

EFFECTIVENESS OF COOPERATIVE LEARNING AND LECTURE DEMONSTRATION METHOD ON DEVELOPING ECOCENTRIC ATTITUDE AMONG SECONDARY SCHOOL STUDENTS

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ABSTRACT

Anthropocentrism and ecocentrism are two ways of understanding an extension of ethics to nature. In an anthropocentric ethic, nature deserves moral consideration because how nature is treated affects humans. In an ecocentric ethic, nature deserves moral consideration because nature has intrinsic value. Ecocentrism focuses on the biotic community as whole and strives to maintain ecosystem composition and ecological processes. Anthropocentrism is the root cause of the ecological crisis, human over population, and the extinction of many non-human species. The understanding of the human – nature relationship affects strongly people's world views and differences in world views determine the way people conceptualise the need for addressing solutions to existing environmental problems. Developing Ecocentric attitude among secondary School students is a challenging task in the hands of teacher in the present society. Hence, the investigator made an attempt to develop Ecocentric Attitude among Secondary School Students by using two different Instructional Strategies, such as Co-operative Learning Strategy and Lecture Demonstration Method. It is an experimental study. Pretest – Post test parallel group design was used to select two Schools for the experimentation. The selected sample 80 were grouped into two and the instructional strategies used were Co-operative Learning strategy and Lecture Demonstration Method. Based on these selected two instructional strategies, the instructional package was developed for the IX Standard Environmental Science Content. The Ecocentric Attitude scale was developed and validated by the investigator and used to collect data. The findings of the study reveals that both the instructional strategies are effective in developing Ecocentric Attitude among Secondary School Students, but Cooperative Learning Strategy proved to be more effective than Lecture Demonstration Method in developing Ecocentric Attitude among Secondary School Students.

Keywords: Cooperative Learning Strategy, Ecocentric Attitude, Lecture Demonstration Method, Secondary School Students.

INTRODUCTION

All living things are dependent on the environment they live. Environment is the totality of all the factors that impact on the life of an organism or organisms. The concept of environmental describes mutual relationships of people, people interactions with other organisms, air, water, soil, underground resources and mutual relation with the climate and the interaction within the framework of this relationship (Keles, and Hamamci, 2009). Anthropocentrism and ecocentrism are two ways of understanding an

extension of ethics to nature. In an anthropocentric ethic nature deserves moral consideration because how nature is treated affects humans. In an ecocentric ethic, nature deserves moral consideration because nature has intrinsic values (Katherine V. Kortenkamp, and Colleen F. Moore, 2001). Eco-centrism is a term used in ecological, political philosophy to denote a nature centred, as opposed to human centred, system of values. The justification for ecocentrism usually consists in an ontological belief and subsequent ethical claim. The ontological belief denies

that there are any existential divisions between human and non-human nature sufficient to claim that humans are either the sole bearers of intrinsic value than non-human nature. On the other hand, if we think "nature has provided us with all the resources for leading a beautiful life and she nourishes us like a mother, we should respect her and nurture her". This is an earth-centric thinking (Anubha Kaushik, and Kaushik P, 2012).

Anthropocentrism and eco-centrism are the two perspectives of human-nature relation. The former focuses in the relations between humans and the universe and confers human's dominance over nature, where they occupy the top of an alimentary chain in the eco-system. The latter aims at the ecosystem itself, where the humans are seen as elements of the biotic community having an attitude of respect for all the elements of that community (Almeida, 2007).

The relationship between two motives underlying environmental attitudes was examined: ecocentrism-valuing nature for its own sake, and anthropocentrism-valuing nature because of material or physical benefits it can provide for humans (Suzanne C. Thompson Michelle A. Barton, 1994).

Today, global environmental problems are seriously perceived in every fields of daily life so people extremely need to gain awareness on this issue. Although bans and laws are effective enough in combating environmental problems, the desired results cannot be reached without changing people's environmental perspectives. Anthropocentric view has brought together many of the major environmental disasters and has led to the destruction and exploitation of nature for the sake of more profit, (Abdullah Karatas, 2016). Environmental education will be able to guide the activities to be performed to prevent environmental problems.

