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A study of responsible environmental behaviour among B.Ed. Learners with reference to their locality, gender, stream & socio economic status

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Abstract
Various environmental problems pose a threat to environmental sustainability, among which global warming, urban air pollution, water shortages, environmental noise, and loss of biodiversity. Many of these problems are rooted in human behaviour. To address global environmental challenges it is crucial to understand how humans make decisions about environmentally relevant behaviour, since a shift to alternative behaviors can make a relevant difference. Professor George Wald has summarized in the Heritage: *"Three billion years of life, three millions years of manlike creatures, ten thousand years of civilization and a mere 200 years of the industrial revolution have brought us to the brink of disaster".*
In this paper the research scholar has attempted a study of responsible environmental behaviour among B.Ed. students in two prime universities of State of Haryana i.e. Kurukshetra University, Kurukshetra (KUK) and Maharishi Dayanand University, Rohtak (M.D.U.).

Keywords: environment, environmental behaviour, environmental sustainability, responsible environmental behaviour

Introduction
Environment is global concept today. Environmental education is an approach to learning. It endeavors to create a way of thinking requiring people to overcome prejudices. It helps in programming learning experiences ranging from the simple to complex. The principal of environmental education is that it makes the pupil educated by problem related to understanding the environment and hazards of its pollution; the environmental education is socially relevant as it helps us to know how unchecked and unplanned development pollutes air, water and soil and thereby threatening our subsistence and existence.

Review of Literature
Muttaqi, A. conducted an investigation of development of curriculum, in biology for Secondary Schools of Bangladesh. The general aim of the study was to develop a curriculum of ecology which should be effective in developing environmental literacy among the students of VI, VII & VIII of some selected Schools of Bangladesh."
Ehsan, M.D. conducted an investigation on the environmental and educational programmes in the primary Schools of Bangladesh as an evaluative study. The study was conducted in three phases and survey method was used for the study. In the first phase the environmental studies for classes III, IV & V were taken. The second phase was concerned with opinion study of primary Schools teachers and teacher educators. The data was collected through a questionnaire both for primary teachers and teacher educators. The third phase was concerned with the development of modified programmes of environmental studies for classes III, IV and V. A validity assessment questionnaire was used for both teachers and teacher educators.
Vishwanath T. studied *"Awareness and sensitivity to Environment & human problems through curricular and co-curricular activities at the school level".* He has suggested guidelines for Environmental Education curriculum design at school level. The topics like – The Physical Universe, Flora & Fauna, Natural resources, social institutions, Nature's beauty, causes of ecological imbalances, consequences of ecological imbalances & possibility of ensuring ecological balance should be included.
Walter, Leal, Filho found in their case study in Brazil on local publications as an environmental awareness in formal teaching. The study was done by the help of 700 students of secondary schools in Salvador, Brazil. In this study, the information about the general aspects of ecology and conservation in the state were provided and circulated among 700 secondary school students. In order to obtain degree of acceptance of the book, teachers were invited to register their own and the students impression about it according to various scales.
Gilbertson, Kunneth investigated the effect of training on knowledge and attitude towards the environment in Minnesota. The study reveals that the change in environmental literacy in second grade students in Minnesota after participating in one of four different level of outdoor educational training programme. A non-equivalent controlled group design (Campbell & Stanley 1963) was used. The purpose of the study was to investigate the relationship between changes in environmental literacy to type of environmental learning received.
Shahnawaj, *studied "Environmental awareness and environmental attitude of secondary and higher secondary school teachers and students."* The study was conducted mainly through a survey and the application of a tool developed by the investigator to test attitudes and awareness.
Gopalkrishan, Sarojini studied *"Impact of Environmental Education on primary school children".* Only 5th class students were selected at random from schools of Nilgris

Madras and Coimbatore.

JAIN, S.C. studied 'the Environmental Education in Nigerian School.' The article is based on the time devoted to the teaching of natural science is less compared to the amount of content provided in the syllabi. The emphasis is on the need to give more weightage to the practical aspects of science. The greater emphasis on the environmental sciences will establish human attitude for wide use of natural resources. The use of objects from local environment has an advantage in showing students that science is intimately related to the real situations of life. Lack of well qualified teachers and laboratories is the major problem in effective teaching.

