A STUDY OF THE COMPETENCIES AND COMMITMENT OF TEACHERS WORKING ON ENVIRONMENTAL EDUCATION AT ELEMENTARY LEVEL

N. Suhasini	Research Scholar, Department of Education, Kakatiya University, Warangal, Telangana, India.
Prof. Ramesh Ghanta	Professor (Retired), Department of Education, Maulana Azad National Urdu University (A Central University) Hyderabad, Telangana, India.

ABSTRACT The research into the environmental education competencies and commitment of elementary school teachers was conducted using mixed research methods. The data were collected using the questionnaire. The research findings revealed that most respondents had a moderate level of environmental education competencies and commitment that involved six aspects: knowledge of the environment, basic understanding of the environment, responsibility for the environmental education of professional teachers, planning and practice with regard to the environmental education, promoting learning about the environmental education and evaluation of the environmental education. The approaches to enhance the environmental education competencies and commitment levels of elementary school teachers should involve multidisciplinary instruction learning, community-based learning, project-based learning, happy teaching and learning, and holistic learning management.

INTRODUCTION

Education is a process of human enlightenment and empowerment for the achievement of a better and higher quality of life. A sound and effective system of education results in the unfoldment of learners' potentialities, enlargement of their competencies and transformation of their interests, attitudes and values. Environmental education means the educational process dealing with mass relationship with the natural and manmade surroundings and includes the retention of population, pollution, resources allocation depletion, conservation, transportation, technology urban and rural planning to the total human environment (Encyclopedia of Environment Pollution, Planning & Conservation, Vol.5).

The environmental scenario of India is very wide. As ours is a country highly diverse climatically, geologically, geographically, edaphically, floristically, faunistically, ethnically, lingually, socially, and economically. At the first level, special attention must be paid to school going children and women (as they over 50 % of the population). They are to be made aware of health, family planning, nutrition, rural development, slum improvement, sanitation, hygiene, water and food contamination, fodder, fuel wood etc. Non – governmental organizations have to play a significant role. In this context the directory of the Department of Environment, Government of India, there are more than 200 Non – Governmental organizations of which nearly 150 works in the area of environmental education and awareness. The Chief goals of environmental education in India conceived are (i) To improve the quality of environment, (ii) To create awareness among the people on environmental problems and conservation, (iii) To create an atmosphere so that people participate in decision – making and develop the capabilities to evaluate the developmental programmes.

The environmental education essentially deals with humanity, nature and the interactive processes between them, which are complex and multidimensional. Environmental scientists, educationists and practitioners have perceived environmental education in their own way. To appreciate their views let us have look at environmental education as defined. The Ministry of Environment & Forests is the nodal agency in the administrative structure of the Central Government, for the planning, promotion, co-ordination and overseeing the implementation of environmental and forestry programmes. The Ministry is also the Nodal agency in the country for the United Nations Environment Programme (UNEP). The principal activities undertaken by Ministry of Environment & Forests, consist of conservation & survey of flora, fauna, forests and Wildlife, prevention & control of pollution, afforestation & regeneration of degrade areas and protection of environment, in the frame work of legislations. The main tools utilized for this include surveys, impact assessment, control of pollution, regeneration programmes, support to organizations, research to solve solutions and training to augment the requisite manpower, collection and dissemination of environmental information and creation of environmental awareness among all

sectors of the country's population. Environmental Education Curriculum Framework for Teachers and Teacher Educators (NCTE, 2005): To make teacher education respond to the needs of creating environmental awareness in children, the National Council of Teacher Education (NCTE, in 2005, put forth before the country a comprehensive framework on environmental education for teachers and teacher educators at the four levels of teacher preparation, viz., Early Childhood Care and Education (ECCE), Elementary Education, Secondary Education and Tertiary Education.