1. Review of the Earlier Studies

Bozdemir, Hafife, and Faiz, Melike (2015) conducted a study on "the Ecocentric, Anthropocentric, and Antipathic Attitudes toward Environment of Prospective Teachers". Nowadays, due to increasing environmental problems, humans make effort to prevent, decrease and eliminate this problem. Individuals have two types of ethical

understanding related to nature which are anthropocentrism and ecocentrism. It was found that prospective teachers' ecocentric and anthropocentric attitudes are close to each other, but antipathic attitudes much lower than the other.

Pedro Pires, et al. (2014) conducted a study "Ecocentric and behavior: A bibliographic review on environmental values". The investigators consulted national and international media (ISI web of key e-scopus). With the available reviews it was concluded that, there is a need for greater effort in national contribution in the field, whereas international scenario faces a scarcity of studies about human development and concrete intervention strategies for the promotion of pro-environmental behaviours.

Liesje Coertjens, Jelle Boeve-de Pauw, Sven De Maeyer, and Peter Van Petegem (2010), conducted a study "Do schools make a difference in their students' environmental attitudes and awareness? evidence from PISA 2006". The cross-sectional Flemish data of the Organisation for Economic Co-operation and Development's Programme for International Student Assessment 2006 (4,999 students in 156 schools) were re-analysed using a multivariate multilevel model to address these issues. Results show that gender, immigrant status, socioeconomic conditions, and educational level are significant in explaining students' environmental attitudes and awareness. Furthermore, the results show that schools do matter; schools in which science is taught in a more hands-on manner are associated with higher student environmental awareness at the same time as environmental learning activities are associated with more pro-environmental attitudes amongst students.

The study conducted by Rout and Agarwal (2006) on environmental awareness and environmental attitude of students at high school level, reveals that the students of science stream have more environmental awareness, an environmental attitude than the students of non-science stream. The students belonging to urban background are comparatively better in terms of their environmental awareness and environmental attitude as compared to the students belonging to rural background.

Abraham and Arjunan (2005) made a study on

Environmental interest of secondary school students in relation to their environmental attitude. The findings of the study shows that a small proportion of the secondary school students have high level of interest in environmental matters. Gender and locale (rural and urban) difference was noticed with respect to environmental interest of secondary school students. There existed high, positive, and significant correlation between environmental interest and environmental attitude of the total sample as well as the subsamples based on gender and locale.

The study conducted by Chan (1996) on environmental attitude and behaviour of secondary school students in Hong Kong, reveals that, students' over-optimism towards technological development and the perceived importance of the benefits of modern consumer goods were major factors that contradicted their concern for the environment.

Singh (1995) developed a video instructional package for creating environmental awareness among secondary school students in Gujarat, Rajasthan, and Uttar Pradesh and made a tryout of the instructional package. The study revealed that the video instructional package developed by Investigator was found significantly effective for the students in developing environmental awareness.

The earlier research studies in the area of Ecocentric Attitude are less in number when compared to that of environmental awareness and environmental attitude. Since ecosystem is having wider meaning and scope whereas environment is a part of the ecosystem, there is an urgent need to conduct research on the ways and means of developing ecocentric attitude among different stakeholders of the society, because only when human beings realize that they are part of ecosystem just like any other living organism, then only they can follow the principle 'live and let live' and this may lead to minimize the exploitation of nature for economic benefits.

2. Rationale for the Study

The ecocentric ethic was concerned by Aldo Leopold and recognizes that all species, including humans, are the product of a long evolutionary process and are inter-related in their life processes.

Ecocentrism focuses on the biotic community as a whole

and strives to maintain ecosystem composition and ecological processes. Anthropocentrism is the root cause of the ecological crisis, human overpopulation, and the extinctions of many non-human species (Arne Naess, 1984, Deep Ecologist).

The understanding of the Human nature relationship affects strongly people's world views (Rehmann-Sutter, 2000) and differences in worldviews determine the way people conceptualize the need for addressing solutions of the existing environmental problems. Esteves (1998) defends that, it is necessary to develop, in each of us and also in the humanity, the sense of responsibility and solidarity through the environment. The main question within ecocentrism is to what extent the "wholeness" of biological systems should be in prior to human interests. For instance, if we were thinking in terms to an extreme, we would save distinct species prior to human beings. Environmental education will be able to guide the activities to be performed to prevent environmental problems. Environmentally conscious generations by environmental education could play an active role in solving environmental problems in the future and in turn developing solid ecocentric attitude in the minds of young generation.