Gaylen Nancy Irwin, attempted *'to measure parental attitude towards Environmental Education'.* The objective of the study was to measure parental attitude towards environmental education and identifies specific environmental topics affecting overall attitude. The study was conducted in five different communities that were chosen randomly, 100 parents from five different communities of elementary age school children were sent an environmental attitude inventory. The return rate was 50% the reliability of the survey was 92. The tests were analyzed by chi-square and analysis of covariance. The attitude scores were higher at higher income level.

Harriett Singleton Stubbs, investigated the interest of Minnesota teachers to teach the topic 'Acid rain with the help of desired teaching material. In this study a survey was needed to determine teaching materials desired by educators when introducing the topic of acid rain into the curriculum. A random sample of 1871 Minnesota science teachers. The data was returned by 593 teachers. These 593 teachers who introduced the current environmental topic of acid rain into their curriculum, indicated utilization of certain curriculum materials in 1981. Of the total respondent teachers 77.8% introduced the topic in the year 1981. 12% decided to teach the topic in the next year, 10% was of opinion not to introduce the topic.

Mosathiwane Modise, did a study of Botswana pre-service teachers environmental content knowledge and attitude towards environmental education and concern for environment quality. The purpose of the study was to assess pre-service teachers environmental will literacy. 112 pre-service teachers at four teachers training college in Botswana were administrated three instruments to evaluate their environmental content, knowledge, attitude towards environmental education and its teaching and concern about environmental quality.

Lion, Jenn, Chang attempted to identify the environmental knowledge, attitude, behavioural intention and behaviour of pre-service elementary teachers in Taiwan. The objective of the study was to examine environmental knowledge, attitude, and behavioural intention of pre-service teachers in Taiwan. The second objective was to explore the relationship between environmental knowledge, attitude, behavioural intention and behaviour. The study was conducted on 493 student enrolled in nine teacher's colleges in Taiwan in 2004. The research instrument was composed of five scales to measure the subjects above stated characteristics.

Objectives of the study

The objectives of the study are:

1. To study the level of Responsible Environmental Behaviour (REB) among B.Ed. Learners.
2. To compare the level of Responsible Environmental Behaviour (REB) among B.Ed. Learners on the Basis of Locality.
3. To compare the level of Responsible Environmental Behaviour (REB) among B.Ed. Learners on the Basis of Stream (Arts & Science).
4. To compare the level of Responsible Environmental Behaviour (REB) among B.Ed. Learners on the Basis of Gender.
5. To compare the level of Responsible Environmental Behaviour (REB) among B.Ed. Learners on the Basis of Socio-economic Status.

Hypothesis Development

Following hypothesis were developed for research work.

1. **Null Hypothesis H_0:** There is no significant difference between the Environmental Awareness of the B.Ed male and female students of K.U.K.
   Alternate Hypotheses H_1: There is significant difference between the Environmental Awareness of the B.Ed male and female students of K.U.K.
2. **Null Hypothesis H_0:** There is no significant difference between the Environmental Awareness of the B.Ed male and female students of M.D.U.
   Alternate Hypotheses H_1: There is significant difference between the Environmental Awareness of the B.Ed male and female students of M.D.U.
3. **Null Hypothesis H_0:** There is no significant difference between the Environmental Awareness of the B.Ed rural & urban students of K.U.K.
   Alternate Hypotheses H_1: There is significant difference between the Environmental Awareness of the B.Ed rural & urban students of K.U.K.
4. **Null Hypothesis H_0:** There is no significant difference between the Environmental Awareness of the B.Ed rural & urban students of M.D.U.
   Alternate Hypotheses H_1: There is significant difference between the Environmental Awareness of the B.Ed rural & urban students of M.D.U.
5. **Null Hypothesis H_0:** There is no significant difference between the Environmental Awareness of the B.Ed Arts & Science stream students of K.U.K.
   Alternate Hypotheses H_1: There is significant difference between the Environmental Awareness of the B.Ed Arts & Science stream students of K.U.K.
6. **Null Hypothesis H_0:** There is no significant difference between the Environmental Awareness of the B.Ed Arts & Science stream students of M.D.U.
   Alternate Hypotheses H_1: There is significant difference between the Environmental Awareness of the B.Ed Arts & Science stream students of M.D.U.
7. **Null Hypothesis H_0:** There is no significant difference between the Environmental Awareness of the B.Ed students of K.U.K. on the basis of Socio-economic status.
   Alternate Hypotheses H_1: There is significant difference between the Environmental Awareness of the B.Ed students of K.U.K. on the basis of Socio-economic status.
8. **Null Hypothesis H_0:** There is no significant difference between the Environmental Awareness of the B.Ed students of M.D.U. on the basis of Socio-economic status.
   Alternate Hypotheses H_1: There is significant difference

