CONSTRUCTION AND VALIDATION OF ENVIRONMENTAL ETHICS SCALE

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Abstract

Environmental Ethics Scale has been constructed to know the beliefs and actions of class VI students towards environmental issues. It consists of 45 items that cover six areas with five-point scales. For trying out the preliminary draft of the environmental ethics scale, the scale was given to the sample of 113 students of class 6. The difficulty value and discriminating power of the test items were determined by adopting Kelley's (1939) method. The reliability with Cronbach alpha method was found to be 0.805. The scale possesses content validity as it was modified with the valuable opinion of intellectuals in the field of education.

Key Words: *Environment, Environmental Ethics*

An "environment" is the whole of surrounding things. Surroundings are defined by a central entity. In ecology, environment refers to the surroundings of humankind. Generally, environment refers to the biological, physical and social things on the earth or in inhabitable space outside the earth's atmosphere where academic knowledge is a double edged sword (Carayon, 2011). Ethics is a conscious stepping back and reflecting on morality, just as musicology is a conscious reflection on music. It is defined as a set of rules or principles that are followed by a broadly recognized race or group (lawyer, writers etc.). By combining the two terms 'environment' and 'ethics', the resultant is environmental ethics. Environmental ethics are certain set rules and principles that are to be followed in consideration with the environment.

The concept of environmental ethics is said to be of recent origin because of rapid industrialization, urbanization and globalization which made man to think that he should develop a keen concern and high degree of sensitivity towards the environment and develop a moral responsibility towards the natural resources in general and environment in particular (Talawar & Kumar, 2012). Environmental ethics apply ethical thinking to the natural world and the relationship between humans and the earth. Also, it has given a new dimension to the conservation of natural resources and it is one of the major concerns of mankind. It is the discipline in philosophy that studies the moral relationship of human beings to, and also the value and moral status of the environment and its nonhuman contents. It is the examination and discussion of people's obligations towards the environment. It brings about the fact that all the life forms on Earth have a right to live (Internet Encyclopedia of Philosophy, 1995).

To know the environmental ethics means a value system that judges human actions in terms of whether they harm, sustain or improve environmental quality. There is already standardized Environmental Ethics Scale developed by Taj to measure environmental ethics of different age groups. But the items in this tool are not accordance with the present situations. So the investigator felt the need to construct a scale on environmental ethics to know the beliefs and actions of class VI students towards environmental issues.

OBJECTIVE

The objective of the present study was to construct and validate environmental ethics scale.

DEVELOPMENT OF A TOOL

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The following steps were followed in the construction of environmental ethics scale:

1. Planning

For planning of the test, literature and research studies on environmental ethics were extensively read. Already standardized Environmental Ethics Scale developed by Haseen Taj was also reviewed. Likert's method of rating for the construction of the environmental ethics scale was followed, so as to determine actions and beliefs of the students of class VI towards the environmental problems and issues. Statements formed were a mixture of positive and negative statements to add variety to the scale.

Keeping in view the young age of the children, certain books on environment, environment awareness and education, various research papers related to environmental ethics and environmental science books were referred. Also the help of colleagues was sought to frame the items for environmental ethics scale. The following areas were derived from the review of related literature:

- Conservation of Resources
- Resource Degradation
- Ethical Environment Behaviour
- Environmental Ethical Concern
- Responsible Environment Behaviour
- Health and Hygiene
- Global Climate Disruption

The language of the statements was kept simple and clear to avoid any type of confusion. As the main aim of the construction of the scale was to know the environmental ethics of class VI students , very technical and very specific terms were avoided and positive and negative statements were framed.

2. Preparation of First draft with Experts Opinion

Initial list was prepared with 67 test items. After consultation with environmental education teachers, out of 67 items, 52 were retained out of which 35 were positive and 17 were negative items.

Then, suggestions for additions, deletions and modifications of items were sought from the subject experts to ensure the correctness and ease of comprehension. The preliminary draft was corrected by subject experts very judiciously and then corrected draft was sent to experts for content validity. The experts were requested to feel free to delete or add any type of test item, error, ambiguity and technical problem that might have crept inspite of the best effort in the scale. After discussion with experts, valuable suggestions were kept in mind to frame, correct, delete and addition of the test items and rectification the draft came out with 50 items. After generating the scale items, face validity was established.

3. The preliminary draft of the scale

After preliminary screening, editing of the statements and their pre-try-out and modifications the preliminary form of the scale comprised of items of Likert type on a five- point rating scale on the basis of their actions and beliefs towards environmental issues was prepared. In this scale 19 statements were negative and 31 were positive statements in six dimensions. as shown in Table 1 and Table 2.