Developing Ecocentric Attitude among Secondary School Students is a challenging task in the hands of teacher in the present society. Using well planned Instructional Strategies may yield better results. The investigator finds it relevant to the study such Instructional Strategies which has a great significance in group interaction among learners which in turn helps to influence other group member as well influenced by himself/herself from the group. It will clearly reveal the scenario of importance of developing Ecocentric Attitude through specially designed Instructional Package. The findings may guide teachers and educationists to device Instructional Packages for the prescribed syllabus by using suitable Instructional Strategies. In the present study, the investigator intends to find the effectiveness of the Instructional Strategies, such as Co-operative Learning and Lecture Demonstration Method on developing Ecocentric Attitude among Secondary School Students.

3. Operational Definitions of the Terms

3.1 Independent Variables

3.1.1 Co-operative Learning

Cooperative learning is an instructional strategy, in which small groups of students work together on a common task. Here, group as well as each group member is individually accountable for part of the task. This instructional strategy employs a variety of learning activities to improve students understanding of a subject.

Co-operative learning is defined as learning environment, where students working together to 'attain' group goals that cannot be obtained by working alone or competitively (Johnson, Johnson, and Holubec, 1986).

In the present study, Cooperative Learning refers to the learning of Environmental science through specially designed Instructional package based on Ecocentric Approach, This was achieved by making the students to learn in the smaller heterogeneous groups of 4-6 as per the task assigned to the group under the guidance of the teacher.

3.1.2 Lecture Demonstration Method

Lecture-demonstration method is a teacher-centred instructional strategy used by the teachers to teach the selected content to specific group of students.

In the present study, Lecture Demonstration Method refers to the teacher-centered Instructional Strategy used by the investigator to transact information on Environmental Science content through specially designed Instructional material on Ecocentric Approach for IX standard Students.

3.2 Dependent Variables

3.2.1 Ecocentric Attitude

It refers to a set of values and feeling of concern for the environment and the motivation of active participation in environmental improvement and protection by considering nature centered than human centered ecosystems.

In the present study, the components of Ecocentric Attitude identified were as follows:

- (i) Environmental Concern.
- (ii) Environmental Values.
- (iii) Environmental commitment.

3.2.1.1 Environmental Concern

Concern and perspective of respondents about the specific relationship between the environment related issues and problems in the present society.

3.2.1.2 Environmental Values

It represents basic and general form of environmentalism. It indicates respondents' general perceptions about the environment relationships between the environment, economic growth, and effects of science and technology on the environment.

3.2.1.3 Environmental Commitment

It represents values of respondent's about commitment issues for better environmental quality. Environment commitment issues might include,

- Willingness to reduce living standards to achieve a higher environmental quality.
- Willingness to use eco-friendly products for better environmental protection.

4. Objective of the Study

- To study the effectiveness of Cooperative Learning Strategy in developing Ecocentric Attitude among secondary school students by taking Intelligence as Co-variate.
- To study the effectiveness of Lecture Demonstration Method in developing Ecocentric Attitude among secondary school students by taking Intelligence as Co-variate.
- To compare the effectiveness of the Cooperative Learning Strategy and Lecture Demonstration Method in developing Ecocentric Attitude among secondary school students by taking Intelligence as Co-variate.

5. Hypotheses of the Study

H_{01} : There is no significant difference in the Ecocentric Attitude among Secondary School Students taught through Lecture Demonstration Method after partialling out the effect of Intelligence.

H_{02} : There is no significant difference in the Ecocentric Attitude among Secondary School Students taught through Cooperative Learning Strategy after partialling out the effect of Intelligence.

H_{03} : There is no significant difference in the effectiveness of Cooperative Learning and Lecture Demonstration Method in developing Ecocentric Attitude among Secondary School Students after partialling out the effect of Intelligence.

6. Methodology

It is an experimental study. All the secondary school students of Bangalore City were the population of the study. Pretest – Post test parallel group design was used to select two schools for the experimentation. The selected sample 80 were grouped into two (40 + 40) and the methods of teaching used were Co-operative Learning and Lecture Demonstration Method.

6.1 Tools used in the Study

The data related to the variables of the study was collected by administering the following tools,

- (i) Eco-centric Attitude Scale prepared and validated by the investigator.
- (ii) Intelligence Test- 'Raven's Progressive Matrices' constructed and standardized by J.C. Raven and J.H. Court.
- (iii) Instructional Package in Environmental Science using Co-operative Learning and Lecture Demonstration Method on the selected units from IX Standard Science textbook of Karnataka State Syllabus for the experimental study.

