



Categorization pertaining to Attitude of Secondary School Biological Science Teachers towards Environmental Ethics

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Abstract

This paper tries to assess the Attitude of Secondary school Biological science teachers towards Environmental Ethics. Assessment of 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) was developed 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 reveals that Secondary School Biological Science Teachers exhibit moderate attitude towards Environmental Ethics. Dimension wise analysis reveals that they exhibit moderate level of attitude towards Environmental Ethics with reference to Anthropocentrism, moderate level of attitude towards Environmental Ethics with reference to Biocentrism, exhibit high level of attitude towards Environmental Ethics with reference to Ecocentrism and moderate level of attitude towards Environmental Ethics with reference to Values.

I. Objectives Pertaining to Attitude towards Environmental Ethics:

1. To study the Attitude of Secondary School Biological Science Teachers towards Environmental Ethics with reference to dimensions namely, Anthropocentrism, Biocentrism, Ecocentrism and values.

II. Hypotheses Pertaining to Attitude towards Environmental Ethics

1. There would be no significant difference in the Attitude of Secondary School Biological Science Teachers towards Environmental Ethics with reference to various dimensions namely, Anthropocentrism, Biocentrism, Ecocentrism and Values.

III. Methodology

Therefore in the present study descriptive type of research (survey and content analysis) is employed by the investigator. The tools used in the present study are: Environmental Ethics Attitude Scale (EEAS) – 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). The reliability of EEAS is found to be 0.99 The intrinsic validity of

above tools is 0.994 respectively. The sample of the study is *Secondary School Biological Science Teachers of Chittoor district*. For the purpose of the study the researcher collected data from Secondary School Biological Science Teachers to form a sample of 500 Biological Science Teachers .

IV. Analysis of Data

As the data collected through the different statements in the tools are basically qualitative in nature. The total scores on the Attitude towards Environmental Ethics and Biodiversity competencies obtained were computed. The data was analyzed employing appropriate statistical techniques. Descriptive statistics such as Mean, Median, Mode, Quartile Deviation, Standard Deviation, Skewness and Kurtosis were used to describe the distribution of scores.

V. Attitude of Biological Science Teachers towards Environmental Ethics and Distribution Characteristics of Scores

The Attitude of teachers towards Environmental Ethics is measured using Environmental Ethics Attitude Scale (EEAS). The scores are classified dimension-wise and the distribution characteristics are computed with the help of MS Excel package and the results are presented in Table- 1

Table- 1: Table Showing the Attitude of Biological Science Teachers towards Environmental Ethics and Distribution Characteristics of Scores (Size Of The Sample, N=500)

Sl.No	Dimensions	Mean	Median	Mode	Q1	Q3	Q.D	S.D	SK	KU
1	EEA1	60.0	58	58	52	68	8	3.4	0.32	2.08
2	EEA2	66.4	68.8	58	60	73.3	6.6	3.4	-0.74	2.33
3	EEA3	59.8	61.8	61.8	56.3	67.2	5.4	16.0	-0.62	1.20
4	EEA4	51.0	52	52	44	56	6	14.4	0.69	3.08
Overall Attitude		60.3	60	60.5	55.8	65.1	4.6	11.5	0.40	2.99

From the Table- 1, Mean and Median of the Distribution of Attitude Scores (all dimensions taken as whole) are 60.35 and 60 and they are almost the same. Hence, the distribution is very close to the normal distribution. The Skewness of the distribution is 0.40 which is positive and the value is nearer to that of the normal one. The Kurtosis of the distribution is 2.99 which are greater than that of the normal curve. Therefore the distribution of the Attitude Scores is leptokurtic, compared to the normal distribution. The Quartile Deviation (Q.D) and Standard Deviation (S.D) are 4.64 and 11.57 respectively. The Attitude scores of teachers indicate that the distribution is close to normal and belongs to the family of normal curve.

Further, from the Table- 1, it is observed that the measure of central tendencies of all the dimensions of the Teacher's Attitude (separately) also support that the distribution of Attitudes are close to normal curve. Also the magnitudes of S_K and K_U also show that the distributions are belonging to the family of normal curve. Thus it is flexible even to apply all the parametric statistics in the analysis of the data.

➤ **Categorization of Teacher's Attitude towards Environmental Ethics:**

Basing on the quartiles of the distribution of Teacher's Attitudes, the teachers are classified into 3-groups viz. low, moderate and high and their frequencies are as follows.

- **Low group:** The teachers whose Attitude scores are less than Q_1 (55.85%).
- **Moderate group:** The teachers whose Attitude scores are greater than Q_1 (55.85%) and less than Q_3 (65.14%).
- **High group:** The teachers whose Attitude scores are greater than Q_3 (65.14%).

