

**A COMPARATIVE STUDY OF ENVIRONMENTAL
AWARENESS AMONG THE HIGHER SECONDARY
STUDENTS OF MURSHIDABAD DISTRICT**

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Abstract

Keywords:

Environment;

Awareness;

Senior Secondary

Students;

Environmental education is a process for imparting the knowledge of a healthy environment which is essential for the present and upcoming generation. The present investigation intended to know the level of environmental awareness of Senior Secondary School students in Murshidabad district of West Bengal based on their gender, location, and streams of study. The researcher used a descriptive research design for the study. Simple random sampling technique was used to select the data of 240 students of the higher secondary school in Murshidabad district in West Bengal. Environmental Awareness Ability Measurement Scale constructed and validated by Praveen Kumar Jha was used for collecting data. The researcher analysed the data by using means and standard deviations and 't' test for testing the null hypotheses of the study. The result showed that environmental awareness of female students was greater than male students, environmental awareness of urban students was greater than rural students and further, environmental awareness of science students was greater than arts students. This study evaluates environmental awareness among the senior secondary students for suggesting some remedies to cop up the existing situation.

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1. Introduction

Environment is, in general terms, a surrounding or condition influencing development and growth of all the living beings. For the last several decades, nature and environment have always been a source of human knowledge and investigation as the environmental pollution has reached to such a critical stage that we find ourselves passing through an irreversible climate change and are not able to retrieve the previous environment back. The most disastrous event of this century is the rapid degradation of the environment throughout the whole world. The people started exhausting the natural resources on one side and on the other creating pollution on the earth affecting the ecological balance in the ecosystem. The population explosion of the late 20th century has worsened the situation. Furthermore, lack of environmental awareness regarding the preservation of the species & culture etc. and conservation of the natural resources are responsible for the degradation of the environmental procurement at the grass root level. If it continues, human civilization will face disastrous consequences. Education for environmental awareness will prepare human society to protect ecological balance. Environmental education aims at developing in them the knowledge, attitude, skills, ethics, and responsibility among the students to protect our nature. Environmental education is nothing but to educate human society to perceive the environment in totality. Further, environmental education should aim at merely not imparting knowledge and understanding about the total environment but it should also aim at including skills, the attitudes, and values necessary to understand, appreciate and improve our biosphere and troposphere further the whole environment. For this reason, the researcher has been conducted a comparative study on Environmental Awareness among the students of the higher secondary school in Murshidabad district of West Bengal.

Many studies have been conducted and many researchers also doing research to know the environmental awareness of the students all over the world. **Khan (2012)** conducted a research on attitude towards environmental awareness in relation to certain variables among senior secondary school students of Aligarh city and found that there was no significant difference between boys and girls on their environmental awareness. The result also showed a significant difference in the environmental awareness of the students of private and government schools. **Astalin (2011)**, conducted a study of environmental awareness among higher secondary students and factors affecting it. The Findings were: Firstly, Science students had more environmental awareness in comparison to arts students. Secondly, CBSE students had more environmental awareness in comparison to UP Board

students because of the rich educational climate of CBSE schools with compare to the UP board schools. Thirdly, Students belonging to undergraduate, postgraduate and research parent's group had more environmental awareness in comparison to high school students and also students belonging to literate parent's group had more environmental awareness in comparison to high school and intermediate students. Fourthly, The male students had more environmental awareness in comparison to female students because of the male students of higher secondary students are normally so much attached with the society so that they are having more environmental awareness. **Selvam and Nazar (2011)** studied environmental awareness and responsibilities among university students and found that the majority of the students have environmental awareness and responsibilities. **Rosaline (2008)**, studied to find out level of environmental awareness among teacher educators and influence of factors i.e., gender, place of living and subject. The researcher found that the majority of the teacher educators had limited awareness and importance of environmental education. Keeping in mind the findings of the present study, it is proposed that the entire education system in general and teacher education in particular needs an immediate reorientation in the curriculum towards environmental education **Lalam (2008)**, studied "Awareness towards environmental concepts among students through co-curricular activities." The findings suggested that Good relations with the community make them aware of important values with regard to environmental aspects are to be maintained. Teacher should conduct as many co-curricular activities like drawings, posters, charts, cartoons, maps, and role plays to give maximum awareness and to develop competitive spirit among students on regional environmental problems. **Shivakumar (2000)**, studied environmental concern among secondary school students and found that gender and locality have an interaction effect on environmental awareness. The types of secondary schools also play an important role in environmental awareness. **Prateek and Sidana (1998)** investigate Senior Secondary students' interest in Environmental Education. The findings showed a significant difference between urban and rural students. **Zeba (1997)** conducted research to find environmental awareness of male undergraduates in AMU. The result confirmed that there was a significant difference in environmental awareness of Arts and Science, Arts and Social Science, Arts and Commerce, Science and Social Science but there was no significant difference in environmental awareness of Science and Commerce.

