

**A STUDY OF ENVIRONMENT AWARENESS AMONG SECONDARY SCHOOL TEACHERS IN CHITTOOR
DISTRICT AND SOME FACTORS AFFECTING IT**

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ABSTRACT

The purpose of this study was to investigate the environmental education awareness among Secondary Grade school teachers in Chittoor district relation to the Management, Subject of Teaching and Experience. Four hundred and eighty teachers took part in the study. Teachers were chosen using stratified random sampling technique. A 3-point scale questionnaire was used to collect data. Means, standard deviations, t-test, were used to analyze the results. The t- test showed no significant differences in teachers' bases of Management and Subject of Teaching. Similarly, the f- test showed no significant differences in teachers' Job Experience of below 5 years, 6-10 years, 11-15 years, 16-20 years and above 20 years with regard to the environmental awareness among secondary grade school teachers in areas of General, Sound and Thermal pollution components but showed significant differences in the areas of Air, Water and Industrial Pollution awareness

Keywords

Environmental awareness, Secondary Grade School teachers, Management, Subject of Teaching, Experience

Introduction

The very existence, survival and progress of humanity depends upon the quality of the environment. Today, the delicate environment is facing a danger of destruction on a scale as never before in the history of mankind. Advancement in the field of science and technology created a competitive world, making man become one of the selfish masters as a result of his wisdom. Maloney and Ward (1973) point out that the environmental crisis is the result of mal-adaptive behavior of man, which is the root of environmental problems. But when environmental catastrophes struck the mankind in the form of huge destruction and challenges like global warming, ozone depletion, degradation of terrestrial and aquatic ecosystems and the biodiversity sustained by it, man was forced to become conscious about the importance and magnitude of such of environmental problems (Gupta et.al., 2004). Now though "environment" has become a catchword representing the worries of not only present generation but also the future generations yet very few actually know the same in real perspective.

In the present scenario environment has been conceptualized through every possible way because people have now become over-conscious about the complex man and environmental relationships. It is now mandatory and of paramount importance to create environmental awareness among common masses especially from the early stage of school days (Watts, 2001). Indeed educational institutions are the biggest organized sector for imparting such type of education regarding the importance of conserving environment. Through schools we can transform the environmental education which in itself is the process that fosters greater understanding among common people about the environmental problems and off course their solutions and also to develop the specific skills and insights, important to understand the structure, requirements and impact of interaction within environmental entities, systems and sub systems.

At the senior secondary level, students have to be moved to real life settings where environmental problems are a reality and accordingly an action through extension work has to be taken. Students at this level are highly receptive and dynamic thus, can be strongly motivated to understand the implications of environmental destruction and take preventive actions. It is evident from various studies that attitudes are formed at this stage of life that tends to endure (Roberts & Lang, 1985; Schuman & Scott, 1989; Steeh & Schuman, 1992). Efforts to introduce environmental education as a subject in the school curriculum have been made but still the subject faces certain limitations with regard to its proper implementation. There is a significant discrepancy between people's attitudes and their actual behavior. The loophole surely lies in the lack of an appropriate environmental interest and attitude of the teacher towards this subject. The teacher should be aware of the environmental education aspects, only then s/he can convince the society about the urgency of environmental education and make the future generations aware of the environmental problems and their solutions. Not only s/he should develop a positive attitude but also should actually practice environmental protection behavior. This will truly help in developing similar attitudes and actions in the children also. It has been found that the teachers are not wholeheartedly ready to go beyond regular class schedules due to some constraints or so and even it becomes difficult for them to adjust the specific environmental activities in the regular course schedule (Sonowal, 2009). Taking into consideration this situation, the investigator felt a need to conduct a study to examine the environmental awareness level among secondary grade school teachers in the different educational zones of district Chittoor. Since no such study has been undertaken till date we took initiative to look into the problem and know the approach of teachers to the environmental education in Chittoor district

Literature Review

Patel and Patel (1994) examined the environmental awareness of 120 primary school teachers of standards I to IV and found that male teachers with long school experience, in urban areas, are more aware about the environmental education.