between the Environmental Awareness of the B.Ed students of M.D.U. on the basis of Socio-economic status.

9. **Null Hypothesis H_0:** There is no significant difference between the level of Responsible Environmental Behaviour among the B.Ed Learners of K.U.K. & M.D.U.
10. **Alternate Hypotheses H_1:** There is significant difference between the level of Responsible Environmental Behaviour among the B.Ed Learners of K.U.K. & M.D.U.

Research design for the study

For the present study a sample of 280 B.Ed students from two universities of Haryana were drawn. The sample consisted of 140 B.Ed. students from each university including male, female, rural and urban students. The universities from where the sample was drawn.

1. Kurukshetra University (K.U.), Kurukshetra.
2. Maharishi Dayanand University (M.D.U.) Rohtak.

The sample was drawn from colleges of Education of these universities. The B.Ed. students of only those college/institutes were selected who were studying environmental education as a part of their syllabi.

Demographic profile of the respondents

Table 1: University wise Distribution of Respondents

University	Respondents
KUK	140
MDU	140
Total	280

Source: Primary Data

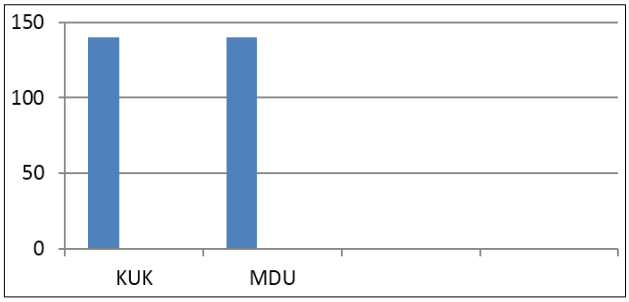

Fig 1: University wise distribution of Respondents

Table 2: Gender wise Distribution of Respondents

Gender	KUK	MDU
Male	70	70
Female	70	70
Total	140	140

Source: Primary Data

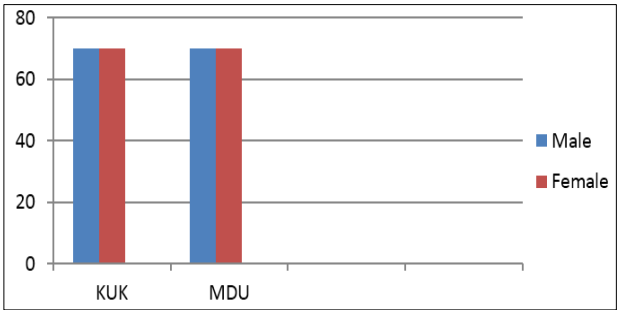

Fig 2: Gender wise distribution of Respondents

Table 3: Area wise Distribution of Respondents

Area	KUK	MDU
Urban	70	70
Rural	70	70
Total	140	140

Source: Primary Data

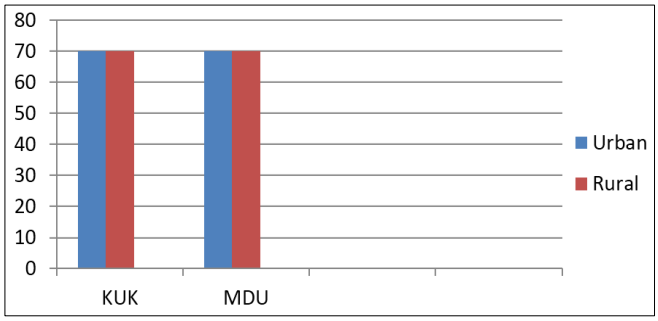

Fig 3: Area wise distribution of Respondents

Data analysis & interpretation

Statistical technique used in the analysis was Mean, Standard Deviation and 't' test, to find whether postgraduate male, female and rural, urban students of different universities differ significantly in Environmental Awareness and Implications of Environmental Awareness in real life situations.

1. Objective: To compare the Level of Responsible Environmental Behaviour (REB) among B.Ed. Learners on the Basis of Gender.

Hypothesis (H_0): There is no significant difference between the Environmental Awareness of the B.Ed. male and female students of K.U.K.

In order to find out the significance of difference between the Environmental Awareness of the B.Ed. male and female students of K.U.K., Mean and S.D. of two groups were obtained. The number of objects in each group was 70.

Table 4: Significance of difference between the Environmental Awareness scores of the B.Ed. male and female students of K.U.K.

