Original Research Article

A comparative study of environmental awareness and eco friendly behaviour among the Science and non science (commerce and arts) under graduate students of Bhopal district

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INTRODUCTION

Man is the supreme of all creatures on this earth, and God created Nature for supporting man's life. His relationship with environment has been undergoing changes continuously the reason is rapid scientific advancement. These scientific changes in population have also changed the structure of social values resulting in changes of people's attitude towards environment. All the life supporting system compromises the human environment and affects them directly or indirectly. Man became aware of them ever since the Stone Age, when he started taking the support of his environment for better living standards. Man's exploitation of hidden treasures of nature and his greed resulted in insensitive exploitation of natural resources. At the same time the population increased tremendously, cutting short per living beings share in natural resources. This resulted in a dis-balance between the natural resources and its consumers; slowly man started realizing the adverse effects and danger to his life due to the excessive exploitations of nature. He therefore started finding out ways of conserving natural resources for future. But just a handful of people could be aware of the disastrous situations. It was very essential that each living being should be made aware with regard to how he could contribute to save the nature for the future generations to come. For this the best way sort out is to bring awareness among the younger generation through their academic curriculum. The present study targets at finding out the environmental awareness and the eco-friendly behaviour among the Science and non science (Commerce and Arts) under graduate students of Bhopal district. The thought provoking idea behind it was the fact that students from all the streams have Environmental studies as a part of their foundation course curriculum in the second year but still their environmental awareness and eco friendly behaviour differs.

OPERATIONAL DEFINITION

Environmental Awareness: Environmental Awareness is the knowledge that one gains through academic curriculum

Eco-Friendly Behaviour: Eco-friendly behviour is the application of one's knowledge of environment.

The Tools Used: The following tools were used in the present study
1. Environmental Awareness Ability Measure (EAAM) (1998) by Dr. P.K. Jha.
2. Eco-Friendly Behaviour Inventory (2014) by Pallavi Shrivastava and Dr. K.R. Sharma.

Variable
Independent Variables
Different Stream (Science, Commerce and Art)
Dependent Variable
Environmental Awareness
Eco-Friendly Behaviour

The Statistical Technique Used: The purpose of the present study was to compare the environmental awareness and eco-friendly behaviour of Science and non

science (Commerce and Arts) under graduate students. Hence, **Mean and Standard deviation** of each group were calculated. The comparisons between different groups was made on the basis of the Critical Ratio with 0.05 and 0.01 level of confidence considered significant.

Objective

1. To study the significant difference of environmental awareness among science, commerce and art stream students.
2. To study the significant difference of eco-friendly behaviour among science, commerce and art stream students

Hypothesis

1. There is no significant difference of environmental awareness among science, commerce and art stream students.

2. There is no significant difference of eco-friendly behaviour among science, commerce and art stream students.

Result analysis and interpretation

There is no significant difference of environmental awareness among science, commerce and art stream students. To study and compare the different dimensions of environmental awareness among Science, Commerce and Arts students .for this purpose Environmental Awareness Ability Measure (EAAM). The following table shows the Mean, S.D. and Critical Ratio of the different areas of environmental awareness among science, commerce and art stream students.

RESULT

Table 1: Showing Environmental Awareness among Science, Commerce And Art stream students

Different areas of Environmental Awareness	Stream						Critical Ratio		
	A Science Mean	SD	B Commerce Mean	SD	C Art Mean	SD	A and B	A and C	B and C
a. Cause of pollution	5.87	1.13	5.64	1.30	5.78	1.13	2.55**	1.00	1.55
b.Conservation of soil forest, air etc	10.67	1.88	10.75	2.01	10.26	1.81	0.53	2.93***	3.27***
c. Conversation of human health	12.10	1.90	12.07	2.03	11.82	1.93	0.20	1.87	1.67
d. Conversation of wild life and animal husbandry	6.91	1.28	6.76	1.27	6.73	1.28	1.50	1.80	0.30
Energy conservation	6.10	1.40	6.05	1.41	5.62	1.50	0.45	4.36	3.91
Total	**41.55**	**5.85**	**41.28**	**6.18**	**40.23**	**5.34**	**0.59**	**3.07***	**2.33****

p < 0.01 → 2.60***, p < 0.05 → 1.97**

The table shows that science students have high Environmental Awareness (mean 41.55) than commerce stream (mean 41.28) students. But the art stream students have relatively least Environmental Awareness (mean 40.23) than science and commerce stream students. The science stream students have scored high in different areas of Environmental Awareness like causes of pollution (mean 5.87), conservation of human health (mean 12.10), conservation of wild life (mean 6.91) and energy conservation (mean 6.10) than commerce and art stream students. The commerce stream students have high conservation of soil awareness (mean 10.75) than science and art stream students. The art stream students have relatively low awareness regarding conservation of soil (mean 10.26), conservation of human health (mean 12.07), conservation of wild life (mean 6. 73) and energy conservation (mean 5 . 62) awareness than science and

commerce stream students. Hence the null hypothesis (3) stating that **"There is no significant difference of Environmental Awareness among science, commerce and art stream students."** is rejected. The science stream student have significantly better Environmental Awareness than art stream students while commerce stream students have significantly better environment awareness than art stream students.

There is no significant difference of eco-friendly behaviour among science, commerce and art stream students.

An attempt has been to study and compare different areas of eco-friendly behaviour among science, commerce and art stream students. The Table 2 shows the Mean, Standard Deviation (S.D.) and Critical Ratio of the different areas of eco-friendly environmental behaviour among science, commerce and art stream students.