JUSTIFICATION OF THE STUDY

Education is the most integral asset for changing our conduct towards environment. For the attention to the general public about the earth, it is fundamental to work at the grass root level with the goal that the whole society can work to spare the earth. Students are the fate of our general public yet till date, numerous students are as yet ignorant of the issues and challenges of environmental awareness. Along these lines, it is basic to teach in them the significance of the issues and difficulties of natural mindfulness for a feasible domain. In the wake of evaluating the related writing, the scientist found that however many research has been directed on ecological training yet less work had been done in the territory of issues and difficulties of environmental awareness among the Senior Secondary Students in Murshidabad District. Through this investigation, the investigator will endeavour to investigate the awareness of environment and about ecological attention to spare the earth from further debasement and to make an eco-accommodating condition. That is the reason the investigator has chosen the senior secondary school students understudies to realize how well they understand their environment, ecological mindfulness and obligation towards environment.

SIGNIFICANCE OF THE STUDY

The increasing population, industrialization, and urbanization have fuel to the fire by creating tremendous pressure on natural resources. This has resulted in many environmental crises like pollution, climate change, global warming, acid rain, bio-degradation etc. The environment has become the concern of all; the academicians, intellectuals, scientists, policymakers and government across the continents. Widespread and systematic concern for environmental issues has grown the world over, particularly after the 1960s. The UN World Conference on the Environment in Stockholm in 1972, the Earth Summit held in Rio de Janeiro in 1992, the Global Forum, 1992 and the activities organized by the International N.G.O Forum show that environment is on the agenda of the international community.

This was the fact that inspired the investigator to conduct a study in this field. As a humble beginning, the investigator tried to study the extent of environmental awareness among rural and urban, science and arts students of the higher secondary school in Murshidabad District, West Bengal. Awareness provides the basis for developing a positive attitude

towards the appreciation of different environmental problems and inspire one for actively participating in the programme for conserving nature and preventing further deterioration.

OBJECTIVES OF THE STUDY

1. To find out the difference in environmental awareness between urban and rural male students of the higher secondary school in Murshidabad District, West Bengal.
2. To examine the difference in environmental awareness between urban and rural female students of the higher secondary school in Murshidabad District, West Bengal.
3. To investigate the difference in environmental awareness between male and female students of the higher secondary school in Murshidabad District, West Bengal.
4. To find out the difference of environmental awareness among science and arts students of the higher secondary school in Murshidabad District, West Bengal.
5. To compare the environmental awareness of science and arts male students of the higher secondary school in Murshidabad District, West Bengal.
6. To examine the difference of environmental awareness between science and arts female students of the higher secondary school in Murshidabad District, West Bengal.
7. To investigate the difference of environmental awareness between science male and female students of the higher secondary schools in Murshidabad District, West Bengal.
8. To compare the environmental awareness between arts male and female students of the higher secondary schools in Murshidabad District, West Bengal.

HYPOTHESES OF THE STUDY

H0-1: There is no significant difference in Environmental Awareness between urban and rural male students of the higher secondary school in Murshidabad District, West Bengal.

H0-2: There is no significant difference in Environmental Awareness between urban and rural female students of the higher secondary schools in Murshidabad District, West Bengal.

H0-3: There will be no significant difference in the environmental awareness of boys and girls students of the higher secondary school in Murshidabad District, West Bengal.

H0-4: There will be no significant difference in Environmental Awareness between science and arts students of the higher secondary school in Murshidabad District, West Bengal.

H0-5: There will be no significant difference in Environmental Awareness between science and arts male students of the higher secondary school in Murshidabad District, West Bengal.

H0-6: There will be no significant difference in Environmental Awareness between science and arts female students of the higher secondary school in Murshidabad District, West Bengal.

H0-7: There will be no significant difference in Environmental Awareness between science male and science female students of the higher secondary school in Murshidabad District, West Bengal.

H0-8: There will be no significant difference in Environmental Awareness between arts male and arts female students of the higher secondary school in Murshidabad District, West Bengal.

METHODOLOGY AND DESIGN OF THE STUDY

Sample

The present study comprised a total sample of 240 [urban=120 (science & arts male=60 & science & arts female=60) & rural=120 (science & arts male=60 & science, arts female=60)] students of higher secondary level collected from the higher secondary schools in Murshidabad District, West Bengal.

The Research Tool

In order to carry out the study, the researcher used Environmental Awareness Ability Measure (EAAM) Scale (2009) developed by Praveen Kumar Jha, to measure the extent and degree of awareness of students about environmental problem and its protection which consist of 51 items .

Statistical Techniques

The data were analyzed by the researcher using the following statistical techniques i.e. Mean, S.D. and t-test.

