) Environmental concerns. There are several items in each area, thus constituting the total of 61 items on the scale. For Indian students, the original English version and for Iranian teachers translated version in Persian was used. Initially, the Persian version was administered as a pre-test to 50 boys and 50 girls Iranian students to find out the suitability of the instruments. With a few minor revisions,[5] the main study was continued based on the suggestion given by the students on the pre-test. The split-half

reliability has been found to be 0.79.

PROCEDURE

In India, the Investigator personally visited all the selected schools and met the students for explaining the purpose of study and instructed them as how to respond to the questionnaire. Also, for students, whenever, they had doubt in understanding questions, investigator made those questions very clear to them. The same procedure was done in Iran.

SCORING

Each item alternative is assigned a weight age ranging from 4 (strongly agree) to 1 (strong disagree) for favorable items. In case of unfavorable items the scoring is reversed, i.e. from 1 (strongly agree) to 4 (strongly disagree). The attitude score of an individual is the sum total of item scores on all the six areas. The range of scores is from 61 to 244 with the higher score indicating the more favorable attitude towards environment and vice versa[5].

STATISTICAL ANALYSIS

Using SPSS statistical package,[6] Two-way ANOVA (analysis variance) was employed to find out the difference in various aspects from the level of environmental attitude including gender, type of school and country in each aspect.

RESULTS

1. In this study the level of environmental attitude has been identified on the basis of their scores on the Taj Environmental Attitude Scale under three levels using the criteria –

the average of the maximum weight age and minimum weight age for the total number of items in the scale + SD of the scores obtained on the scale.

The finding from table 1 indicates that there is a significant difference ($\chi^2 = 44.74$, $P^* < 0.001$) in the level of environmental attitude of students in India and Iran. It was found that nearly 57 per cent of Indian students and 37 per cent of Iranian students exhibited average level of environmental attitude. But, the number of Iranian students with high level of environmental attitude (62.70 per cent) is more than their counterparts in India (43.20 per cent).

In addition, an attempt has been made to find the differences between students in two countries regarding the level of environmental attitude for each of the six sub factors of the student environmental attitude scale. Weight age for each of the six sub factors were calculated based on the mean scores obtained and the ranked from the Highest per cent to the lowest per cent. The details are made available in tables 2, 3 and 4.

The findings of tables 2, 3 and 4 reveal that the three top ranking aspects of environmental attitude for Indian students are: 'Population explosion', 'Environmental concern' and 'Health and hygiene'. Three top ranking aspects of environmental attitude for Iranian students are: 'Population explosion', 'Health and hygiene' and 'Environmental concern'. In both the countries 'Population explosion' and 'Environmental concern' are two aspects of environmental attitude, which have made students have favorable

attitude towards their environment. The table also indicate that the students do not have adequate level of attitude towards the sub factor 'the forest'.

The above findings is in agreement with the findings of [7, 8, 9] who found that only a small proportion of the students have high levels of interest in environmental matters. Therefore we should undoubtedly attempt to enhance their knowledge and awareness with a real sense of environmental commitment as an obvious goal. Natural history museums, public displays of animals and plants, and taking part in outdoor recreational activities could play significant role in the achievement of this target.

2. The results of the ANOVA test are prepared in tables 5, 6, 7 and 8. These tables presented below show F, significance and mean value of students environmental attitude scores based on their country as well as gender and type of school.

The tables 5 and 6 are examined and interpreted in the following way.

In the overall comparison the statistical results indicate that there is a significant difference in the level of environmental attitude between boys and girls.

Comparison of environmental attitude of students with respect to countries:

Tables 5 and 6 indicate that there is a significant difference between Indian and Iranian students in five sub factors of environmental attitude. In sub factors like 'Health and Hygiene' ($F = 48.071, p < 0.000$), 'Wild life' ($F = 4.586, p < 0.032$), 'Forests' ($F=42.904, p < 0.000$), 'Population Explosion' ($F=3.963, p < 0.047$) and 'Environmental concern' ($F=20.917, p < 0.000$). In these four sub factors 'Health and Hygiene', 'Forests',

'Population Explosion' and 'Environmental Concern' Iranian students scored significantly higher than Indian students.

Only in 'Wild life' sub factor, Indian students scored significantly higher than Iranian students. Also in 'polluters' other sub factor of environmental attitude, no difference was found between students of India and Iran.

