

Attitude of In-service Teachers towards the Concept of conservation of Water Resources

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ABSTRACT

Water is indispensable part of society. We need to preserve it. Teachers are the most responsible person of our society and in the best position to help the students to acquire awareness to the water problems. The purposes of the present research are to know the status of the teachers about consciousness and involvement regarding water conservation and to identify the impact of gender and locality on it. The sample consisted of male and female teachers from rural and urban areas of South Bengal. Standardized questionnaires developed to collect the data. The findings indicate that the teachers are enough conscious about water conservation but their involvement was not sufficient and the impact of gender is strong and the urban teachers are better conscious than rural teachers. It is also found that there is no relationship between the teachers' consciousness and involvement towards water conservation.

Keywords: Attitude, Water conservation, Teachers Consciousness, Teachers Involvement.

Introduction: People of the world have exploited almost all the resources of nature, but none as much as water. Water conservation refers to any beneficial reduction of water usage, loss or waste. The public's behaviour towards water problems has been changing effectively over time. Goddard(2000) investigated five polls focusing on the environmental issue. The findings reported that Americans were most concerned about water. Water was at the top of the list of priorities (Goddard, 2003). Not only population growth contributes to water demand, but also technology, conservation, agricultural and industry. In 1997, a research in Stockholm University indicated that by the year 2025, 2/3 of the world's people would suffer from water shortages. Another study also revealed that in coming twenty years supply of water to the people of the world will be reduced to 1/3 of the present supply due to unavailability of water and its demand (World Water Development, UNO 2015). Also ground water level is decreasing every year (A Textbook of Environment, 2002). In view of these; water scarcity will be a main problem in the future. Over population is the biggest problem because water demand will increase by increasing the population growth (Environmental Education, Sen, A. And Singh, M. P, 2002). Exploitation of water resources in the whole world creates many water scarcity problems, only behavioural change can solve this problems.

Lucious, R. (2016) investigates the relationship between water conservation and environmental attitude. This study aims to a better understanding of the socio- demographic and psychological determinants of water conservation behaviour. Dolnicar, S. Hurlimann, A. and Grun, B. (2009) conducted a study about water conservation related behavioural change.

Education is an only method that can help the society and aware the people about water conservation and its demand. School teachers may play an important role here. Daniel Ji (2014) outlines a very clear plan for high school students to help them understand the importance of water conservation. The present study should be considered as an important effort to know the present status of the teachers regarding water preservation. So the study aims to know the consciousness and the opinion of the teachers' regarding these issues. The purpose of the study was to develop and evaluate pre service science teachers' awareness about water usage (Cankaya, C. 2014). This project also aimed to study the involvement and activity of the teachers' for developing awareness in their students towards conservation of water resources. The present study also aimed to know the relationship between teachers' consciousness and involvement.

Looking into the researches done in the area of water conservation is revealed that it is a most important matter to us and our future society by Goddard (2003); Dolnicar, Hurlimann (2010); Lucious (2016); Daniel (2014); oba and Lawrence (2014); Cambell (2004). So, it is important to know the level of consciousness and involvement of the people in this field.

So awareness is very much needed in the present day. Only the teachers can solve the problem by awaking the society, because they play an important role towards society. Seneca Nation of Indians (2009) made a guideline for teachers that how to teach children to save water. A child needs to learn about conservation of water resources from childhood, because students are very important part of our society. They will be able to inform their parents and society about the various problems of water crisis and its remedial measure.

Herein lays the importance of the present study, if the teachers are aware they may involve their students in preservation activity and with the help of the students they can teach and aware the parents and also the whole society. So it is important to measure the attitude of in-service teachers towards the concept of conservation of water resources. In the present study teachers' attitude means their own consciousness and involvement towards conservation of water resources. Here the researcher measures the teachers' direct participation or action towards water conservation. Also the study aimed to search the impact of gender and locality with respect to water conservation and the researcher also want to know the present relation between consciousness and involvement towards water resources.

Objectives of the study:

The objectives of the present study are as follows:

1. To know the status of the Teachers consciousness regarding the conservation of water resources.
2. To compare the Teachers consciousness with respect to gender (Male and Female)
3. To compare the Teachers consciousness with respect to locality (Rural and Urban)
4. To know the status of the Teachers involvement regarding the conservation of water resources.
5. To compare the Teachers involvement with respect to gender (Male and Female)
6. To compare the Teachers involvement with respect to locality (Rural and Urban)
7. To know the relationship between consciousness and involvement regarding conservation of water resources.