ANALYSIS AND INTERPRETATION

Table-1. ‘t’ test showing the comparison of environmental awareness between Urban and rural Male students of the higher secondary schools.

Sources of variation	Number of students	df	Mean (M)	S.D.	‘t’ value	Tabulated ‘t’ value
Urban male	60	118	102.47	7.83	2.77	1.99
Rural male	60		98.05	9.54		

*Significance at 0.05 level.

INTERPRETATION: The above table reveals that the calculated 't' value is more than the tabulated 't' value at 0.05 significant level and at 118 df, hence the null hypothesis was rejected. Thus, there exists a significant difference between urban and rural students. The result in the table shows that the urban students (M=102.47) possess higher environmental awareness than rural students (M=98.05). The S.D. of urban students is 7.83 and the S.D. of rural students is 9.54. The results are also clear from the following diagram:

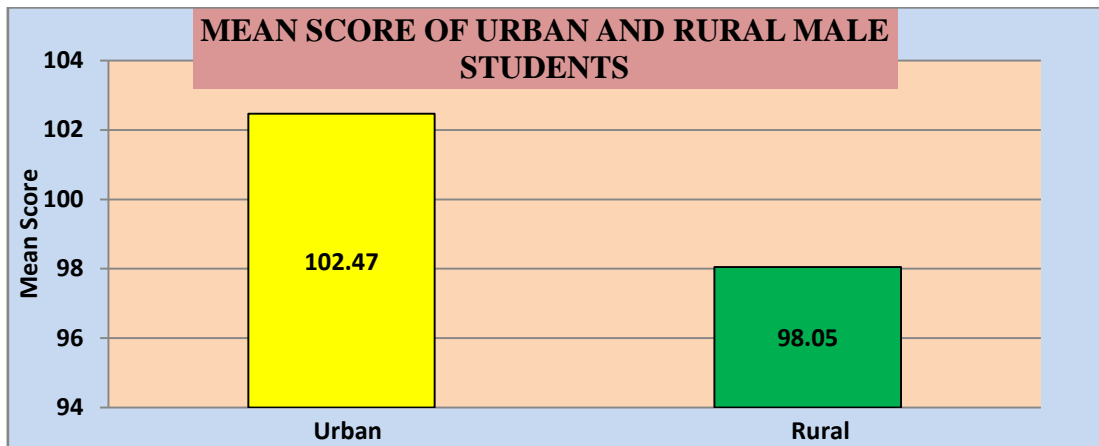


Fig. 1. Graph showing the comparison of Environmental Awareness between urban and rural male students of higher secondary schools.

Table- 2. 't' test showing the comparison of environmental awareness between urban and rural girls students of the higher secondary schools.

Sources of variation	Number of students	df	Mean (M)	S.D.	't' value	Tabulated 't' value
Urban Girls	60	118	99.30	6.62	6.85	1.99
Rural Girls	60		89.75	8.52		

*Significance at 0.05 level.

INTERPRETATION: The above table reveals that the calculated 't' value is more than the tabulated 't' value at 0.05 significant level and at 118 degrees of freedom. Hence the null hypothesis was rejected. Thus there exists a significant difference between the girls student of the urban and rural area. The result in the table shows that the urban girls (M=99.30) possess higher environmental awareness than rural girls (M=89.75). The S.D. of students of urban girl students is 6.62 and the S.D. of rural girl students is 8.52. The results are also clear from the following diagram:

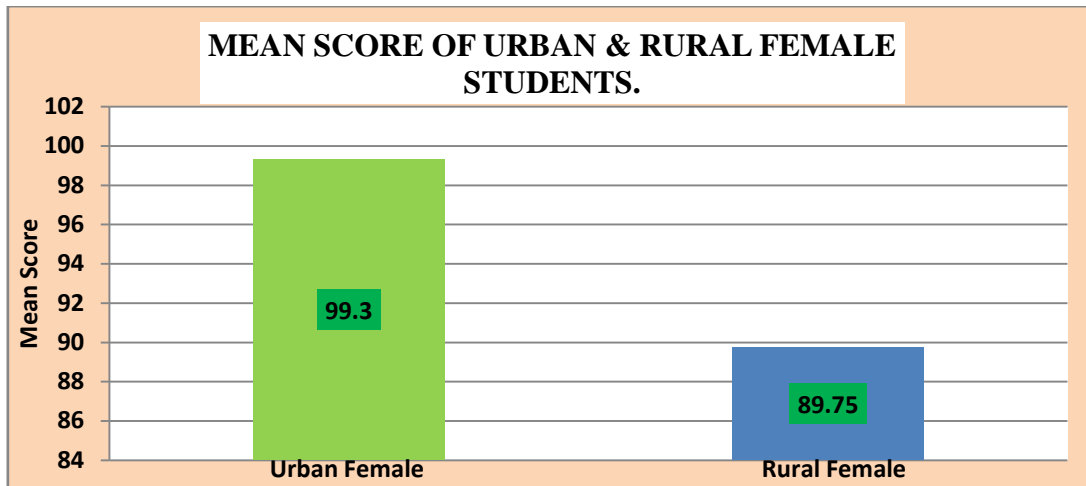


Fig. 2. Graph showing the comparison of Environmental Awareness between urban and rural female students of higher secondary schools

Table-3. 't' test showing the comparison of environmental awareness between male and female students of the higher secondary schools.