Comparison of environmental attitude of students with respect to gender:

There is a significant difference between boy and girl students in some sub factors of environmental attitude. In sub factors like 'Wild life' ($F = 14.055, p < 0.000$), 'Polluters' ($F=5.112, p < 0.024$), 'Population Explosion' ($F=21.933, p < 0.000$) and 'Environmental concern' ($F=26.917, p < 0.000$) girl students significantly higher than boy students. In other sub factors of environmental attitude both boy and girl students scored almost equally.

Interaction effects: The significant interaction effects between countries and gender for one of the sub factors of environmental attitude indicate that in Iran girl students have favorable attitude about 'Environmental Concern' ($F=4.555, p < 0.033$) towards their environment, than their counterparts in India. Results of the interaction effect for other sub factors of environmental attitude were not found significant.

Comparison with Other Studies

The findings of the study indicate that in the overall comparison there is a significant difference between boy and girl students in their level of environmental attitude. This

Table 1: Number and percentage of students falling under different levels of environmental attitude

Level of score limit environmental attitude of students		Average (115-168)	High (169-244)	Total
India	No.	284	216	500
	%	56.8	43.2	100.0
Iran	No	183	308	491
	%	37.3	62.7	100.0
Total	No	467	524	991
	%	47.1	52.9	100.0

Table 2: Rank order of Environmental attitude of students (India)

Rank	Dimensions	Mean	SD	% weight age
1	Population explosion	14.79	3.37	72.18
2	Environmental concern	40.96	5.69	71.39
3	Health and hygiene	14.23	2.67	69.44
4	Wild life	16.12	3.51	65.56
5	Polluters	69.31	8.94	65.04
5	Forests	12.64	2.33	61.68

Table 3: Rank order of Environmental attitude of students (Iran)

Rank	Dimensions	Mean	SD	% weight age
1	Population explosion	15.22	2.74	74.27
2	Health and hygiene	15.19	1.53	74.13
3	Environmental concern	42.53	4.60	74.12
4	Forests	13.52	1.82	65.98
5	Polluters	69.08	5.09	64.83
6	Wild life	15.72	2.88	63.93

Table 4: Rank order of Environmental attitude of students (Overall)

Rank	Dimensions	Mean	SD	% weight age
1	Population explosion	15.01	3.06	73.23
2	Environmental concern	41.75	5.15	72.76
3	Health and hygiene	14.71	2.10	71.79
4	Polluters	69.20	7.02	64.94
5	Wild life	15.92	3.20	64.75
6	Forests	13.08	2.08	63.83

finding is in agreement with the findings of [10, 11, 12] who reported that there is significant difference in environmental attitude of boys and girls. In most of the studies, boy students were found significantly higher than girl students with respect to their environmental attitude. However the study conducted by [7, 13, 14, 15] who reported that gender has no effect on environmental attitude of

students. The tables 7 and 8 are examined and interpreted in the following way.

In the overall comparison the statistical results indicate that there is a significant difference in the level of environmental attitude between government and private school students.

Archive of SID Table 5: Mean scores for various dimensions of students environmental attitude with reference to country and gender

Environmental attitude of students	Gender	India	Iran	Overall
Health and Hygiene	Boys	13.99	15.20	14.57
	Girls	14.47	15.18	14.83
	Overall	14.23	15.19	14.71
Wild life	Boys	15.83	15.20	15.53
	Girls	16.40	16.16	16.28
	Overall	16.12	15.72	15.92
Forests	Boys	12.56	13.39	12.95
	Girls	12.71	13.63	13.18
	Overall	12.64	13.52	13.07
Polluters	Boys	69.06	68.23	68.66
	Girls	69.57	69.81	69.69
	Overall	69.31	69.08	69.20
Population Explosion	Boys	14.41	14.65	14.52
	Girls	15.17	15.70	15.44
	Overall	14.79	15.22	15.00
Environmental concern	Boys	40.46	41.25	40.84
	Girls	41.46	43.63	42.57
	Overall	40.96	42.53	41.74
Total	Boys	166.45	168.01	167.19
	Girls	170.11	174.04	172.13
	Overall	168.28	171.26	169.76

Table 6: Result of two-way ANOVA for mean students environmental attitude score in various areas with reference to country and gender