Hypothesis of the study:

The following null hypotheses are framed for the present study:

- a) HO_1 - There would be no significant difference between male and female teachers in the consciousness regarding conservation of water resources.
- b) HO_2 - There would be no significant difference between rural and urban teachers in the consciousness regarding conservation of water resources.
- c) HO_3 - There would be no significant difference between male and female teachers in the involvement regarding conservation of water resources.
- d) HO_4 - There would be no significant difference between rural and urban teachers in the involvement regarding conservation of water resources.
- e) HO_5 - There would be no significant relationship between consciousness and involvement regarding conservation of water resources.

Delimitation of the study:

1. The area of the sample was delimited to the teachers of secondary schools only.
2. The study was restricted up to three districts, (Kolkata, Burdwan and North 24 Parganas) and within the selected schools from each district.

Method of the study:

Depending upon the objectives of the study, the descriptive survey method of research was deemed appropriate and suitable in the present study.

The population: In this study the secondary school teachers from the selected schools under WB Board in South Bengal will constitute the population. Here three districts from South Bengal (Burdwan, North 24 Parganas, and Kolkata) are chosen by the researcher to collect the data.

The sample: The sample of the study consists of 200 school teachers chosen from some of the selected schools. Here Simple Random sampling method was used for collecting data.

Table 1 – Sample Distribution

Variables	Groups	Frequency	Percentage %
Gender	Male	112	56
	Female	88	44
Locality	Rural	91	45.5
	Urban	109	54.5
Total		200	

Tools used: Keeping in view the objectives of the present investigation two tests for measuring consciousness and involvement of the rural and urban teachers towards conservation of water resources were developed by the researcher.

In this study, Reliability was assessed by using the Cronbach's alpha formula. For Consciousness scale, it was found .571 and Involvement scale, it was found .879. Two tests were validated by three experts.

Statistical Treatment:

Keeping in view the different objectives of the study, the obtained data were analyzed.

Analysis and Interpretation:

Analysis of HO_1 - Difference between male and female teachers in the consciousness regarding conservation of water resources.

Table 2:

Consciousness	Gender	N	Mean	Std. Deviation	t- value	df	Level of significance
	Male	112	47.08	3.247	-2.211*	198	.028
	Female	88	48.07	2.990			

(*Significant at 0.05 level of significance)

In case of comparing male and female teachers in consciousness regarding conservation of water resources, the $t_{(198)}$ value is 2.211 and p value is 0.028 ($p < 0.05$). Hence, 't' is significant at 0.05 level, so null hypothesis was rejected. Result shows that there is a difference between male and female teachers in respect to their consciousness towards conservation of water resources. Here mean shows female teachers reported stronger than male teachers in the consciousness regarding water conservation. That means female teachers are better conscious than male teachers.

Analysis of HO_2 - Difference between rural and urban teachers in the consciousness regarding conservation of water resources.

Table 3:

Consciousness	Locality	N	Mean	S. D	t- value	df	Level of significance
	Rural	91	46.44	2.997	-4.605*	198	.000
	Urban	109	48.41	3.034			

(*Significant at 0.05 level of significance)

In case of comparing rural and urban teachers in the consciousness regarding conservation of water resources, the calculated $t_{(198)}$ value is 4.605 and p value is 0.000 ($p < 0.05$). Hence, 't' is highly significant at 0.05 level, therefore the null hypothesis was rejected. The analysis displays that there is a difference between rural teachers and urban teachers in respect to their consciousness towards conservation of water resources. Here mean shows that rural teachers reported weaker than urban teachers in the consciousness regarding conservation of water resources. That means the urban teachers are better conscious than rural areas teachers.

Analysis of HO_3 - Difference between male and female teachers in the involvement regarding conservation of water resources.

Table 4:

Involvement	Gender	N	Mean	S. D.	t- value	df	Level of significance
	Male	112	33.53	7.312	-.791*	198	.430
	Female	88	34.36	7.562			

(*Not Significant at 0.05 level of significance)

In case of comparing male and female teachers in the involvement regarding conservation of water resources, the calculated $t_{(198)}$ value is 0.791 and p value is 0.430 ($p > 0.05$). Hence, 't' is not significant at 0.05 level, so null hypothesis is accepted. On the basis of the analysis of data, it indicates that no difference was found between male teachers and female teachers in respect to their involvement towards conservation of water resources. Here female teachers are slightly greater than male teachers in mean score. Otherwise they play similar role in involvement in water conservation activity in school area.

Analysis of HO_4 - Difference between rural and urban teachers in the involvement regarding conservation of water resources.