Patel and Patel (1995) in a study of 100 secondary school teachers found no significant difference in environmental awareness of teachers with high and low experiences.

Patel (1999) concluded from his study on primary teachers in Dang district of Gujarat that the level of environmental awareness of these teachers was high. Further, he also found that male teachers, experienced teachers (more than 35 years) and graduate teachers had higher environmental awareness than their counterparts (female, less experienced and Primary Teachers Training).

Owens (2000) assessed nominal environmental literacy in urban and middle school teachers. Significant differences were found among teachers according to subject areas taught and years of teaching experience..

Pradhan (2002) analyzed the environmental awareness among secondary school teachers and found that teachers working in secondary schools had low awareness about environmental problems. There was a significant difference in environmental awareness between social science, language and science teachers.

Maryam Larijani(2010) studied the environmental awareness of higher primary school teachers of Mysore City in India. A total of 300 teachers (136 male and 164 female) teaching in 6th and 7th standards were randomly selected for the present study. The environmental awareness test was employed to assess the level of environmental awareness (EAW) among teachers. Chi-square test and contingency table analysis were employed to find out the significance of difference between the teachers with respect to their gender, age and school type. Results revealed that on the whole, majority of the teachers had moderate levels of environmental awareness. Female teachers had significantly higher levels of environmental awareness as compared to their male counterparts. Age-wise also revealed that teachers with 31-50 years had higher levels of environmental awareness and lastly, teachers working in private schools found to have significantly higher environmental awareness than teachers working in government schools. Implications of environmental education were also stressed.

Nitasha (2013) conducted a comparative study of Environmental awareness and values among male and female secondary school teachers trainees of rural and urban areas of Himachal Pradesh. The study was conducted on 100 male and female teachers teaching in govt and private schools of Kangra District. It was observed there is no difference between values of school teachers teaching in govt. and private school on six values areas.

Vipinder Nagra and Sandeep Singh (2013) identifies No significant differences were observed in environmental education awareness in relation to subject streams

Research Methodology

Sample Design

The study was conducted on a random sample of 480 secondary school teachers selected randomly from the detailed list of all the government and private secondary schools of the Chittoor district

Table 1:Variable wise Sample Distribution of Teachers

Variable	Category	Number	Total
Management	Government	143	480
	Private	52	
	Local Bodies	285	
Subject of Teaching	Telugu	78	480
	English	57	
	Hindi	52	
	Maths	99	
	Science	104	
	Social	90	
Experience	0-5 years	100	480
	6-10 years	84	
	11-15 years	185	
	16-20 years	48	
	Above 20 years	63	

Source:Author's computations

Table 1 shows the Out of 480(100%), the 29.8% of subjects are in Government Sectors,10.80% are in private sectors and remaining 59.40% are working under local bodies.If the subject of teaching taken into consideration among 480 members,16.30% are teaching Telugu,11.90%of people are teaching English,10.80%,20.60%,21.70% and 18.80% are teaching Hindi,Maths,Science and Scioial studies respectively.The job experience take into consideration among the 480 members 20.80 % subjects are having below 5 years of experience and 17.50 % are having 6-10 years of experience. 38.50% are having 11-15 years of experience and 10 percent having below 20 years of experience and only 13 percent are having above 20 years of experience .

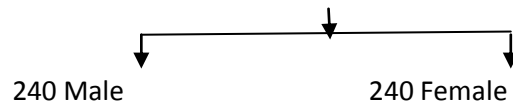
Sample Selection

A sample may be constituted any number of persons, units or objects selected to represent the population according to a fixed rule or plan. In the present study, it is aimed to study environmental awareness on various types of components-General, Air, Water, Industrial, Sound and Thermal

The researcher confined the study only to Chittoor district of Andhra Pradesh consists of 24 mandals. All the teachers working in secondary school level including Permanent Government and Private schools constitute the population. By adopting stratified random sampling technique the investigator selected from each mandal of the district. In the second stage from the teachers working in each of the school, ten teachers male and female were selected. From the population, 480 teachers teaching only secondary schools were selected for the present study. The sample also includes 240 male

and 240 female teachers .Thus the sample is selected by following stratified random sampling procedure. The same is shown below.