Environmental attitude of students	Source of variation	F-value	Significance
Health and Hygiene	Between countries (A)	48.071	0.000
	Between gender (B)	2.694	0.101
	Interaction (A x B)	3.352	0.067
Wild life	Between countries (A)	4.586	0.032
	Between gender (B)	14.055	0.000
	Interaction (A x B)	0.907	0.341
Forests	Between countries (A)	42.904	0.000
	Between gender (B)	2.135	0.144
	Interaction (A x B)	0.102	0.749
Polluters	Between countries (A)	0.396	0.529
	Between gender (B)	5.112	0.024
	Interaction (A x B)	1.334	0.248
Population explosion	Between countries (A)	3.963	0.047
	Between gender (B)	21.933	0.000
	Interaction (A x B)	0.582	0.446
Environmental concern	Between countries (A)	20.677	0.000
	Between gender (B)	26.917	0.000
	Interaction (A x B)	4.555	0.033
Total	Between countries (A)	7.437	0.007
	Between gender (B)	23.198	0.000
	Interaction (A x B)	1.384	0.240

dfs A (1.987), B (1.987) and AxB (1.987)

students with respect to countries: Tables 7 and 8 indicate that there was a significant difference between two countries in four sub factors of student's environmental attitude. In four sub factors of environmental attitude, namely 'Health and Hygiene' ($F = 50.755$, $p < 0.000$), 'Forests' ($F = 44.388$, $p < 0.000$), 'Population Explosion' ($F=5.672$, $p < 0.017$) and 'Environmental Concern' ($F=26.250$, $p < 0.000$), Iranian students scored significantly higher attitude on 'Health and Hygiene', 'Polluters', 'Population Explosion' and 'Environmental Concern' compared with Government school students.

Comparison of environmental attitude of students with respect to schools:

There is a significant difference between Government and private schools on four sub factors of students environmental attitude, namely, 'Health and Hygiene' ($F=7.856$, $p < 0.005$), 'Polluters' ($F=11.952$, $p < 0.001$), 'Population Explosion' ($F=6.876$, $p < 0.009$) and 'Environmental Concern' ($F=13.077$, $p < 0.000$), in private school students scored significantly higher than government school students.

Interaction effects: The significant interaction effects between countries and type of school reveals that five sub factors of students environmental attitude 'Health and Hygiene', 'Wild life', 'Polluters', 'Population Explosion' and 'Environmental Concern' there is a significant difference between students in both countries, in Iranian government school students scored significantly higher on 'Health Hygiene' ($F=8.781$, $p < 0.003$), 'Population Explosion' ($F=22.803$, $p < 0.000$) and 'Environmental Concern' ($F=41.594$,

$p < 0.000$) whereas in India private school students scored significantly higher on 'Wild life' ($F=9.227$, $p < 0.002$) and 'Polluters' ($F=26.009$, $p < 0.000$).

Comparison with Other Studies

In this study it was found that in the overall comparison the type of school has showed a positive influence on the level of student's environmental attitude. This finding is in agreement with the findings of [13], who reported that there is significant difference between students of government and private schools in the level of environmental attitude. However the study conducted by [14], indicate that the type of school management has no effect on students environmental attitude.

Conclusions

A . The findings relates to first hypothesis reveals that there is a significant difference in the level of environmental attitude of students in India and Iran. In this study it was found that there is a significant difference between two countries in terms of level of students environmental attitude. The study found that 57 per cent of Indian students and 37 per cent of Iranian students exhibited average level of environmental attitude. But, the number of Iranian students with high level of environmental attitude (62.70 per cent) is more than their counterparts in India (43.20 per cent).

Table 1 indicates that there is a significant difference ($X^2 = 44.74$, $p < 0.001$) between the level of environmental attitude of students in both countries. Therefore the previously formulated hypothesis is rejected.