Sources of variation	Number of Students	df	Mean (M)	S.D.	't' value	Tabulated 't' value
Male students	120	238	100.25	8.90	4.94	1.98
Female students	120		94.52	9.00		

*Significance at 0.05 level.

INTERPRETATION: The above table reveals that the calculated 't' value is more than the tabulated 't' value at 0.05 significant level and at 198 degrees of freedom. Hence the null hypothesis was rejected. Thus there exists a significant difference between male and female students. The result in the table shows that the male students (M=100.25) possess higher environmental awareness than those of female students (M=94.52). The S.D. of students of male students is 8.90 and the S.D. of female students is 9.00. The results are also clear from the following diagram:

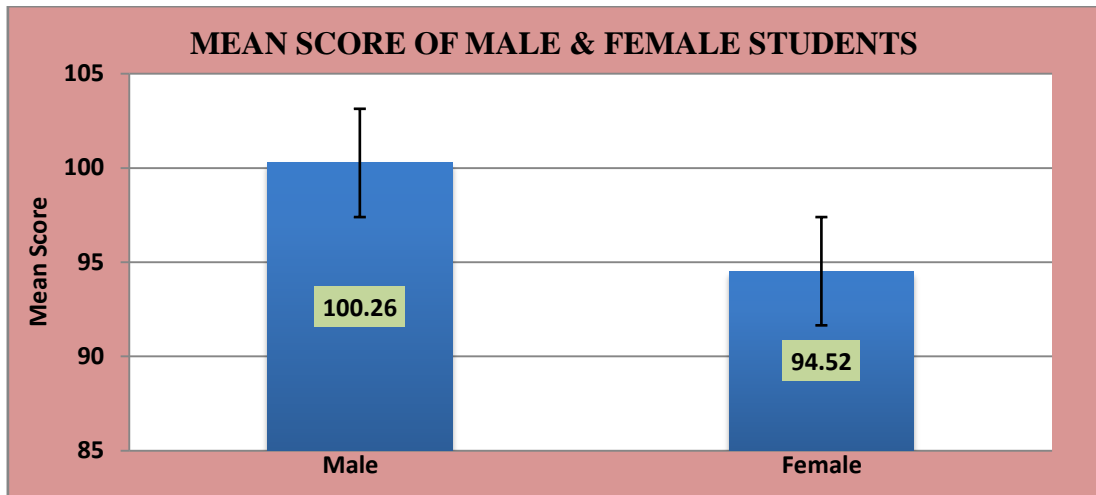


Fig.3.Graph showing the comparison of Environmental Awareness between male and female students of higher secondary schools.

Table-4. 't' test showing the comparison of environmental awareness between the Science and Arts students of the higher secondary schools.

Sources of variation	Number of Students	df	Mean	S.D.	't' value	Tabulated 't' value
Science students	120	238	103.08	6.76	11.54	1.98
Arts students	120		91.79	8.31		

*Significant at 0.05 level.

INTERPRETATION:-The 't' value in the Table- reveals that the students of Science and Arts streams differed significantly in their environmental awareness. As the Table indicated that the mean of the students of Science is 103.08 and the mean of Arts students is 91.79. The S. D. of students of the Science stream is 6.76 and the S.D. of Arts students is 8.31. The 't' value 11.54 was found to be significant at 0.05 level of confidence. It shows that there is a true difference in environmental awareness between the students of Science and Arts students of the higher secondary schools. The difference in environmental awareness between Science and Arts students may be because of their course stream. The results are also clear from the following diagram:

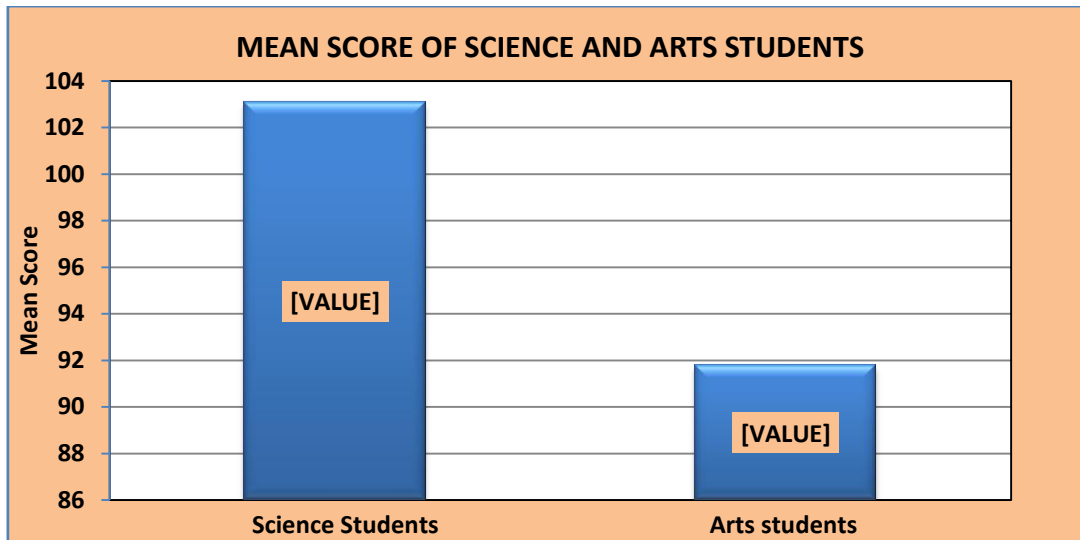


Fig. 4. Graph showing the comparison of Environmental Awareness between Science and Arts students of higher secondary schools.

Table- 5. 't' test showing the comparison of environmental awareness between the science and arts male students of the higher secondary schools.

Sources of variation	Number of Students	df	Mean	S.D.	't' value	Tabulated 't' value
Science male students	60	118	106.93	2.71	11.75	1.98
Arts male students	60		93.75	8.25		

*Significant at 0.05 level.

INTERPRETATION: The 't' value in the table shows that there is a significant difference in Environmental Awareness between Science and Arts Male students at the higher secondary level. As the table shows that the mean score of Science and Arts Male students are 106.93 and 93.75 respectively. The S.D. of Science stream Male students is 2.71 and Arts stream Male students is 8.25 at the higher secondary level. The 't' value, 11.754 was found significant at 0.05 level of confidence which is higher than the tabulated 't' value (1.98). Thus, it shows that there is a true difference of Environmental Awareness between the Science and Arts male students of the higher secondary school students in Murshidabad District. The greater mean value of science male shows that they are more concerned about environmental issues than the arts male students. The reason may be the influence of their subject's contents which always tries to lay much more emphasis on environmental issues

like pollution, causes of pollution, source, and use of energy, conservation of resources, biodiversity, remedial measures etc. The results are also clear from the following diagram:

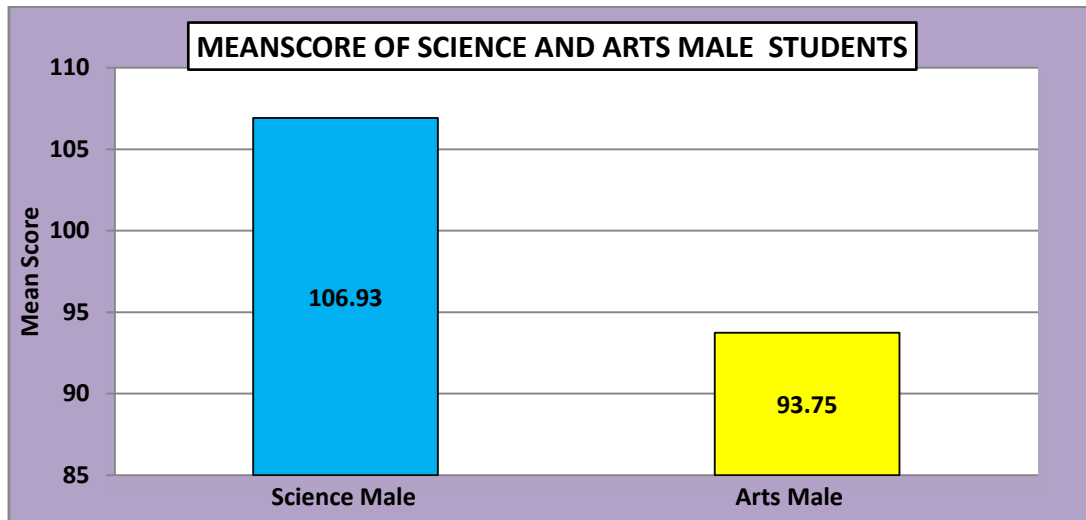


Fig. 5. Graph showing the comparison of Environmental Awareness between Science and Arts male students of higher secondary schools.

Table- 6. 't' test showing the comparison of environmental awareness between science and arts female students of the higher secondary schools.

