



A Study on the Attitudes of Secondary school biological science teachers towards Environmental Ethics in Chittoor District of Andhra Pradesh

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Abstract

Ethics is relating to people in justice and love. Environmental Ethics starts with human concerns for a quality environment, and some think, this shapes the ethic from start to finish. Others hold that, beyond inter-human concerns, values are at stake when humans relate to animals, plants, species and ecosystem (Holmes Rolston, III)". Thus, Environmental Ethics aims to explicate how one should behave or what rules and moral obligations one should have while interacting with his environment. And the Attitude towards environmentally moral behaviour helps to rescue the environment from destruction and that Attitude especially among teachers would influence many people in the society along with students, who are the future generations. Hence to assess the attitudes of secondary school biological science teachers towards Environmental Ethics is needed to draw conclusions regarding the moral obligations towards environmentally ethical behaviour. So, Environmental Ethics Attitude Scale (EEAS) which consists of 35 items is used in the present study. The reliability and validity of EEAS are found to be 0.99 and 0.994. The study revealed that, out of a sample of 500 teachers, there are 134(26.8%) teachers with high Attitude level, 241(48.2%) teachers with moderate level and 125(25%) teachers at low level of Attitude towards Environmental Ethics.

I. Introduction:

“Environmental Ethics is theory and practice about appropriate concern for, values in, and duties regarding the natural world. By classical accounts, ethics is relating to people in justice and love. Environmental Ethics starts with human concerns for a quality environment, and some think, this shapes the ethic from start to finish. Others hold that, beyond inter-human concerns, values are at stake when humans relate to animals, plants, species and ecosystem (Holmes Rolston, III)”.

II. Purpose of Environmental Ethics Education:

The present day environment crisis demands a change in Attitude, in order that initiatives can be taken to rescue the environment from destruction. Environmental Ethics refers to the moral behavior towards environment. And the

Attitude towards environmental moral behavior helps to rescue the environment from destruction and that Attitude especially among teachers would influence many people in the society along with students, who are the future generations. Therefore the present study tried to assess the attitude of secondary school biological science teachers towards Environmental Ethics.

III. Objectives of the study:

1. To study the Secondary School Teachers' overall Attitude towards Environmental Ethics.

VI. Hypotheses of the study:

1. There would be no significant difference in the overall Attitude of Secondary School Biological Science Teachers towards Environmental Ethics.

V. Review of Literature:

Umme Kulsum, Shankarappa M (2018) carried out a study on Environmental Ethics among Secondary School students and focused on the status of the Environmental Ethics among Secondary School students. **Muthamizhselvan, Lal Kumar (2017)** carried out a study on 270 secondary students to find their Environmental Ethics. The result revealed that no significant difference was found among with regard to gender, nativity, and medium of study, mode of management, parental occupation, parental education, size of family and birth order. **Chauhan Loveleen (2016)** carried out a comparative study of Environmental Ethics among Teacher Trainees for sustainable development with respect to their level of education and some family related variables. Results revealed that Urban Female Teacher Trainees have better Environmental Ethics as compared to Male Teacher Trainees, Rural Male Teacher Trainees possess better Environmental Ethics as compared to Rural Female Teacher Trainees. **Mahboubeh Soleimanpour Omran (2014)** highlighted the crises that threaten the whole system of nature, changes in moral principles, attitudes and Environmental Education is very important. This study highlighted the impact of environmental attitudes and values on human behavior with nature and it has been endeavoured to emphasize on the change in Environmental Ethics, values and attitudes.

VI. Methodology:

The present study includes Quantitative . Here in this study Survey was followed. Survey collects information using questionnaire come under quantitative design which focus on using statistics and summarize what the observations reveal. quantitative methods to describe what is describing recording,

analysing and interpreting conditions that exist. Some form of statistical analysis is used to describe the results of the study. (J.W.Best & J.V.Kahn)

Descriptive research uses quantitative methods to describe what is describing recording, analysing and interpreting conditions that exist. Some form of statistical analysis is used to describe the results of the study. (J.W.Best & J.V.Kahn)

Therefore in the present study descriptive type of research (survey) is employed by the investigator.