B . The findings relates to second hypothesis

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Table 7: Mean scores for various dimensions of students environmental attitude with reference to country and type of school

Environmental attitude of students	Type of school	India	Iran	Overall
Health and Hygiene	Government	13.81	15.20	14.53
	Private	14.61	15.18	14.88
	Overall	14.23	15.19	14.71
Wild life	Government	15.74	15.97	15.86
	Private	16.45	15.45	15.98
	Overall	16.12	15.72	15.92
Forests	Government	12.55	13.49	13.04
	Private	12.71	13.55	13.11
	Overall	12.64	13.52	13.07
Polluters	Government	67.25	69.44	68.39
	Private	71.15	68.69	69.99
	Overall	69.31	69.08	69.20
Population Explosion	Government	14.03	15.42	14.75
	Private	15.46	15.00	15.24
	Overall	14.79	15.22	15.00
Environmental concern	Government	39.25	42.97	41.18
	Private	42.48	42.06	42.28
	Overall	40.96	42.53	41.74
Total	Government	162.84	172.42	167.81
	Private	173.14	170.02	171.67
	Overall	168.28	171.26	169.76

Table 8: Result of two-way ANOVA for mean students environmental attitude score in various areas with reference to country and type of school

Environmental attitude of students	Source of variation	F-value	Significance
Health and Hygiene	Between countries (A)	50.755	0.000
	Between schools (B)	7.856	0.005
	Interaction (A x B)	8.781	0.003
Wild life	Between countries (A)	3.615	0.058
	Between schools (B)	0.236	0.627
	Interaction (A x B)	9.227	0.002
Forests	Between countries (A)	44.388	0.000
	Between schools (B)	0.719	0.397
	Interaction (A x B)	0.132	0.717
Polluters	Between countries (A)	0.086	0.769
	Between schools (B)	11.952	0.001
	Interaction (A x B)	26.009	0.000
Population explosion	Between countries (A)	5.672	0.017
	Between schools (B)	6.876	0.009
	Interaction (A x B)	22.803	0.000
Environmental concern	Between countries (A)	26.250	0.000
	Between schools (B)	13.077	0.000
	Interaction (A x B)	41.594	0.000
Total	Between countries (A)	10.621	0.001
	Between schools (B)	15.925	0.000
	Interaction (A x B)	41.181	0.000

reveals that there is a significant difference between boy and girl students in some sub factors of environmental attitude. In sub factors like 'Wild life' ($F = 14.055$, $p < 0.000$), 'Polluters' ($F = 5.112$, $p < 0.024$), 'Population explosion' ($F = 21.933$, $p < 0.000$) and 'Environmental concern' ($F = 26.917$, $p < 0.000$) girl students significantly higher boy students. In other sub factors of environmental attitude both boy and girl students scored almost equally.

The table 6 indicates that in the overall comparison there is a significant difference ($F = 23.198$, $p < 0.000$) between boy and girl students in their environmental attitude. Therefore the previously formulated hypothesis is rejected.

C. The findings relates to third hypothesis reveals that there is a significant difference between government and private schools on four sub factors of students environmental attitude ,namely 'Health and hygiene' ($F = 7.856$, $p < 0.005$), 'Polluters' ($F = 11.952$, $p < 0.001$), 'Population explosion' ($F = 6.876$, $p < 0.009$) and 'Environmental concern' ($F = 13.077$, $p < 0.00$), in private school students scored significantly higher than government school students.

The table 8 indicates that in the overall comparison there is a significant difference between government and private school students ($F = 15.925$, $p < 0.000$).

Therefore it may be concluded that the type of school is significantly related to students environmental attitude. Therefore the previously formulated hypothesis is rejected.

FINDIUGS

In this study the hypothesis no.1 to 3 pertains to students environmental attitude .Each of three hypotheses were analyzed, interpreted and compared with other studies and conclusions have been drawn. The following are the summary of the findings related to the three hypotheses:

Hypothesis 1

The study indicates a significant difference in the level of environmental attitude among secondary school students in India and Iran. Number of Iranian students with high level of environmental attitude (62.70 per cent) is more than their counterparts in India (43.20 per cent). 57 per cent of Indian students and 37 per cent of Iranian students showed an average level of environmental attitude

Hypothesis 2

Gender has influence on environmental attitude of students. In both the countries girl students showed better attitude than boy students towards environment.

Hypothesis 3

In both the countries type of school management has influence on environmental attitude of students. Iranian government school students show better attitude towards environment than private school students whereas Indian private school students show better attitude towards environment than government school students.

Suggestions

Teachers can play an important role In educating their students about environment which is possible only when the teachers themselves have the necessary level of environmental attitude , for this purpose , the government should introduce and enrich

environmental education programmes in both in service and pre service teachers programmes.

Various co-curricular activities in schools may be encouraged to help in developing students environmental attitude.

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