

Climate Change and Sustainable Development



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Awareness on Eco-Friendly Practices among Higher Secondary Students in Tirunelveli District

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Introduction

"Be the change you want to see in the world"

- Mohandas Gandhi

The man's environment consists of natural and social-cultural environment. The environmental issues which challenge our survival are rising day by day in the current scenario. Global warming, climate change, ozone depletion and environmental pollution are some among them. (Meera, and Deepthi, 2015). The effects of pollution are numerous. However, some of the important ones are pollution can bring about complex changes in the eco-system: endanger aquatic life, cause dormant germs to get activated and spread unknown diseases endangering all living organisms, erode matter thereby shortening their lifespan, and speed up natural decay through synergism (Dasmohapatra, G. 2009). Environmental degradation occurs through both natural processes and anthropogenic activities, the main culprits are human beings because they have overexploited the limited natural resources. Environmental degradation and pollution in turn have caused a catastrophe affecting all living organisms in the biosphere. (Catherine, 2011). Thus, there is an urgent need to protect the natural resources for our present as well as future generation. Natural resources have been utilized to meet the demand of better living, that it has caused serious ecological and environmental imbalances (Gopal Dutt, N.H, 2014). Eco-friendly education puts the knowledge that is able to change beliefs, behaviors, and

especially, the attitude of learners (Frantz and Mayer 2014). The sense of attachment to the natural and social environment is an important factor that affected their responsible attitude towards the environment (Ochieng, M.A and Koske, J, 2013). Environmental degradation is in large part due to motorized vehicles that emit large volumes of unhealthy emission such as CO₂ (Frantz, C. M., & Mayer, F. S. 2014). Generation of waste can be minimized and the waste generated can be converted into wealth with the help of 4R (Refuse, Reuse, Recycle, Reduce) principle of waste management. The students should be inculcated the effectiveness and optimal use of our natural resources and energy to safeguard our mother nature and also to revisit the traditional practices in conserving our resources in order to attain sustainability in all levels and healthy feature (Anbalagan and Shanthi, 2015). Providing Environmental education and eco-friendly awareness to the future generation can ensure conserving, preserving and sustaining the environment.

Significance of the Study

The ecosystem has always been subjected to continuous onslaught by natural calamities like volcanic eruption, earthquake cyclones and floods. (Gopal Dutt, N.H.2014). The over jealousman-made activity exploiting nature, is the chief culprit of the deterioration of the quality of the ecosystem (Bhat, S.C., Krishna, K., & Kumar, M. 2014) These issues have grown to a much greater extent and in contrast with this, the concept of eco-friendly or going eco-friendly has progressed. This is one of the major concerns that our world is facing nowadays. It can be related to cutting down of trees, limiting supplies, exploitation of natural resources etc. (Dasmohapatra, G, 2009). Even the water today in most of the localities is not fit for drinking as most of the industries omit toxic material and waste material into pure water. They not only damage the purity of the water, but also kill the marine life. One of the other factors is developed. We believe that development comes from construction, ideas, innovation and strategies; but how about

turning all our goals and aligning it with the environment (Chand, J, 2007). In order to promote the factor of sustainability and to conserve Mother Nature, it is important for us to deviate from our conventional ways of greed and exploitation and look for a better and brighter future (GopalDutt, N.H.2014). If we as individuals take the initiative of Going Green for a change, there will be better drive for development in the areas which are related to green energies. So the present study focuses on the Awareness on Eco-friendly practices among higher secondary students in Tirunelveli district.

Objectives of the Study

- To find out the level of awareness on eco-friendly practices among higher secondary students.
- To find whether there is any significant difference between higher secondary students in their awareness on eco-friendly practices with reference to the following background variables (i) Gender (ii) Locality of School (iii) Medium of Instruction (iv) Social media usage

Hypotheses of the Study

- Awareness on eco-friendly practices among higher secondary students is moderate.
- There is no significant difference between higher secondary students in their awareness on eco-friendly practices with reference to the following background variables.
(i) Gender (ii) Locality of School (iii) Medium of Instruction (iv) Social media usage

Population

The population includes higher secondary students of Tirunelveli.