480(24 Mandals)



Research Tool

Research tools are many kinds of collecting the required data. Each tool is particular1y appropriate for certain sources of data, yielding information of the kind and in the form that would be most effectively used. Many of the tools of research have been designed to yield quantitative measures.

Though many tools are available the researcher developed instrument namely Environmental Awareness Scale to collect data from different environmental components regarding Environmental awareness among secondary school teachers

The preliminary form of the Environmental awareness tool broadly covers 6 major areas namely(1) General awareness-43 items (2) Air Pollution-16 items (3)Water Pollution -9 items (4) Industrial Pollution-4 items (5) Sound Pollution-4 Items and (6)Thermal Pollution-3 items. Thus the total number of the items in the tool is 79 items. It is a 3 point scale with three alternatives viz. Agree, Undecided and Dis Agree.The Items are given in the form of statements.

Validity:

In order to validate the items for their comprehension, structure, grammar and the clarity of their meaning, the inventory was presented to a panel of 15 experts consists of experienced secondary school teachers. The experts were requested to go through the items and suggest the modifications to be carried out if any. Their suggestions were incorporated and modified the items accordingly. Thus both the content validity and face validity of the Environmental Awareness Scale were established.

Reliability

The most indispensable characteristic of any measuring instrument. A test is reliable if it measures efficiently what it purports to measure or what it does measure. Reliability is expressed as a coefficient of correlation which is called reliability coefficient. The coefficient was estimated using Kuder Richardson Formula. The calculated reliability is 0.986 From this it can be understood that the Environmental Awareness Scale is a reliable one.

Pilot Study

The selection of the items was based on the results of item analysis, which provides an index of item discrimination. Since the discriminative power of each item was to be determined, the sample was classified into high group and low group.

First, the total scripts (370) were arranged in an ascending order on the basis of the total score obtained by the teachers on the Environmental Awareness Scale. The upper 25 percent of the papers were considered as the high group and the lower 27 percent of the papers were considered as the low group. The rest were excluded from the analysis. These two groups provide criterion groups from which

to evaluate the individual item. Calculation of t-value for all the items was carried out by using SPSS package. Out of 79 items 9 which were having the discrimination value less than 3.3424 were deleted from the preliminary form and retained 70 items for the final form of the tool. Thus, the tool was standardized before administering to the respective group of subjects.

Results and Discussions

Table 2:Significance of the Differences Teachers on the Environmental awareness among secondary school teachers in Government, Private and Local bodies

	Management	N	Mean	Std. Deviation	f value	p value	sig
Total Awareness	Government	143	220.970	13.809	0.554	0.575	@
	Private	52	221.370	14.243			
	Local Bodies	285	222.490	15.193			
	Total	480	221.910	14.679			
General	Government	143	132.160	8.173	0.562	0.570	@
	Private	52	131.900	8.514			
	Local Bodies	285	132.930	8.926			
	Total	480	132.590	8.657			
Air	Government	143	25.100	2.036	0.583	0.559	@
	Private	52	25.270	2.115			
	Local Bodies	285	25.330	2.075			
	Total	480	25.250	2.066			
Water	Government	143	29.980	3.022	0.567	0.567	@
	Private	52	30.120	2.669			
	Local Bodies	285	30.300	3.043			
	Total	480	30.190	2.996			
Industrial	Government	143	11.340	0.978	0.664	0.515	@
	Private	52	11.400	0.934			
	Local Bodies	285	11.240	1.190			
	Total	480	11.290	1.104			
Sound	Government	143	16.830	1.406	0.455	0.635	@
	Private	52	17.000	1.414			
	Local Bodies	285	16.950	1.504			
	Total	480	16.920	1.464			
Thermal	Government	143	5.570	0.765	2.772	0.064	@
	Private	52	5.670	0.617			
	Local Bodies	285	5.730	0.665			
	Total	480	5.680	0.694			