6.2 Statistical Techniques used

The analysis and interpretation of the study has been done using descriptive statistics, such as mean, standard deviation, and Inferential statistics: t-test, 'F' ratio, and ANCOVA.

7. Data Analysis

7.1 Analysis and Interpretation of Objective One

7.1.1 Comparison of Pre-test and Post-test Scores of Ecocentric Attitude in Lecture Demonstration Method

No. of Students	Level	Mean	SD	t-value	Results
40	Pre-test	243.94	33.42	22.11	Significance 0.01 level
	Post-test	412.70	34.84		

Table 1. Mean, Standard Deviation, and t-value of Pretest and Post test Scores of Ecocentric Attitude of Secondary School Students in Lecture Demonstration Method

Group

From Table 1, it was observed that the mean score of Pretest and Post test in Ecocentric Attitude of Lecture Demonstration Method are 243.94, and 412.70, respectively. The obtained value of t ($t= 22.11$; $P>0.01$) is significant at 0.01 level of significance. It indicates that there is a significant difference between the mean of pre-test and post test scores of Ecocentric Attitude in Lecture Demonstration Method group. It indicates that implementation of instructional package based on Lecture Demonstration Method played significant role in developing Ecocentric Attitude among Secondary School Students. Hence the Hypothesis, 'There is no significant difference in the Ecocentric Attitude among Secondary School Students taught through Lecture Demonstration Method after partialling out the effect of Intelligence' was rejected and alternative hypothesis was accepted.

7.2 Analysis and Interpretation of Objective Two

7.2.1 Comparison of Pre-test and Post-test Scores of Ecocentric Attitude in Co-operative Learning Group

From Table 2, it was observed that the mean score of Pretest and post test in Ecocentric Attitude of Co-operative Learning are 243.12, and 444.10, respectively. The obtained value of t ($t= 25.70$; $P>0.05$) is significant at 0.05 level of significance. It indicates that there is a significant difference between the mean of pre-test and post test scores of Ecocentric Attitude in Co-operative Learning group. It indicates that implementation of instructional package based on Cooperative learning strategy played significant role in developing Ecocentric Attitude among Secondary School Students. Hence the hypothesis, 'There is no significant difference in the Ecocentric Attitude among Secondary School Students taught through Cooperative Learning Strategy after partialling out the effect of Intelligence' was rejected and alternative hypothesis was accepted.

No. of Students	Level	Mean	SD	t-value	Results
40	Pre-test	243.12	37.36	25.70	Significance at 0.01 level
	Post-test	444.10	32.48		

Table 2. Mean, Standard Deviation, and t value of Pretest and Post test scores of Ecocentric Attitude of Secondary School Students in Cooperative Learning Group

7.3 Analysis and Interpretation of Objective Three

7.3.1 Comparison of Post test scores of Ecocentric Attitude in the Co-operative Learning and Lecture Demonstration Method

As per the design, investigator administered post test of Ecocentric Attitude scale after the experimental treatment. The mean, standard deviation, and t- value was found out and tested for significance of difference. The details are presented in Table 3.

From Table 3, it is observed that the mean of the post test Ecocentric attitude of Secondary School Students in Cooperative Learning strategy and Lecture Demonstration Method are 444.1 and 412.7, respectively. The obtained value of t- value ($t=4.23$; $P<0.05$) is significant at 0.05 level of significance. This shows that there exists significant difference between post-test Ecocentric Attitude scores of Co-operative Learning and Lecture Demonstration Method group. Since the mean of the post-test scores of the Co-operative Learning group was (444.1) greater than that of the Lecture Demonstration Method (412.7). It can be interpreted that the Co-operative Learning strategy is efficient in developing Ecocentric Attitude among secondary school students.

7.3.2 Comparison of Mean Gain Scores of Ecocentric Attitude in Co-operative Learning and Lecture Demonstration Method Group

In order to ascertain the effectiveness of the instructional strategy of Ecocentric approach in developing Ecocentric Attitude, the test of significance for the mean gain scores of the two strategies are computed. The data and results of test of significance are given in Table 4.