Sources of variation	Number of Students	df	Mean	S.D.	't' value	Tabulated 't' value
Science female students	60	118	99.23	7.39	6.704	1.98
Arts female students	60		89.83	7.95		

*Significance at 0.05 level.

INTERPRETATION: The 't; value in the table shows that there is a significant difference in Environmental Awareness between science and arts female students of the higher secondary schools. The result shows that the mean value of Science Female is 99.23 is higher than the mean value of Arts female students 89.83. The S. D. of Science Female is 7.395 while the S. D. of Arts female students is 7.953. The 't' value is found 't'= 6.704 which means that there is a significant difference of Environmental Awareness between science and arts female students of the higher secondary schools. Therefore, the hypothesis H.0-6 is rejected. The greater mean value of science female students shows that they are more aware of the environmental matter than the arts female students. The reason may be the influence of their subject's contents which always tries to lay much more emphasis on

environmental aspects like pollution, causes of pollution, conservation of resources etc. The results are also clear from the following diagram:

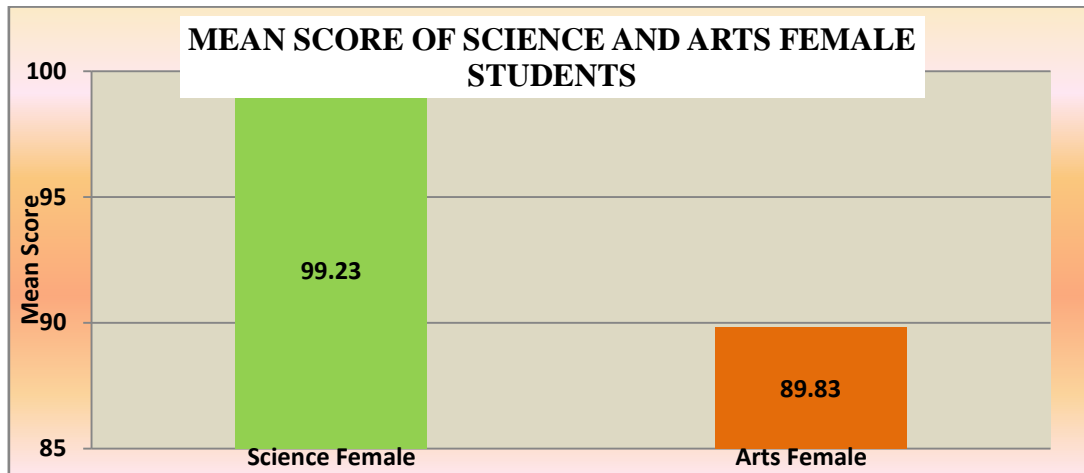


Fig. 6. Graph showing the comparison of Environmental Awareness between science and arts female students of higher secondary schools.

Table- 7. 't' test showing the comparison of environmental awareness between science male and science female students of the higher secondary schools.

Sources of variation	Number of Students	df	Mean	S.D.	't' value	Tabulated 't' value
Science male students	60	118	106.93	2.717	7.570	1.98
Science female students	60		99.23	7.395		

*Significance at 0.05 level.

INTERPRETATION: The 't' value in the table reveals a significant difference in environmental awareness between Science Male and female students of the higher secondary schools. Hence the null hypothesis H₀-7 was rejected. The results presented in the table shows that the male students (M=106.93) of the science stream are more concerned about environmental issues as compared to the female (M=99.23) of the same stream. The 't' value 7.570 is very much significant at 0.05 level of significance. Hence the difference of environmental awareness between Science Male and Female students of the higher secondary schools are not due to chance. The investigator did not find any valid reason for such variation.