Sample

The investigators used simple random sampling technique and randomly selected 500 higher secondary students in Tirunelveli District.

Statistical Techniques used in the Present Study

Eco-friendly Practices Awareness Scale was developed by Maria Saroja, M and Michael Jeya Priya, E (2020) Mean, Standard deviation and 't' were the statistical techniques used for carrying out the analysis and interpretation of the data collected.

Data Analysis and Interpretation

Table.1. Showing the level of eco-friendly practices among higher secondary students in Tirunelveli District

Total	Low		Average		High	
	N	%	N	%	N	%
	98	19.60	285	57.00	117	23.40

■ Low ■ Average ■ High

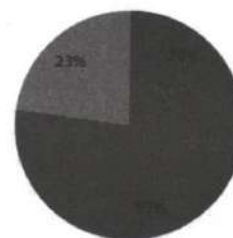


Figure.1. Showing the level of eco-friendly practices among higher secondary students in Tirunelveli District

Interpretation of table-1

It is revealed from the above table that among the higher secondary students 19.60% have low, 57.00% have average and 23.40% have a high level of eco-friendly practices among Higher Secondary Students

Table-2: Distribution of Number, Mean, Standard Deviation, 't' Ratio and significance level of eco-friendly practice awareness between male and female higher secondary students in Tirunelveli District

Variable	Categories	N	Mean	SD	Calculated 't' Value	Table Value	Remark
Gender	Female	258	31.86	4.56	2.58	1.96	S
	Male	242	30.69	4.63			

Interpretation of Table-2

There is a significant difference between the male and female higher secondary students in their awareness on eco-friendly practices. In the present study the mean of eco-friendly practices awareness scale value of female students (31.86) is greater than that of male students (30.69). This may be due to the facts that female students are aware of eco-friendly practices compared to male students. Their green purchasing behavior is high. Female students were significantly more likely to be concerned with environmental problems than male. Female students are made to carry out most cleaning activities at homes. They also follow environmentally friendly practices while traveling they prefer environmentally friendly foods compare to others. They have more concrete knowledge about eco-friendly practices, and they apply their knowledge at practical level more often than the male students. Female students usually have more extensive environmental knowledge than male and show more concern about environmental destruction. They are aware of water, sanitation & water harvesting, air pollution and climate change, conservation of energy & recycling of wastes, environment and health, plastics and its effects, global warming & ozone depletion, vermicomposting & solid waste management, deforestation and urbanization, disaster management, environmental education for sustainability, NGC/Eco-clubs & awareness through action & Eco friendly activities in school and home. This result supported by study conducted by Anbalagan and Shanthi (2015). In their research

they showed that the mean score of Female students (1.68) is greater than the mean score of male students (1.45).

Table-3: Distribution of Number, Mean, Standard Deviation, „t ” Ratio and significance level of eco-friendly practices awareness between rural and urban higher secondary students in Tirunelveli District.

Variable	Categories	N	Mean	SD	Calculated 't' Value	Table Value	Remark
Locality	Rural	242	27.22	4.17	2.85	1.96	S
	Urban	258	26.45	4.43			

Interpretation of table-3

There is significant difference between the rural and urban higher secondary students in their awareness on eco-friendly practices. In the present study the mean of eco-friendly practices awareness scale value of rural students (27.22) is greater than that of urban students (26.45). This may due to the fact that rural student's family pattern and mode of behavior towards environment is different from urban students. The presence of grandparents has an impact on the environment they advise the children to undertake eco-friendly practices. Their joint family system makes them to understand more about the importance of nature in their life. Their cultural practices and festival celebration has an impact on their children eco-friendly practice. Their school and family setup give them hands on experience in various nature preserving activities but also help them to be a green ambassadors. Their leisure time activity which broke the mould of classroom environment teaching and boosted their pro-environment behaviour. Their action oriented activities help to change the environment from arid to green. This result support by the study conducted by Bhavya, N(2016). In her study she proved that the rural students have high level of attitude towards environmental friendly compared to urban students.