Groups	Number	Mean	S.D.	't'	Level of Significance
Male	70	108.7	13.58	2.59	S
Female	70	113.27	14.2		

S= Significant at 0.05 level.

Table 4 shows that the difference in the mean scores of the B.Ed. male and female students of K.U.K. is significant at 0.05 level but insignificant at 0.01 level. So, the null hypothesis stands rejected. When results were compared in context of mean scores, it was found that mean environmental awareness scores in case of female B.Ed. students (M=113.27)is higher than that of male B.Ed students having mean environmental awareness scores of 108.7.

It means that the B.Ed. female students of K.U.K. have higher Environmental Awareness as compared to the B.Ed. male students of K.U.K.

Hypothesis (H_0): There is no significant difference between the Environmental awareness of B.Ed. male & female students of M.D.U.

In order to find out the significance of difference between the Environmental Awareness of the B.Ed. male and female students of M.D.U., Mean and S.D. of two groups were obtained. The number of objects in each group was 70.

Table 5: Significance of difference between the Environmental Awareness scores of the B.Ed. male and female students of M.D.U.

Groups	Number	Mean	S.D.	't'	Level of Significance
Male	70	104.6	14.34	2.46	S
Female	70	123.93	15.8		

S= Significant at 0.05 level.

Table5 shows that the difference in the mean scores of the B.Ed. male and female students of M.D.U is significant at 0.05 level but insignificant at 0.01 level. So, the null hypothesis stands rejected. When results were compared in context of mean scores, it was found that mean environmental awareness scores in case of female B.Ed. students (M=123.93)is higher than that of male B.Ed students having mean environmental awareness scores of 104.6.
It means that the B.Ed. female students of M.D.U. have higher Environmental Awareness as compared to the B.Ed. male students of M.D.U.

2. Objective: To compare the Level of Responsible Environmental Behaviour (REB) among B.Ed. Learners on the Basis of Locality.
Hypothesis (H_0): There is no significant difference between the Environmental Awareness of the B.Ed. Rural & Urban students of K.U.K.
In order to find out the significance of difference between the Environmental Awareness of the B.Ed. rural and urban students of K.U.K., Mean and S.D. of two groups were obtained. The number of objects in each group was 70.

Table 6: Significance of difference between the Environmental Awareness scores of the B.Ed. Rural & Urban students of K.U.K.

Groups	Number	Mean	S.D.	't'	Level of Significance
Rural	70	108.76	14.02	1.98	S
Urban	70	115.64	11.43		

S= Significant at 0.05 level.