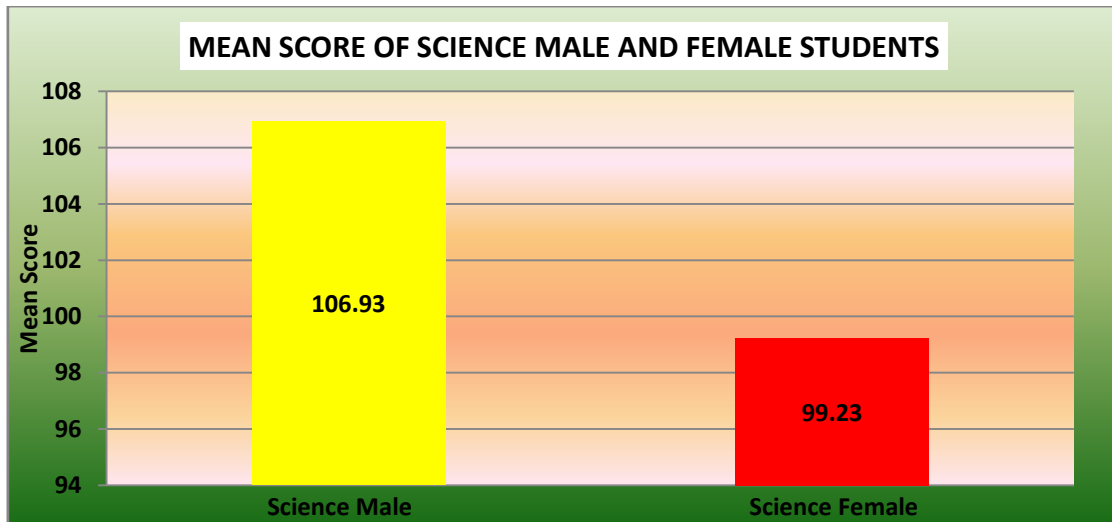


Fig. 7. Graph showing the comparison of Environmental Awareness between Science Male and Female students of higher secondary schools.

Table-8. 't' test showing the comparison of environmental awareness between Arts Male and Female students of the higher secondary schools.

Sources of variation	Number of Students	df	Mean	S.D.	't' value	Tabulated 't' value
Arts male students	60	118	93.75	8.251	2.647	1.98
Arts female students	60		89.83	7.953		

*Significance at 0.05 level.

INTERPRETATION: The 't' value in the table reveals a significant difference in environmental awareness between Arts Male and Arts female students of the higher secondary schools. Hence the null hypothesis H₀₋₈ was rejected. The results presented in the table shows that the male (M=93.75) of the Arts stream are more concerned about environmental issues as compared to the female (M=89.83) of the same stream. The 't' value 2.647 is very much significant at 0.05 level of confidence. Hence the difference of environmental awareness between Arts Male and Female students of the higher secondary schools are not due to the chance. The investigator did not find any valid reason for such variation. The results are also clear from the following diagram:

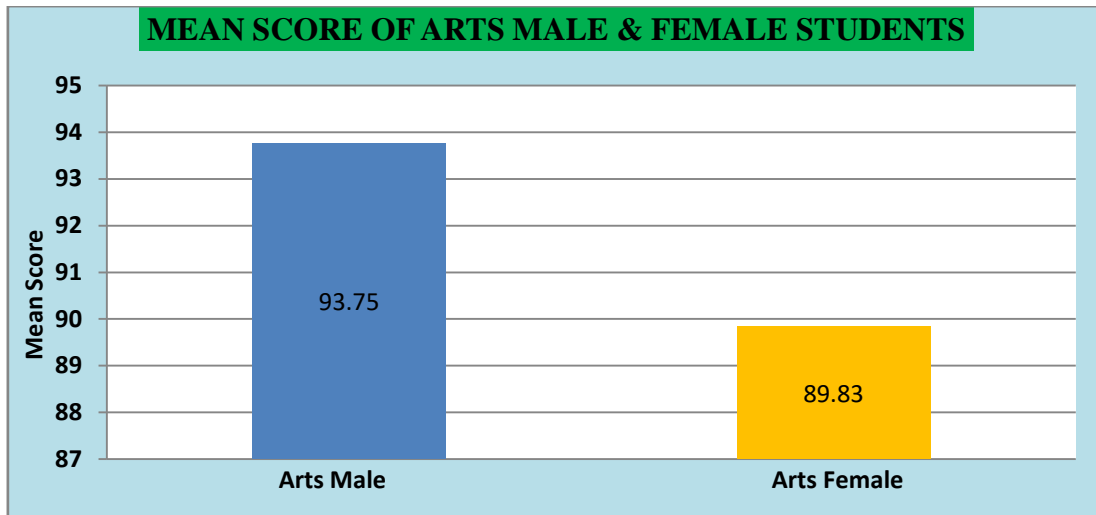


Fig.8. Graph showing the comparison of Environmental Awareness between Arts Male and Female students of higher secondary schools.

FINDINGS AND DISCUSSION OF THE STUDY

The major findings related to the objectives of the present study are given as follows:

1. It was found that students of urban areas possess more awareness about environmental than the students of rural areas. It has been found that urban areas are more expensive than in rural areas. Their living style is more practical in urban areas and they are facing various issues and challenges of environment and they become concern about these issues and challenges. In another word we may say that the living environment of urban areas is supposed to be more polluted than the rural areas. Therefore this could be the reason why urban area's students are more concerned about environmental awareness.
2. It was found that male students are more aware of environmental issues and problems than female students. The above conclusion reveals that there is an impact of gender difference over environmental concern. It shows that male and female are not equally concerned about their surroundings. However, the male students are more concerned about the problems of the environment as the comparison to the female students of the higher secondary school in Murshidabad District, West Bengal.
3. It was found that Science students possess more awareness about environmental issues than the Arts students at the higher secondary school in Murshidabad District, West Bengal. The students of Arts stream are less aware of the environmental issues and problems because of their lack of scientific attitude. The science students have a more scientific attitude, the power of thinking and reasoning regarding the environmental issues which may be the influence of their course contents. The methodology for teaching them is

more practical. Also, the science stream has environmental education as a separate subject in their curriculum while no such incorporation is done for arts stream. Therefore this could be the reason why science stream students are more concerned about their environment.