Table-4: Distribution of Number, Mean, Standard Deviation, 't' Ratio and significance level of eco-friendly practices awareness between English and Tamil medium higher secondary students in Tirunelveli District.

Variable	Categories	N	Mean	SD	Calculated 't' Value	Table Value	Remark
Medium of Instruction	English	207	25.43	3.98	0.79	1.96	NS
	Tamil	293	25.17	3.04			

From the above table it shows that there is no significant difference between the English medium and Tamil medium higher secondary students in their awareness on eco-friendly practices

Table-5: Distribution of Number, Mean, Standard Deviation, 't' Ratio and significance level of social media users and nonusers in their awareness on eco-friendly practices

Variable	Categories	N	Mean	SD	Calculated 't' Value	Table Value	Remark
Social media usage	Yes	297	25.04	3.75	1.52	1.96	NS
	No	203	25.50	3.06			

From the above table that shows that there is no significant difference between social media users and nonusers in their awareness on eco-friendly practices

Conclusion

The earth is our mother planet which gives us all the essential things we need for living a life. So, we are also responsible to maintain its natural quality and greenery environment. We should not pollute and waste its natural resources for our small benefits. As environmental problems are becoming more and more complex and the need to take action becomes more urgent, school students need to be equipped with suitable skills that can help them to make better decisions and choices. The present condition of the earth has been very challenging for the healthy existence of life

because of the toxic environment, water pollution, air pollution, global warming, deforestation, and many more environmental issues. Continuous use of the natural resources will lead to depletion of it and cause tremendous effect on the nature. In order to overcome the negative effects caused by them. School should provide proper environmental education. They should encourage children's to participate in various clubs such as eco-club or green finger clubs to encourage their environmental protection and conservation. School students should be trained to use common sense ideas like turning off the lights, rain barrels, and taking shorter showers in order to reduce the over usage of natural and man-made resource. To save our green earth, we should re-think, and obey environmental footprint. The priority goes mainly for creating awareness among the students through mass media, competitions, campaign, voluntary work etc., Environmental education is the need of the hour in this modern world. People should make the habit of reduction in the usage of harmful things, re-usage and recycle things in order to generate less amount of wastes.

Save the earth and save the environment

References

- Anbalagan, G. & Shanthi, K.(2015). Study on environmental awareness and related practices among the high school students at Madurai district, Tamil Nadu. *Indian Streams Research Journal*, 5(9), 1-10.
- Bhat, S.C., Krishna, K., & Kumar, M.(2014). Pollution awareness among the upper primary students of West Bengal. *IOSR Journal of Humanities and Social Science*, 19(12), 1-7.
- Bhavya, N. (2016). An exploratory study in educating rural high school children towards maintaining an eco friendly environment. Retrieved from <http://hdl.handle.net/10603/203309>
- Catherine, J. (2011). *Environmental education*. Neelkamal Publications.

- Chand, J. (2007). *Environmental education*. Anshah Publishing House.
- Dasmohapatra, G. (2009). *Environment and ecology*. Vikas Publishing House private limited.
- Eltayeb, T.K., Zailani, S., & Jayaraman, K. (2010). The examination on the drivers for green purchasing adoption among EMS 14001 certified companies in Malaysia. *Journal of Manufacturing Technology Management*, 21, 206–225.
- Frantz, C. M., & Mayer, F. S. (2014). The importance of connection to nature in assessing environmental education programs. *Evaluating Environmental Education*, 41, 85–89. <https://doi.org/10.1016/j.stueduc.2013.10.001>