Table 2: Showing Eco- Friendly Behaviour among Science, Commerce and Art stream students

Different areas of Eco freindly behaviour	Stream						Critical Ratio		
	A Science Mean	SD	B Commerce Mean	SD	C Art Mean	SD	A and B	A and C	B and C
a. Human Health	4.03	0.89	4.02	0.89	4.12	0.85	0.14	1.28	1.43
b.Environmental Conservation	4.32	0.72	4.19	0.72	4.35	0.71	2.60***	0.60	3.20***
c. Energy Conservation	4.13	0.92	4.20	0.87	5.91	3.71	1.00	8.47***	3.38***
d. Water Conservation	4.26	0.69	4.11	0.84	4.81	1.47	2.50**	6.11***	7.78***
e. Air Conservation	4.52	0.81	4.50	0.91	4.66	0.97	0.33	2.00**	2.28**
f. Forest and Wild Life	4.71	0.74	4.72	0.73	4.71	0.67	0.17	0.00	0.20
g. Bio diversity Conservation	4.46	0.81	4.56	0.74	4.52	0.79	1.67	1.00	0.67
h. To make peaceful earth noise	3.77	1.14	3.90	1.11	3.71	1.11	1.62	0.67	2.37**
Total	**34.24**	**4.04**	**34.23**	**4.51**	**34.08**	**3.95**	**0.03**	**0.51**	**0.45**

$p < 0.01 \rightarrow 2.60***$, $p < 0.05 \rightarrow 1.97**$

The Table 2 shows that science stream students have good eco-friendly behaviour (mean 34.24) than commerce stream (mean 34.23) and art stream (mean 34.08) students. But the art stream students have good eco-friendly behaviour in different areas as human health (mean 4.12), environmental conservation (mean 4.35), energy conservation (mean 5.91), water conservation (mean 4.81) and air conservation (mean 4.66) than science and commerce stream students. The commerce stream students have better eco-friendly behaviour as forest and wild life (mean 4.72), Bio-diversity conservation (mean 4.56) and to make peaceful earth-noise (mean 3.90) than science stream and art stream students. To study the significant difference of eco-friendly behaviour among science, commerce and art stream students, the Critical Ratio was calculated. The Critical Ratio value required to be significant at 0.01 lev el is 2.59 and at 0.05 level is 1.96. It may be revealed from Table 2 that there is no significant difference of eco-friendly behaviour between science and commerce stream students at 0.05 level. The Critical Ratio found 0.03, which is not significant at 0.05 level. There is no significant difference of eco- friendly behaviour between science and art stream students (Critical Ratio 0.51) at 0.05 level. There is also no significant difference of eco-friendly behaviour between commerce and art stream students at 0.05 level. The Critical Ratio found 0.045, which is not significant at 0.05 level. There is significant difference among science, commerce and art stream students in different areas of eco-friendly behaviour. Thus the null hypothesis (6) stating that **"There is no significant difference of eco-friendly behaviour among science, commerce and art stream students."** is rejected.

CONCLUSION

Hence we conclude that science stream students have better environmental awareness and eco-friendly behaviour when compared to commerce and arts stream students.

So now the question is why is this gap and what can be done to bridge this gap?

Reasons

- Reason to this is the fact that the science students deal with environmental studies including its causes, conservation etc. more widely and deeply. They deal with the subject with scientific aspect. They teach students about various physiological and chemical traits of environment hence giving them extensive knowledge about the subject.
- On the other hand commerce and arts students have comparatively less environmental awareness .The reason being that they do not get enough exposure to environmental awareness because the curriculum is not designed according to the scientific aspect which is required for a better understanding of the subject.
- Commerce students are more aware than the arts students because of the various natural an artificial resources that are involved in their commercial activities hence they are obviously more aware about environment when compared to arts students.
- Science stream students are more eco-friendly as compared to commerce and arts stream students due to the broad knowledge they posses related to their subject which educates them in all the aspects of environment how it is caused, cured, conserved. Therefore they easily adopt themselves and become friendly with the environment.

What can be done to bridge this gap?
Modify the Curriculum
- The aim of curriculum should be to inculcate the feeling of environmental protection in their behaviour through these books.
- The sequence of the contents should be systematic and inter related.
- Each and every topic should be dealt in detail with real life examples.
- Environment is a common concern so why to restrict it to science stream only . It should be added as a main subject for other stream students also.
- EVS is studied as a part of foundation course only in the second year . It should rather be there in all the three years.
- Updated learning materials must be prepared, teachers must be included in their enrichment program and module development.
- Since environmental literacy includes attitudes and behavior, practical work must be included as an integral part of education programs in order to affect these indicators.

Suggestions For The Teachers
- More emphasis on outdoor /outside classroom education and field based activities.
- Every teacher should use immediate environment as a medium of learning in their practice teaching sessions
- Use of non-conventional teaching approaches such as performing arts, crafts, songs and dramas for organizing learning experiences should be used.
- Go for a specialized degree in the subject . Learning will improve teaching.
- Total number of hours prescribed for teaching EVS paper should more.
- In the teaching of EVS, pedagogical principles such as Known to unknown, simple to complex, local to global environment, contextualization, constructivist and activity oriented approaches, etc., need to be stressed.

SOME PARTICIPATORY AND INNOVATIVE METHODS
- Field visit
- Group discussion
- Situation analysis
- Role playing :
- Environmental games
- Field survey
- Project work

- Multimedia technologies
- Team projects
- Student Clubs
- School Calendar
- School grounds
- Service learning
- Students as teachers
- Teaching with local environmental issues
- Celebrations through the school year
- Quiet time in nature

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