4. On comparing environmental awareness between urban male and urban female on the total sample, it was found that the urban male has more environmental awareness than urban female students.

5. On comparing environmental awareness between rural male and rural female on the total sample, it was found that the rural male has more environmental awareness than rural female students.

7. On comparing the environmental awareness of male students of Science and Arts streams on the total sample, it was found that the science male students have a more advanced level of awareness and concern about environmental issues than the arts male students. While analyzing the intra-stream significance of the difference of environmental awareness between the Arts Male and Female students at the higher secondary school in Murshidabad District, West Bengal, it was found that gender plays an important role. The result shows that the male students are more aware of environmental issues and problems than the female students of Arts stream. The researcher did not find any valid reason for such kind of difference in environmental awareness between male and female students of Arts stream. So it can be said that gender plays a very significant role in bringing out the difference in environmental awareness between the above-said students.

8. Based on gender, comparing intra-stream environmental awareness between science Male and female higher secondary students on the total sample, it was found that male students are more aware than the female students though they have same subjects.

CONCLUSION

The present investigation was an attempt to see the difference of gender and locality on environmental awareness of students of higher secondary schools in Murshidabad District, West Bengal. It is proved from the result that all the students have a positive attitude towards environmental awareness but the urban students' exhibit somewhat higher degree of environmental awareness than the rural students and the science stream students' exhibit somewhat higher degree of environmental awareness than the arts stream students. Another interesting result is that male students and female students are deferred in their awareness about the environment, male students have much more concerned than female students.

Both male and female students are concerned about their environment but the male students have much more knowledge and understanding of environmental issues, problems and probable measures for the preservation and conservation of the environment. Therefore science subjects have a positive effect on environmental awareness of the students. The in-depth investigation has led to the conclusion that it is the study of environmental education as a separate subject which develops environmental awareness in schools. As the students of science stream are studying environmental education as a separate subject, therefore they are more concerned about their environment in comparison to arts students who are studying environmental education as an integrated subject.

EDUCATIONAL IMPLICATIONS

No doubt education is a strong means of modification of behaviour. It imparts knowledge, changes personality and improves quality of life of an individual. Education connects the entire world as it may solve the problems faced by human beings globally, as today's environment degrading gradually all over the world. It enhances the concern of people towards their environment, their immediate surroundings as well as towards the entire environment.

- The government, policymakers and the educationist all have come to one platform to propagate environmental education in order to increase awareness of people towards the environment.
- The media has to play an important role in developing awareness among the students as it influences the life of the student greatly outside the school.
- Educate the pupils, staff, officials, and entities in waste avoidance, reduce CO₂ emissions, diversion of waste streams and the correct disposition of waste.
- Promote pollution awareness initiatives and voluntary accreditation schemes in the schools and in the society for individuals /clubs and Support public participation in awareness-raising programmes & initiatives.
- Educate the students to and promote the use of renewable energy sources.
- Promote the concept of sustainable development among the students through the educational programmes and support the Green Hospitality Programme for Hostels & Catering sectors.
- Promote waste prevention and minimise the production of harmful waste and encourage and support the recovery & reuse of waste.

- Work in partnerships with organisations and address the polluters pay principle in relation to waste disposal.

References

1. Ghanta, R. and Rao, D. B. (1998). *Environmental Education: Problems and Prospects*. New Delhi:Discovery publishing house, 2.
2. Sohn, L. B. (1973). *The Stockholm Declaration on the Human Environment*. The Harvard International law journal, Vol. 14(3).
3. Selvam, V. & Abdul, N. N. (2011). *An Analysis of Environmental Awareness and Responsibilities among University Students*, International Journal of Current Research, 3(11), 202-205.
4. Saudabeh, A., (1987). *The relationship among male and female six grade students of their attitude and their outdoor environmental education experience*, Dissertation Abstracts International, Vol 47
5. Shahnawaz, (1990). *Environmental Awareness and Environmental Attitude of Secondary and Higher Secondary School Students*, Ph.D. Education, University of Rajasthan, Buch fifth survey, Vol. 2.
6. Shivakumar, G. S., (2012). *Environmental Concern among the Secondary School Students*, Golden Research Thought, 1 (10), 1-4.
7. Prateek, M. & Sidana, A.K., (1998). *Environmental awareness among the secondary school students*, University of Rajasthan, The educational review, Vol, CIV (11)
8. Singh, R. K., (1996). *A comparative study of environmental awareness in school children of Aligarh*. M.Ed. Dissertation, Department of Education, A.M.U., Aligarh.