Table 1: Distribution of items of Environmental Ethics Scale in Various dimensions (Preliminary Draft)

Dimensions	**Serial Numbers**	**Total**
Conservation of Resources	1-7	7
Ethical Environment Behaviour	8-19	12
Environmental Ethical Concern	20-28	9
Responsible Environment Behaviour	29-39	11
Health and Hygiene	40-44	5
Global Climate Disruption	45-50	6
Total		**50**

Table 2: Distribution of positive and negative statements in the Environmental Ethics Scale (Preliminary Draft)

Statement	Dimensions	Serial Numbers	Total
Positive	Conservation of Resources	**1,2,3,4,5,6**	**6**
	Ethical Environment Behaviour	**11,13,16,19**	**4**
	Environmental Ethical Concern	**21,22,23,24,25,26,28**	**7**
	Responsible Environment Behaviour	**29,31,32,33,34,35,36,38**	**8**
	Health and Hygiene	**41,42,44**	**3**
	Global Climate Disruption	**48,49,50**	**3**
	Total		**31**
Negative	Conservation of Resources	**7**	**1**
	Ethical Environment Behaviour	**8,9,10,12,14,15,17,18**	**8**
	Environmental Ethical Concern	**20,27**	**2**
	Responsible Environment Behaviour	**30,37,39**	**3**
	Health and Hygiene	**40,43**	**2**
	Global Climate Disruption	**45,46,47**	**3**
	Total		**19**
	G.Total		**50**

The second draft with 50 items with the dimensions of environmental ethics was administered to 10 students of class VI individually from different schools. The administration of the scale was done with the view to know the deficiencies and difficulties of the students in answering the items. The administration of the draft to each student was supervised by the investigator. Students gave suggestions for simplification of language of the items according to their mental level. In the light of their responses and interpretations the necessary modifications and rectifications were made.

This scale of environmental ethics was administered to a group of 113 students of Class6 of Shivalik Public school, Chandigarh for try-out. The response sheets were collected and scored for each individual separately. The scoring was based on a five point Likert Type Scale. The scores to be awarded for different response categories according to the type of statements are given in the table 3

Table 3: Scoring of the positive and negative items.

Items	Category	Respose Category & Scores				
Positive Items	**For Beliefs**	Strongly Agree (5)	Agree (4)	Neither Agree nor Disagree (3)	Disagree (2)	Strongly Disagree (1)
	For Actions	Always Do (5)	Mostly Do (4)	Sometimes Do (3)	Ocassionally Do (2)	Never Do (1)
Negative Items	**For Beliefs**	Strongly Agree (1)	Agree (2)	(U)Neither Agree nor Disagree (3)	Disagree (4)	Strongly Disagree (5)
	For Actions	Always Do (1)	Mostly Do (2)	Sometimes Do (3)	Ocassionally Do (4)	Never Do (5)

The score of an individual is the sum total items scores in all the six areas. Thus the range of scores is from 45 to 225 with higher score indicating the more environmental ethics and vice-versa.

1. Item- Analysis

The individual environmental ethics scores for all the 113 sample subjects were found out and they were arranged from the highest to the lowest score. After this, the constructor took top 27% (31) of the sample- the high scorers, and the bottom 27%(31)- the low scorers. The high and low groups, thus selected, formed the criterion groups.

Their scored responses in terms of weighed scores for each item were worked out. Item analysis was carried out by employing the't' test for each of the 50 statements for the higher and lower group. Thus the significance of difference between the means was worked out to find out the discriminating power of each item; how well each item could distinguish between individuals having different environmental ethics. Only those items, which showed a significant difference between high and low groups at least at .05 level, were selected for inclusion in the final form of the scale. Included items were 1,2,4-14, 17-21, 23-34, 35-49.

Final Draft of the Scale

After item analysis it was found that 45 items were selected and 5 items were rejected. Thus, the final draft of the scale of environmental ethics consisted up of 45 statements in six dimensions was constructed. There were 28 positive items and 17 negative items.

2. Reliability

Reliability refers to the accuracy of the data in the sense of their stability or precision. The reliability values are given in Table 6.

Table 4 Reliability Quotient of Environmental Ethics Scale

Reliability Method	Number of Items	Reliability Value
Cronbach's Alpha	45	0.805

The reliability of the scale was established by the Cronbach's alpha method. The reliability with Cronbach alpha method was found to be 0.805. Therefore the scale possesses adequate reliability.

1. Validity

Validity refers to the degree to which a study accurately reflects or assesses the specific concept that the constructor is attempting to measure. Validity is concerned with the study's success at measuring what constructors set out to measure (Best & Khan, 2009). The scale possesses content validity as it was modified with the valuable opinion of intellectuals in the field of education.

This scale is constructed to know the beliefs and actions of class VI students towards environmental issues. This can also be used for other classes and for research and survey purposes. It is self-administering and does not require the services of highly trained testers. Thus, it is suitable for group as well as individual testing.

REFERENCES

Best & Khan (2009). *Research in Education*. Prentice-Hall of India Pvt. Ltd., New Delhi.

Carayon, A. (2011), Astrrium Remote-Sensing Solutions for environmental applications. alexandre.carayon@spotimage.com.cn

Taj, H. (2001). *Environmental Ethics Scale*. National Psychological Corporation: Agra, India.

Talawar, M.S. & Vijay **Ö**umar, R.(2012)**.** Environmental Ethics among higher secondary students : A comparative study, *Edutracks*, Nov.,2012, *Vol.12-No.3* pp. *39-41*.

"Naturalistic Epistemology," by Chase B. Wrenn, *The Internet Encyclopedia of Philosophy*, ISSN 2161-0002, http://www.iep.utm.edu/envi-eth/, 17/April,2016.

http://www.scienceclarified.com/El-Ex/Environmental-Ethics. html

http://www.conserve-energy-future.com/environmental-ethics.php