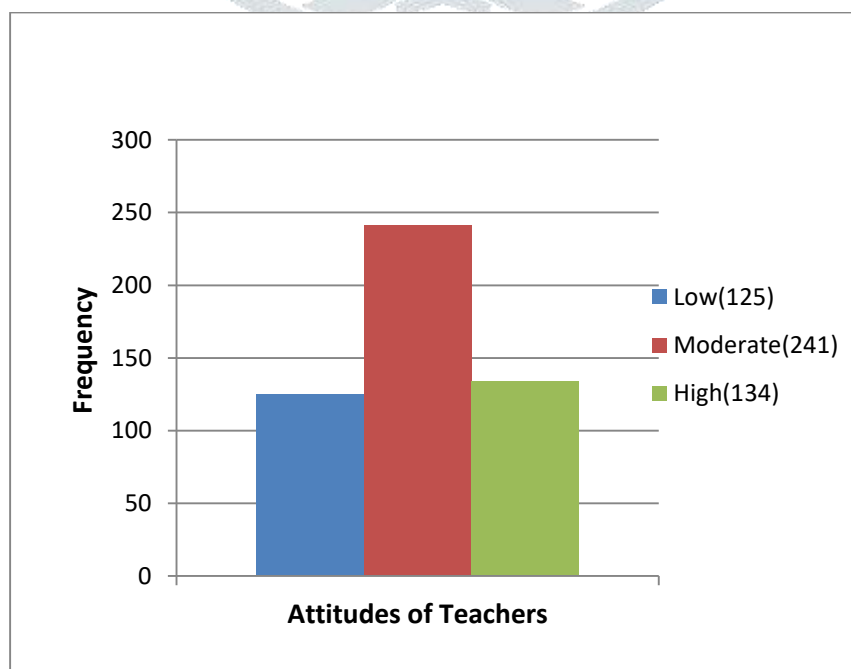
The details are given in Table- 2

Table- 2: Attitude Levels of the Whole Sample of Teachers towards Environmental Ethics.

Sl. No	Levels	Range of Scores in %	No. of Teachers
1	Low	$\leq Q_1$ (55.85%).	125
2	Moderate	$Q_1 - Q_3$ (55.85—65.14%)	241
3	High	$> Q_3$ (65.14%)	134
Total = 500			

The above table infers that Secondary School Biological Science Teachers exhibits moderate attitude towards Environmental Ethics.

Figure No.- 1: Attitude of Secondary School Biological Science Teachers towards Environmental Ethics



➤ Categorization of Teachers' Attitude towards Environmental Ethics- Dimension Wise:

Table- 3 : Attitude Levels of the Secondary School Biological Science Teachers towards Environmental Ethics with reference to Dimension- EEA1.

Sl. No	Levels	Range of Scores in %	No. of Teachers
1	Low	$\leq Q_1$ (27.2%).	130
2	Moderate	$Q_1 - Q_3$ (27.2 — 26%)	234
3	High	$> Q_3$ (26 %)	136
Total = 500			

The above table infers that Secondary School Biological Science Teachers, exhibit moderate level of attitude towards Environmental Ethics with reference to Dimension EEA1.

Table- 4: Attitude Levels of the Secondary School Biological Science Teachers towards Environmental Ethics with reference to Dimension- EEA2.

Sl. No	Levels	Range of Scores in %	No. of Teachers
1	Low	$\leq Q_1$ (20.4%).	102
2	Moderate	$Q_1 - Q_3$ (20.4 — 24.6 %)	275
3	High	$> Q_3$ (24.6 %)	123
Total = 500			

The above table infers that Secondary School Biological Science Teachers, exhibit moderate level of attitude towards Environmental Ethics with reference to Dimension EEA2.

Table- 5: Attitude Levels of the Secondary School Biological Science Teachers towards Environmental Ethics with reference to Dimension- EEA3.

Sl. No	Levels	Range of Scores in %	No. of Teachers
1	Low	$\leq Q_1$ (24%).	120
2	Moderate	$Q_1 - Q_3$ (24 — 67.2%)	44
3	High	$> Q_3$ (67.2 %)	336
Total = 500			

The above table infers that Secondary School Biological Science Teachers, exhibit high level of attitude towards Environmental Ethics with reference to Dimension EEA3.

Table- 6: Attitude Levels of the Secondary School Biological Science Teachers towards Environmental Ethics with reference to Dimension- EEA4.

Sl. No	Levels	Range of Scores in %	No. of Teachers
1	Low	$\leq Q_1$ (18.6%).	93
2	Moderate	Q_1-Q_3 18.6—19.4%)	310
3	High	$> Q_3$ (19.4 %)	97
Total = 500			

The above table infers that Secondary School Biological Science Teachers, exhibit moderate level of attitude towards Environmental Ethics with reference to Dimension EEA4.

VI. Findings

From the analysis of data it is found that, Secondary School Biological Science Teachers exhibit moderate attitude towards Environmental Ethics. Dimension wise analysis reveals that they exhibit moderate level of attitude towards Environmental Ethics with reference to Anthropocentrism, moderate level of attitude towards Environmental Ethics with reference to Biocentrism. , exhibit high level of attitude towards Environmental Ethics with reference to Ecocentrism and moderate level of attitude towards Environmental Ethics with reference to Values. 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 on Environmental Ethics would be beneficial.

References

- Aziz* & Dr Ajay Kumar Singh*(2015), “A Comparative Study of Environmental Ethics of Teachers Teaching In Primary Schools of Kaushambi District”, International Journal of Arts ,Humanities and Management Studies., ISSN NO. 2395-0692.
- Anjuli Suhane(2012), “Environmental Ethics of In-service Teachers, Pre-service Teachers and Teacher Educators” RGC Research Journal.org.Volume-1,Issue-1.
- Bob Jickling, Lake head University, Canada (2005), Ethics Research in Environmental Education, Southern African Journal of Environmental Education, Vol. 22.

- Ak.Rai& R.N .Sarma (2017), Environmental ethics education : A necessity to initiate environment oriented action, SPIJE, VoL 7, No. I, January
- R. Renugadevi (2012) ,Environmental ethics in the Hindu Vedas and Puranas in India , African Journal of History and Culture (AJHC) Vol. 4(1), pp. 1-3, January,
- Alec M. Bodzin,Beth shiner,Starlin weaver(2010) Inclusion of Environmental Education in Science Teacher Education, Springer, ISBN 978-90-481-9221-2
- Mehmet fati taşar,Gültekin(2010) .Contemporary Science Education Research: Pre-service and In-service Teacher Education, APGEM, Akademi, ISBN 9786053640325