VII. Tools used for the Present Study:

An Environmental Ethics is basically a human ethics based on social justice for all without discrimination of race, sex, ideology, caste, religion or nation. Most current environmental problems are essentially a result of people's activities and their Attitude towards the socio-cultural and natural environments. Historically, individual and societal values have not always been in the best interests of preserving a high quality environment. The present day environment crisis demands a change in Attitude, in order that initiatives can be taken to rescue the environment from destruction. (Natural Environment Research Council, UK, 1989).

- Environmental Ethics Attitude Scale (EEAS) – Developed by the investigator.

the present study tries to assess Attitude of Biological Science Teachers towards Environmental Ethics. For this purpose, Likert's 5-point scale is developed by the investigator.

The tool is entitled, "*Environmental Ethics Attitude scale*" (EEAS) consists of 35-items covering 4-dimensions of Attitudes namely,

- Anthropocentrism (EEA1)
- Biocentrism (EEA2)
- Ecocentrism (EEA3)
- Values (EEA4)

VIII. Reliability and Validity of EEAS:

The reliability of **EEAS** is computed by split half (odd-even) method .The reliability coefficient of for the half test was found to be 0.98. After applying Spearman Browns prophecy formula, the reliability coefficient (r) for the whole scale, it rose to 0.99, indicating a fairly high index of reliability

The intrinsic validity of the scale is 0.989.

IX. Sample and scoring:

. The sample of this study is Secondary School Biological Science Teachers of Chittoor district with a sample size of 500 teachers.

In the present study the researcher or investigator purposively selects certain units for study from the universe which is known as *Purposive Sampling*.

Out of the two scales, EEAS is five point scale and BCS is three point scale. The items of the scale are in the form of statements with responses given against each statement in the boxes.

In EEAS, the responses given are as follows: - Strongly Agree, Agree, Undecided, Disagree and Strongly Disagree. The total score of EEAS questionnaire ranges from 1 to 175, showing lowest and highest Attitudes towards Environmental Ethics.

X. Analysis of the Responses of Biological Science Teachers on the Statements of EEAS (Overall Results)

As envisaged earlier, it is aimed at studying the level of Attitude of Biological Science Teachers towards Environmental Ethics. For this purpose, Likert's 5-point scale was developed by the investigator. The tool entitled, "Environmental Ethics Attitude scale" (EEAS) consists of 35-items covering 4- dimensions of Attitudes namely:

- Anthropocentrism (EEA1)
- Biocentrism (EEA2)
- Ecocentrism (EEA3)
- Values (EEA4)

The data obtained from EEAS was classified into frequencies and percentages of responses of teachers for each item of the tool viz. Strongly Agree, Agree, Undecided, Disagree and Strongly Disagree as presented in Table No.-1.

Table-1: Frequencies and Percentages of Responses of Biological Science Teachers on Each Item of EEAS

Item No	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
	Frequency (%)	Frequency (%)	Frequency (%)	Frequency (%)	Frequency (%)
1	47 (9.4)	64 (12.8)	61 (12.2)	185 (37)	143 (28.6)
2	73 (14.6)	200 (40)	82 (16.4)	119 (23.8)	26 (5.2)
3	15 (3)	14 (2.8)	135 (27)	222 (44.4)	114 (22.8)
4	74 (14.8)	166 (33.2)	61 (12.2)	33 (6.6)	166 (33.2)

Item No	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
5	63(12.6)	122 (24.4)	192 (38.4)	98 (19.6)	25(5)
6	61(12.2)	304(60.8)	60(12)	44(8.8)	31(6.2)
7	38(7.6)	61(12.2)	169(33.8)	116(23.2)	116(23.2)
8	219(43.8)	161(32.2)	30(6)	49(9.8)	41(8.2)
9	62(12.4)	95(19)	103(20.6)	162(32.4)	78(15.6)
10	57(11.4)	101(20.2)	197(39.4)	77(15.4)	67(13.4)
11	34(6.8)	182(36.4)	167(33.4)	53(10.6)	64(12.8)
12	26(5.2)	157(31.4)	190(38)	83(16.6)	44(8.8)
13	26(5.2)	198(39.6)	241(48.2)	13(2.6)	22(4.4)
14	137(27.4)	206(41.2)	104(20.8)	29(5.8)	24(4.8)
15	36(7.2)	276(55.2)	30(6)	118(23.6)	39(7.8)
16	35(7)	315(63)	92(18.4)	11(2.2)	47(9.4)
17	20(4)	157(31.4)	200(40)	56(11.2)	67(13.4)
18	131(26.2)	239(47.8)	33(6.6)	32(6.4)	65(13)
19	24(4.8)	150(30)	163(32.6)	99(19.8)	64(12.8)
20	110(22)	266(53.2)	30(6)	17(3.4)	77(15.4)
21	18(3.6)	202(40.4)	147(29.4)	55(11)	78(15.6)
22	21(4.2)	13(2.6)	93(18.6)	179(35.8)	194(38.8)
23	62(12.4)	320(64)	39(7.8)	12(2.4)	67(13.4)
24	54(10.8)	211(42.2)	111(22.2)	41(8.2)	83(16.6)