The framework focused on including the meaning, scope and importance of EVS, its necessity for teachers, local environmental conditions, field work, simple projects, community and students' participation in environmental protection, visits to zoos, museums, etc. While the above serves as a broad framework, much deliberation is required at individual state level while incorporating EE in their teacher education, as it involves addressing several questions relating to the perspective of EE to be introduced in teacher education (TE) at different levels, modalities of introducing it, contents and transactional strategies to be dealt with, building required capacities in teacher educators. Teachers, thus, become the key to the successful transaction of environmental education in schools. They play a central role in building necessary abilities and competencies in children for exploring, understanding, appreciating and participating in environmental protection and conservation. In order to achieve this, the teacher needs to be empowered to create awareness, attitude and concern in children and facilitate them in understanding and solving environmental problems. In the National Curriculum Framework for Schools, Environmental Education is introduced in the elementary education as Environmental Studies (EE in Schools, 2004 (a); Habitat & Learning -2005).

Review Of Related Literature

Dash D & Satapathy M.K (2006) conducted a study on, "education for sustainable development teaching of values for conservation of environment through 3 R's". The results of the study are as follows: It needs to be realized that sustainable development is both a goal as well as a process. Its attainment requires a fundamental shift in attitudes, values and behavior by both individuals and governments alike.An individual is the starting point of environmental degradation. If an individual behaves according to his need and not in greed, and in comfort and not in luxury and ponders about what is enough for a comfortable lifestyle, most of the problems can be solved. The sustainable lifestyles of the individuals can lead to sustainable communities, to sustainable nations and to a sustainable world.

Sharma and Sarraff (2007) conducted a study on "Environmental Awareness among Students of +2 Levels" with the objectives to compare environmental awareness among the students of CBSE and Uttar Pradesh board. For collecting the data an 'Environmental Awareness Questionnaire' (EAQ) was constructed and administered on students. The major findings were that in comparison to U.P. board

students, CBSE students were more aware of environment. The study revealed that female students were more aware about environment than male students.

Naseema (2007) conducted a study on "Environmental Awareness of higher secondary students in government and private schools". The normative survey method was used to find out the environmental awareness among the higher secondary students. The findings were: the higher secondary boys and girls, rural and urban area and government and private students had significant difference in their environmental awareness.

Santosh Kumar et.al., (2008) conducted a study entitled "Water Pollution in the Ganges River; Policies for Improvement of the Ganges". The present research critically examines the physicochemical characteristics and level of dissolved heavy metals at three ecologically distinct zones along the course of the river Babu ghat located in the eastern part of the metropolitan mega city Calcutta, Diamond Harbor and Gangasagar positioned at the mouth of the Ganges estuary. It was revealed that the socio-economic development of Calcutta, the most potential economic zone in India situated on the east bank of Hugh River, has had a significant impact on the water quality of this major river.

Jyotsna Jalan and Somanathan (2010) conducted a study on "Awareness and the Demand for Environmental Quality. The investigators used a household survey from urban India to estimate the effects of schooling, exposure to mass media, and other measures of awareness on home water purification. They find that these measures of awareness have statistically significant effects on home purification and, therefore, on willingness to pay. These effects are similar in magnitude to the wealth effects. Average costs of different home purification methods are used to generate partial estimates of willingness to pay for better drinking water quality.

Rai A. K & Sharma A. N (2011) studied Environmental Ethics Education: A Necessity to initiate Environment Oriented Action. The present paper attempts to provide a rationale for inclusion of environmental ethics as an important aspect of environmental education both at the curricular level as well as form pedagogical point of view. Further, the significance of ethical discussions to initiate environment oriented responsible behavior on part of the individual is also discussed.

Arjun Kumar J (2012) A Study on Assessment of Environmental Awareness Among Teacher Trainees in Teacher Training Institutes. The present study is focused on the assessment on environmental awareness among teacher trainees in teacher training institutes in Tiruchirapalli district; Tamandu.