Table 5:

Involvement	Locality	N	Mean	S. D	t- value	Df	Level of significance
	Rural	91	34.51	8.984	1.064*	198	.289
	Urban	109	33.39	5.786			

(*Not Significant at 0.05 level of significance)

In case of comparing rural and urban teachers in the involvement regarding conservation of water resources, the calculated $t_{(198)}$ value is 1.064 and p value is 0.288. Hence, 't' is not significant at 0.05 level. Therefore, null hypothesis is accepted. Another important finding, the analysis revealed that no difference was found between rural and urban teachers in respect to their involvement towards conservation of water

resources. Here rural teachers are slightly greater than urban teachers in their mean score. Otherwise they are similar to their involvement in water conservation activity on school area.

Analysis of HO₅ - Relationship between consciousness and involvement regarding conservation of water resources.

Table 6:

		Consciousness total	Involvement total
Consciousness total	Pearson Correlation	1	.126
	Sig. (2-tailed)		.075
	N	200	200
Involvement total	Pearson Correlation	.126	1
	Sig. (2-tailed)	.075	
	N	200	200

The above table shows that the correlation between the consciousness and involvement of the teachers is not significant. There is a very low relationship between the consciousness and involvement of the teachers towards the conservation of water resources. The teachers are conscious but they are not involved in conservation process. It will indicate that consciousness of the teachers does not make sure of their involvement regarding water conservation. But with the increase of teachers' consciousness regarding water conservation, the teachers' involvement may also increases.

Conclusion of the study:

It is necessary to maximize optimum utilization of water resources by minimizing wastage, for increasing utilizable water resources. Some preservation technique and awareness can change the present situation. The school teachers can play a vital role in this regard by spreading awareness about the importance of water conservation. So teachers must be involved and aware in water preservation process. Herein lays the importance of the present research. So that the government and society can look over in the preservation process and organize some environmental awareness programme for all categories people in this society. So awareness is important in present situation. If teachers and students are aware and involved in water conservation process, they can educate formally or informally the whole society and whole world. Both types of education help to increase public awareness, human values and concepts for solving their daily and future problems regarding water resources.

Bibliography:

- Cambell, L. (2004). The Design and Development of a Simulation to Teach Water Conservation. *International Education Journal* 4 (4), retrieved from <http://iej.cjb.net> on Jan 3, 2017.
- Cankay, C. & Iscen, C.F. (2015). Development of Pre-service Science Teachers' Awareness of Sustainable Water use. *Academic Journals* 10 (4), 471-484. Retrieved from <http://www.academicjournals.org/ERR> on Jan 3, 2017.
- Costal Georgia Water and Wastage permitting plan for Managing Saltwater Intrusion*. Oct. 31, 2007. Retrieved from <http://www.gaepd.org/Documents/epdforms.wpb> on Dec 16, 2016.
- Dolnicar, S. & Hurlimann, A. (2010). Australians' Water Conservation Behaviours and Attitudes. *Australian Journal of Water Resources*, 14 (1), 43-53 retrieved from December 5 2016 <http://ro.uow.edu.au/commpapers/718>.
- Goddard, (2003). Education and Water Conservation in Tucson, Retrieved from <https://Citeseerx.ist.psu.edu>
- How Efficiency Programs help Water Utilities Save Water and Avoid Costs. Cases in Water Conservation: (2002) EPA, United states. Retrieved from www.epa.gov/owm/water-efficiency/index.html
- Ji, D. (2014). High School Curriculum of Water Conservation, A Senior Project. Retrieved <https://digitalcommons.calpoly.edu>
- Lucious, R. (2016). Water Conservation and Environmental Attitude. Retrieved from <https://wikipedia.org>
- Ministry of Water Resources Performance Budget 2000-2001 chapter IV. *Food Control and Related Matters*. P 13 (Jan 4, 2001). Retrieved from wrmin.nic.in/writereaddata/Budget on Dec 29, 2016.
- Oba, F.J. & Lawrence, A.A. (2014). The attitudes of Biology Teachers and students toward the Conservation of Natural Resources in Ekiti State, Nigeria. *Journal of Education and Practice* 5 (34), 149-153. Retrieved from www.iiste.org/journals/index.php/jep/article/viewfile/17253/17702 on Jan 4, 2017.
- Seneca Nation of Indians. Guideline for Teachers that How to Teach Children to Save Water: (2009) New York. Retrieved from <https://en.m.wikipedia.org>
- Singh, K. (2007). *Quantitative Social Research Methods*. New Delhi: SAGE Publications India Pvt Ltd.
- Water Conservation Education Programs. (2007). *EPD Guidance Document*. Retrieved from https://epd.georgia.gov/files/site_page on Jan 4, 2017.
- Ziethow, K.J. (2016). Socio – Demographic and Psychological Determinants of Water Conservation Behaviour: Evidence from Germany and Jordon. *Dissertation*. Retrieved from edoc.hu-berlin.de/dissertation/ziethow-kim-j-2016-01-13/pdf/ziethow on Jan 4, 2017.