@Not significant at 0.005 level **Significant at 0.005 level * significant at 0.001 level

Source: Author's computation

From Table 2: From the above table it reveals that mean scores of Local bodies management with respect to the environment awareness is (222.49) is slightly higher than Private (221.37) and Government management (220.97).. To study the management wise differences with regard to environment was analyzed by using F – test. The analysed data was presented in Table. The table shows Management wise differences with regard to awareness about the environment, the component of awareness include general, air, water, industrial, sound and thermal etc., The F-scores in the table indicates with respect to the Environment awareness components like Total awareness (F=0.554), General (F=0.562), Air (F=0.583), Water (F=0.567), Industrial (F=0.664), Sound (F=0.455) and Thermal (F=2.772) shows that there are no significant differences among the management with regard to environment in all the components. These findings shows that there is no significant difference among different management teachers with respect to the Environment awareness .

Table 3:Significance of the Differences on the Environmental awareness among Secondary school teachers in Subject of Teaching

	Class Handling	N	Mean	Std. Deviation	f value	p value	sig
Total Awareness	Telugu	78	219.960	14.669	0.508	0.770	@
	English	57	220.890	13.825			
	Hindi	52	221.710	15.782			
	Maths	99	223.060	13.393			
	Science	104	222.560	15.240			
	Social	90	222.370	15.431			
	Total	480	221.910	14.679			
General	Telugu	78	132.060	8.327	0.295	0.915	@
	English	57	131.680	8.424			
	Hindi	52	132.580	9.549			
	Maths	99	133.200	7.662			
	Science	104	132.800	9.111			
	Social	90	132.720	9.188			
	Total	480	132.590	8.657			
Air	Telugu	78	24.920	2.131	1.239	0.289	@
	English	57	24.980	2.264			
	Hindi	52	25.060	2.137			
	Maths	99	25.510	1.832			
	Science	104	25.480	1.956			
	Social	90	25.280	2.188			
	Total	480	25.250	2.066			
Water	Telugu	78	29.370	3.524	1.571	0.167	@
	English	57	30.460	2.646			
	Hindi	52	30.100	3.145			

	Maths	99	30.250	2.946			
	Science	104	30.530	2.666			
	Social	90	30.300	2.989			
	Total	480	30.190	2.996			
Industrial	Telugu	78	11.310	0.984	0.562	0.729	@
	English	57	11.330	1.155			
	Hindi	52	11.230	1.262			
	Maths	99	11.360	1.092			
	Science	104	11.140	1.226			
	Social	90	11.360	0.940			
	Total	480	11.290	1.104			
Sound	Telugu	78	16.780	1.306	0.338	0.890	@
	English	57	16.820	1.477			
	Hindi	52	17.020	1.291			
	Maths	99	17.000	1.558			
	Science	104	16.890	1.468			
	Social	90	16.990	1.590			
	Total	480	16.920	1.464			
Thermal	Telugu	78	5.510	0.785	1.310	0.258	@
	English	57	5.610	0.675			
	Hindi	52	5.730	0.630			
	Maths	99	5.740	0.648			
	Science	104	5.710	0.678			
	Social	90	5.720	0.719			
	Total	480	5.680	0.694			

@Not significant at 0.005 level **Significant at 0.005 level * significant at 0.001 level

Source: Author's computation

From the above table 3 it can be understand that the mean scores of Maths (223.06), Science (222.56) and Social studies (222.37) subject teaching teachers with respect to the environment awareness is slightly higher than Telugu(219.96), Hindi(221.71) and English(220.89).. To study the subject teaching wise differences with regard to environment was analyzed by using F – test. The analysed data was presented in Table. The table shows Management wise differences with regard to awareness about the environment, the component of awareness include general, air, water, industrial, sound and thermal etc., The F-scores in the table indicates with respect to the Environment awareness components like Total awareness (F=0.508), General (F=0.295), Air (F=0.1239), Water (F=1.571), Industrial (F=0.562), Sound (F=0.338) and Thermal (F=1.310) shows that there are no significant differences among the subject of teaching with regard to environment in all the components.