Item No	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
25	21(4.2)	48(9.6)	188(37.6)	80(16)	163(32.6)
26	22(4.4)	59(11.8)	90(18)	189(37.8)	140(28)
27	190(38)	155(31)	23(4.6)	30(6)	102(20.4)
28	50(10)	82(16.4)	45(9)	75(15)	248(49.6)
29	35(7)	208(41.6)	179(35.8)	23(4.6)	55(11)
30	129(25.8)	246(49.2)	44(8.8)	13(2.6)	68(13.6)
31	17(3.4)	35(7)	143(28.6)	158(31.6)	147(29.4)
32	19(3.8)	20(4)	195(39)	122(24.4)	144(28.8)
33	21(4.2)	144(28.8)	140(28)	83(16.6)	112(22.4)
34	41(8.2)	265(53)	138(27.6)	10(2)	46(9.2)
35	19(3.8)	11(2.2)	88(17.6)	203(40.6)	179(35.8)

Note: The numbers within the brackets represent percentages

The results obtained in Table-1 reveals the favorable and unfavorable aspects exhibited by Secondary School Biological Science Teachers towards Environmental Ethics.

XI. Findings of Overall Attitude of teachers towards Environmental Ethics

➤ **Teachers express Favourable Attitude towards Environmental Ethics in the following aspects:**

- Consumption of animal and plant resources justifiably.
- Treatment of animals in medical research.
- Exposure of plant species to toxic substances in agricultural research.
- Utilization of resources to provide job facilities for low income group.
- Organic farming reduces underground water contamination.
- Punishment of those involved in illegal hunting.
- Protecting Biodiversity as every body's responsibility.
- Luxurious life style at the cost of environment must be sacrificed for future generations.

- Punishment for destructive activities towards environment.
- Cutting of forest trees for fire wood.
- Bio fuels reduce emission of green house gases which effects various species on earth.
- Use of solar energy to safeguard Biodiversity.
- Atomic energy should be used only for peace purposes.
- Wet lands for improvement of water quality.
- Water contamination harms life.
- Waste management away from residential areas.
- Maintenance of ecological balance of ponds.
- Medicinal plants contribute to human health.
- Appreciation develops moral responsibility to protect things.
- Moral acceptance of ceasing felling of forests even though, the country is developed.

➤ **Teachers expressed unfavourable Attitude towards Environmental Education in the following aspects**

- Destruction of Biodiversity through human interference.
- Over consumption of resources by rich people is unethical.
- Restoration of water bodies.
- Utilization of huge amount of money for pollution control.
- Ban of vehicles those release green house gases.
- Installation of wind mills in coastal areas.
- Illiteracy, ignorance and poverty as responsible elements of population explosion.
- Afforestation and considered as waste of time and energy.
- Deriving pleasure by visiting a bird sanctuary.
- Responsibility of human beings to protect non human things.

XII: Conclusion:

From the above findings it is concluded that the Secondary School Biological Science Teachers exhibit Moderate level of Attitude towards Environmental Ethics. According to the percentage of teachers having different levels of Attitude towards Environmental Ethics, out of a sample of 500 teachers, there are 134(26.8%) teachers in the classification of high Attitude level, 241(48.2%) teachers in the moderate level and 125(25%) teachers at low level of Attitude.

Attitude towards Environmental Ethics can be developed by including a component of Environmental Ethics in teacher education curriculum in the paper, philosophical foundations of education at both B. Ed and M. Ed. along with Metaphysics, Epistemology and Axiology. Even orientation programmes at in-service level would be beneficial.

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