Need Of The Study
Most people recognize the urgent need for environmental education, but only some have clear ideas about what to be done, and very few have either the actual experience or the knowledge about the course that need to be taught. The main purpose of this study is to know about the competencies and commitment possessed by the elementary school teachers on environmental education and to what extent they are able to use their knowledge in making their surroundings clean and green and how best they are trying to solve the problems that they and their children come across in their daily life and how far they are trying to attain sustainable development.

There is a need for a new approach to education, which cut across various subjects at schools and higher levels. Environmental concerns are to be brought in all subject areas, rather than to introduce as a new subject. As education is part of the society and teacher is an important and responsible element of the society it is the duty of the teacher to impart any message to the students and as well as the members of the society about activity-based education regarding the environmental education at all stages of life. Before that there is need for every teacher to update their knowledge according to the current problems of the environment and by keeping all their competencies and commitments in view, they should try their level best in achieving sustainable development regarding the present environmental crisis.

Objectives
1. To study the competency levels and commitment levels prevailed among elementary school teachers in teaching topics related to environmental education.

2. To study the achievement of the students in environmental education at elementary level.
3. To find out the relationship between competencies and commitment on one side and achievement on the other.

Hypotheses Of The Study
1. There is no significant difference among elementary school teachers towards their competencies and commitment with respect to their medium of instruction.
2. There is no significant difference among elementary school teachers towards their competencies and commitment with regard to the type of management of the school.
3. There is no significant impact of competencies and commitments of teachers on the academic attainment in environmental education of their students with regard to the gender of the teacher.

Research Methodology
Selection Of The Sample:
A sample of 120 members were selected randomly for the present study. The sample was selected randomly based on the four different variables, which includes gender, medium of instruction, type of management of schools and location of the school.

Nature of the sample: For the present study, random sampling method was adopted. The sample has been taken from private and government managed schools of Warangal district.

Table showing the nature of the sample based on the gender:

S. No.	Gender	Number	Percentage (%)
1.	Male	49	41%
2.	Female	71	59%
	Total	120	100%

The sample includes 41 of male and 59% of the female teachers.

Table Showing Nature Of The Sample Based On Medium Of Instruction:

S.No	Medium of instruction	Number	Percentage(%)
1.	Telugu	76	63%
2.	English	44	37%
	Total	120	100%

The sample includes 63% of the teachers working in telugu medium schools and 37% of the teachers working in english medium schools

Table Showing Nature Of The Sample Based On The Type Of Management:.

S.No	Type of Management	Number	Percentage(%)
1	government	80	67%
2	private	40	33%
	Total	120	100%

The sample includes 67% of the teachers working in government schools and 33% of the teachers working in private schools.

Table Showing The Nature Of The Sample Based On Location Of The School:

S. No	Location of the school	Number	Percentage (%)
1	Rural	68	57%
2	Urban	52	43%
	Total	120	100%

Statistical Analysis:
After data collection, mean and standard deviation, were calculated to study the influence of various variable related to the present study. The inferential statistics such as critical ratio (or) t-test was used to test the hypothesis. Each statement among the variables to be studied, even the level of significance has also been calculated, following the t-test.

Data analysis and Interpretation
Hypothesis
• **Significant difference between elementary school teachers towards their Conceptual Competency in teaching of Environmental Education on the basis of their Medium of Instruction.**

Table observed that, the mean perceptual score of teachers based on their medium of instruction with respect to Conceptual Competency levels of the teachers working at elementary level on environmental

education. The mean perceptual score for English medium school teachers was 40.82 where as it was for the Telugu medium school teachers was 38.60. The SD values for English and Telugu medium school teachers were 6.75 and 5.89 respectively. The t – value was 3.22 and the p-value was 0.00 which was statistically significant at 0.01 level. Hence, the null hypothesis was rejected. It shows that, there is a significant difference between the perceptions of English and Telugu medium school teachers and English medium school teachers perceived high towards Conceptual Competency levels of the teachers working at elementary level on environmental education.