Table6 shows that the 't' value (1.98) for difference in the mean scores of the B.Ed. rural and urban students of K.U.K. is significant at 0.05 level but insignificant at 0.01 level. So, the null hypothesis stands rejected. When results were compared in context of mean scores, it was found that mean environmental awareness scores in case of urban B.Ed. students (M=115.64)is higher than that of rural B.Ed students having mean environmental awareness scores of 108.76.
Hypothesis (H_0): There is no significant difference between the Environmental Awareness of the B.Ed. Rural & Urban students of M.D.U.
In order to find out the significance of difference between the Environmental Awareness of the B.Ed. rural and urban students of M.D.U., Mean and S.D. of two groups were obtained. The number of objects in each group was 70.

Table 7: Significance of difference between the Environmental Awareness scores of the B.Ed. Rural & Urban students of M.D.U.

Groups	Number	Mean	S.D.	't'	Level of Significance
Rural	70	99.76	15.28	1.97	S
Urban	70	105.74	14.0		

S= Significant at 0.05 level.

Table7 shows that the 't' value (1.97) for difference in the mean scores of the B.Ed. rural and urban students of M.D.U.is significant at 0.05 level but insignificant at 0.01 level. Hence, the null hypothesis stands rejected. When results were compared in context of mean scores, it was found that mean environmental awareness scores in case of urban B.Ed. students (M=105.74)is higher than that of rural B.Ed students having mean environmental awareness scores of 99.76.

3. Objective: To compare the Level of Responsible Environmental Behaviour (REB) among B.Ed. Learners on the Basis of Stream (Arts & Science).
Hypothesis (H_0): There is no significant difference between the Environmental Awareness of the B.Ed. Arts & Science stream students of K.U.K.
In order to find out the significance of difference between the Environmental Awareness of the B.Ed. Arts & Science stream students of K.U.K., Mean and S.D. of two groups were obtained. The number of objects in each group was 70.

Table 8: Significance of difference between the Environmental Awareness scores of the B.Ed. Arts & Science Stream students of K.U.K.

Stream	Number	Mean	S.D.	't'	Level of Significance
Arts	70	73.80	16.82	2.36	S
Science	70	80.88	16.74		

S= Significant at 0.05 level.

Table8 shows that the 't' value (2.36) for difference in the mean scores of the B.Ed. Arts & Science stream students of K.U.K. is significant at 0.05 level but insignificant at 0.01 level. So, the null hypothesis stands rejected. When results were compared in context of mean scores, it was found that mean environmental awareness scores in case of Science stream B.Ed. students (M=80.88)is higher than that of Arts stream B.Ed students having mean environmental awareness scores of 73.80.
Hypothesis (H_0): There is no significant difference between the Environmental Awareness of the B.Ed. Arts & Science stream students of M.D.U.
In order to find out the significance of difference between the Environmental Awareness of the B.Ed. Arts & Science stream students of M.D.U.., Mean and S.D. of two groups were obtained. The number of objects in each group was 70.

Table 9: Significance of difference between the Environmental Awareness scores of the B.Ed. Arts & Science Stream students of M.D.U.

Stream	Number	Mean	S.D.	't'	Level of Significance
Arts	70	94.42	17.08	2.37	S
Science	70	86.92	18.21		

S= Significant at 0.05 level.

Table9 shows that the 't' value (2.37) for difference in the mean scores of the B.Ed. Arts & Science stream students of M.D.U.. is significant at 0.05 level but insignificant at 0.01 level. So, the null hypothesis stands rejected. When results were compared in context of mean scores, it was found that mean environmental awareness scores in case of Arts stream B.Ed. students (M=94.42)is higher than that of Science stream B.Ed students having mean environmental awareness scores of 86.92.

4. Objective: To compare the Level of Responsible Environmental Behaviour (REB) among B.Ed. Learners on the Basis of Socio-Economic Status.

Hypothesis (H_0): There is no significant difference between the Environmental Awareness of the B.Ed. students of K.U.K on the basis of socio-economic status.

In order to find out the significance of difference between the Environmental Awareness of the B.Ed. students of K.U.K. on the basis of their Socio-Economic status, Mean and S.D. of two groups were obtained. The number of objects in each group was 70.

Table 10: Significance of difference between the Environmental Awareness scores of the B.Ed. students of K.U.K. on the basis of Socio-Economic status

Level	Number	Mean	S.D.	't'	Level of Significance
High	70	79.60	12.04	2.04	S
Middle	70	75.08	12.54		

S= Significant at 0.05 level.