Table 4:Significance of the Differences on the Environmental awareness among secondary school teachers with Job Experience

	Experienc e	N	Mean	Std. Deviation	f value	p value	sig
Total Awarenes s	0-5 years	100	220.510	15.833	2.931	0.021	*
	6-10 years	84	225.170	12.118			
	11-15 years	185	223.060	14.045			
	16-20 years	48	219.830	14.331			
	above 20 years	63	218.030	16.932			
	Total	480	221.910	14.679			
General	0-5 years	100	131.310	9.859	2.107	0.079	@
	6-10 years	84	134.070	7.052			
	11-15 years	185	133.340	8.431			
	16-20 years	48	131.730	8.361			
	above 20 years	63	131.110	9.118			
	Total	480	132.590	8.657			
Air	0-5 years	100	25.210	2.119	3.437	0.009	**
	6-10 years	84	25.870	1.634			
	11-15 years	185	25.260	1.888			
	16-20 years	48	25.020	2.188			
	above 20 years	63	24.650	2.665			
	Total	480	25.250	2.066			
Water	0-5 years	100	30.070	2.735	4.589	0.001	**
	6-10 years	84	30.900	2.714			
	11-15 years	185	30.480	2.857			
	16-20 years	48	29.500	2.954			
	above 20 years	63	29.080	3.760			
	Total	480	30.190	2.996			
Industrial	0-5 years	100	11.480	0.847	4.198	0.002	**
	6-10 years	84	11.440	1.079			

	11-15 years	185	11.320	1.094			
	16-20 years	48	11.060	1.210			
	above 20 years	63	10.860	1.318			
	Total	480	11.290	1.104			
Sound	0-5 years	100	16.840	1.376	0.686	0.602	@
	6-10 years	84	17.130	1.278			
	11-15 years	185	16.940	1.466			
	16-20 years	48	16.850	1.624			
	above 20 years	63	16.780	1.699			
	Total	480	16.920	1.464			
Thermal	0-5 years	100	5.600	0.765	1.294	0.271	@
	6-10 years	84	5.750	0.578			
	11-15 years	185	5.730	0.645			
	16-20 years	48	5.670	0.724			
	above 20 years	63	5.560	0.819			
	Total	480	5.680	0.694			

@Not significant at 0.005 level **Significant at 0.005 level * significant at 0.001 level

Source: Author's computation

From the above table 4- it can be understand that the mean scores of of job experience with 6-10 years (225.17) and 11-15years (223.06) are higher compared to 0-5 years (220.51),16-20years (219.83) and above 20 years (218.03) To study the Experience wise differences with regard to environment was analyzed by using F – test. The analysed data was presented in Table.The table shows Experience wise differences with regard to awareness about the environment, the component of awareness include general, air, water, industrial, sound and thermal etc. . The F- scores in the table indicates that with regard to the environment awareness components like awareness (F=2.931); general(F=2.107); air(F=3.431); water(F=4.581); industrial (F=4.198); sound (F =0.686) and thermal (F =1.294). The above F scores indicate that there are significant differences among the group with regard to awareness, air, water and industrial, the sub-group differences with regard to the components like general, sound and thermal are not significant. Hence the findings shows that there is no significant difference among Job Experience with respect to the Environment awareness is accepted in sub groups General ,Sound and Thermal and rejected in Air,Water Industrial and in Total Environment Awareness”

Conclusion

The results of this study revealed that there is no significant impact of Management, Subject Teaching on Environmental awareness among secondary grade school teachers in all components. Similarly there is no significant difference between who have the Job experience of below 5 years, 6-10 years, 11-15 years, 16-20 years and above 20 years with regard to the environmental awareness among secondary grade school teachers in areas of General, Sound and Thermal pollution components. But there is significant difference between who have the Job experience of below 5 years, 6-10 years, 11-15 years, 16-20 years and above 20 years with regard to the environmental awareness among secondary grade school teachers in areas of Air, Water and Industrial Pollution awareness.

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