Area	Medium of Instruction	N	Mean	Std. Dev.	t-value	p-value	Level of Significance
Conceptual Competency	English	268	40.82	6.75	3.22**	0.00	Significant at 0.01 level
	Telugu	132	38.60	5.89			

- **Significant difference between elementary school teachers towards their Commitment to the Learner in teaching of Environmental Education on the basis of their Medium of Instruction.**

Area	Medium of Instruction	N	Mean	Std. Dev.	t-value	p-value	Level of Significance
Commitment to the Learner	English	268	74.20	12.33	2.92**	0.00	Significant at 0.01 level
	Telugu	132	70.55	10.48			

Table observed that, the mean perceptual score of teachers based on their medium of instruction with respect to Commitment to the Learner of the teachers working at elementary level on environmental education. The mean perceptual score for English medium school teachers was 74.20 where as it was for the Telugu medium school teachers was 70.55. The SD values for English and Telugu medium school teachers were 12.33 and 10.48 respectively. The t – value was 2.92 and the p-value was 0.00 which was statistically significant at 0.01 level. Hence, the null hypothesis was rejected. It shows that, there is a significant difference between the perceptions of English and Telugu medium school teachers and English medium school teachers perceived high towards Commitment to the Learner of the teachers working at elementary level on environmental education.

- **Significant difference between elementary school teachers towards their Curricular & Content Competency in teaching of Environmental Education on the basis of their School Management.**

Area	School Management	N	Mean	Std. Dev.	t-value	p-value	Level of Significance
Curricular & Content Competency	Government	195	89.58	14.62	0.66 NS	0.51	Not Significant
	Private	205	88.64	13.73			

Table observed that, the mean perceptual score of teachers based on their school management with respect to Curricular & Content Competency levels of the teachers working at elementary level on environmental education. The mean perceptual score for Government school teachers was 89.58 where as it was for the Private school teachers was 88.64. The SD values for Government and Private school teachers were 14.62 and 13.73 respectively. The t – value was 0.66 and the p-value was 0.51 which was statistically not significant at any level. Hence, the null hypothesis was accepted. It shows that, there is no significant difference between the perceptions of Government and Private school teachers and they perceived similar opinion towards Curricular & Content Competency levels of the teachers working at elementary level on environmental education.

- **Significant difference between elementary school teachers towards their Commitment to the Learner in teaching of Environmental Education on the basis of their School Management**

Table observed that, the mean perceptual score of teachers based on their school management with respect to Commitment to the Learner

of the teachers working at elementary level on environmental education. The mean perceptual score for Government school teachers was 73.28 where as it was for the Private school teachers was 72.73. The SD values for Government and Private school teachers were 12.24 and 11.52 respectively. The t – value was 0.46 and the p-value was 0.65 which was statistically not significant at any level. Hence, the null hypothesis was accepted. It shows that, there is no significant difference between the perceptions of Government and Private school teachers and they perceived similar opinion towards Commitment to the Learner of the teachers working at elementary level on environmental education.

Area	School Management	N	Mean	Std. Dev.	t-value	p-value	Level of Significance
Commitment to the Learner	Government	195	73.28	12.24	0.46 NS	0.65	Not Significant
	Private	205	72.73	11.52			

CONCLUSION

The study clearly shows that the gender, medium of instruction and location of the school as factors are not influencing the competencies and commitment levels of the teachers working in the elementary schools on environmental related concepts. Where, as the type of management of the school in which the teachers is working is showing impact on the competency and commitment levels of the teachers on environmental related concepts. The present study shows that the type of the management and medium of the school as factors are not influencing the competencies and commitment levels of the teachers working in the elementary schools on Curricular & Content Competency in teaching of Environmental Education. Whereas, the gender and location of the school in which the teacher the is working is showing impact on the competency and commitment levels of the teachers on the concept of global warming and greenhouse effect.

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