Table 10 shows that the 't' value (2.04) for difference in the mean scores of the B.Ed. students of K.U.K. on the basis of their Socio-Economic status, is significant at 0.05 level but insignificant at 0.01 level. So, the null hypothesis stands rejected. When results were compared in context of mean scores, it was found that mean environmental awareness scores in case of B.Ed. students having high socio-economic level (M=79.60)is higher than that of having middle socio-economic level B.Ed students (75.08) of K.U.K.

It means that the B.Ed. students of high socio-economic status have better environmental awareness as compared to middle socio-economic status B.Ed students of K.U.K.

Hypothesis (H_0): There is no significant difference between the Environmental Awareness of the B.Ed. students of M.D.U. on the basis of socio-economic status.

In order to find out the significance of difference between the Environmental Awareness of the B.Ed. students of M.D.U. on the basis of their Socio-Economic status, Mean and S.D. of two groups were obtained. The number of objects in each group was 70.

Table 11: Significance of difference between the Environmental Awareness scores of the B.Ed. students of M.D.U. on the basis of Socio-Economic status

Level	Number	Mean	S.D.	't'	Level of Significance
High	70	92.51	16.24	2.06	S
Middle	70	86.21	17.2		

S= Significant at 0.05 level.

Table11 shows that the 't' value (2.06) for difference in the mean scores of the B.Ed. students of M.D.U. on the basis of their Socio-Economic status, is significant at 0.05 level but insignificant at 0.01 level. Hence, the null hypothesis stands rejected. When results were compared in context of mean scores, it was found that mean environmental awareness scores in case of B.Ed. students having high socio-economic level (M=92.51)is higher than that of having middle socio-economic level B.Ed students (86.21) of M.D.U.

It means that the B.Ed. students of high socio-economic status have better environmental awareness as compared to middle socio-economic status B.Ed students of M.D.U.

5. Objective: To study the Level of Responsible Environmental Behaviour (REB) among B.Ed. Learners.

Hypothesis (H_0): There is no significant difference between the level of Responsible Environmental Awareness of the B.Ed. students of K.U.K & M.D.U.

In order to find out the significance of difference between the level of Environmental Awareness of the B.Ed. students of K.U.K. & M.D.U., Mean and S.D. of two groups were obtained. The number of objects in each group was 140.

Table 12: Significance of difference between the Environmental Awareness scores of the B.Ed. students of K.U.K. on the basis of Socio-Economic status

Level	Number	Mean	S.D.	't'	Level of Significance
High	140	110.26	13.26	4.42	S
Middle	140	108.99	12.4		

S= Significant at 0.01 level.

Table 12 shows that the 't' value (4.42) for difference in the mean scores of the B.Ed. students of K.U.K.& M.D.U., is significant at 0.01 level. So, the null hypothesis stands rejected. When results were compared in context of mean scores, it was found that mean environmental awareness scores in case of K.U.K. B.Ed. students (M=110.26)is higher than that of M.D.U. B.Ed students having environmental awareness scores of 108.99.

It means that the B.Ed. students of K.U.K. have better level of Environmental Awareness in comparison to the B.Ed. students of M.D.U.

Implications of the study

Following are some educational implications of the study:

1. The study is supported to emphasise the need of the environmental awareness among the Secondary school students, to solve problems of environment pollution.
2. The present study has its implications for the teacher education, education planners, parent educators and educational administrators. It is high time to make environmental education as compulsory subject for all the students.
3. The present study will guide the teachers of rural and urban area to make their students more aware about the environment.
4. The present study will be helpful for the parents also as they can read out the findings and can learn many revealed facts about environmental awareness.

5. The present study will create the awareness about the Environment Awareness among the teachers also.
6. The present study will also aware the students about their environment and its procedure.
7. The present study will also helpful in sensitizing students, parents and the teachers towards the dire need of making our environment free form every type of pollution.
8. Policy makers can also be awarded of these issues by this study to make some good policies for the environment.

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