From Table 4, it is observed that the mean gain scores of the Co-operative Learning and the Lecture Demonstration Method are 147.92 and 128.4, respectively. The obtained

Instructional Strategies	N	Mean	SD	t-value	Results
Cooperative Learning Strategy	40	444.1	32.47	4.23	Significant at 0.05
Lecture Demonstration Method	40	412.7	34.83		

Table 3. Test of Significance for the Difference between the Mean Post-test Scores of Ecocentric Attitude of the Secondary School Students in Co-operative Learning and Lecture Demonstration Method Group

t-value ($t=2.01$; $P<0.05$) is significant at 0.05 level. This shows that there exists significant difference between the mean gain scores of Co-operative Learning strategy and Lecture Demonstration Method group. It leads to the conclusion that the scores of the Co-operative Learning strategy group are significantly greater than that of the Lecture Demonstration Method group. It can be interpreted that, Co-operative Learning strategy is more effective than Lecture Demonstration Method for developing Ecocentric Attitude.

Since the sample selected for the study having a slight difference in the means of the pre-test scores, it was difficult to ascertain whether the difference between the pre-test and post test scores were because of the experimental treatment or due to other variables. In order to obtain greater accuracy, it became necessary that the scores had been analysed using the technique of Analysis of Covariance (ANCOVA) for comparison. The details of the analysis of the data are presented in the following sections.

7.3.3 Comparison of the Total Ecocentric Attitude Scores of the Co-operative Learning Strategy and the Lecture Demonstration Method Group using Analysis of Covariance (ANCOVA) by taking Intelligence as Co-variate

ANCOVA was used for analyzing the data in order to effect adjustments in the final or terminal scores to determine the relative superiority of the instructional strategies of ecocentric approach used in the study. The sum of squares, mean squares, variances, and F-ratio for the pre-test and post test scores of the two groups were calculated. The details of the analysis of variances were given in Table 5.

Table 5 shows that the obtained value of F value for the adjusted post-test scores of Ecocentric Attitude is 14.38. It indicates that the two groups in final mean scores of Ecocentric Attitude differ significantly after they have been adjusted for difference in their post test scores. The data for

Instructional Strategies	N	Mean	SD	t-value	Results
Cooperative Learning Strategy	40	147.92	36.49	2.01	Significant at 0.05
Lecture Demonstration Method	40	128.4	49.05		

Table 4. Test of Significance for the Difference Between the Mean Gain Scores of the Co-operative Learning Strategy and Lecture Demonstration Method

Source	Sum of Squares	df	Mean Square	F	P-Value	Results
IQ	7403.444	1	7403.444	6.901	0.010	Significant at 0.01 level
Instructional Strategies	16728.634	1	16728.634	14.386	<0.001	Significant at 0.01 level
Error	83720.446	77	1087.279			

Table 5. Summary of Analysis of Covariance of Mean Ecocentric Attitude scores of the Co-operative Learning Strategies and the Lecture cum Demonstration Method by taking Intelligence as Co-variate

Group	My	My.x (Adjusted)	Mean Difference	Standard Error	t-value	Results
Co-operative Learning	444.1	443.44	29.29	7.46	3.92	Significant at 0.05 level
Lecture-Demonstration Method	412.7	414.24				

Table 6. Adjusted Mean scores of Ecocentric Attitude of the Co-operative Learning Strategy and Lecture Demonstration Method

adjusted 'y' means of post-test scores of students in Co-operative Learning and that of Lecture Demonstration method are given in Table 5.

7.3.4 Comparison of Adjusted Mean Scores

The adjusted means for the post-test ecocentric attitude scores (y-means) of secondary school students in Co-operative Learning strategy and Lecture Demonstration Method were computed. The difference between the adjusted 'y' means was tested for significance. The data is given in Table 6.

From Table 6, it is observed that the Adjusted y-means for post-test scores are tested for significance with degree of freedom 1 and 77. The obtained t-value is 3.92 and the table value for significant difference for degree of freedom 1 and 77 was 1.96 at 0.05 level ($t=3.92; P<0.05$). The significant difference between the adjusted y means of post-test scores of Ecocentric Attitude indicates that students of Co-operative Learning strategy group and Lecture Demonstration Method group differ significantly in their Ecocentric Attitude. The mean of the post-test Ecocentric Attitude Scores of Co-operative Learning strategy and Lecture Demonstration Method group clearly shows that the Co-operative learning was significantly effective in developing Ecocentric Attitude among Secondary School Students. Therefore it may be

interpreted that the Co-operative Learning strategy is more effective than the Lecture Demonstration Method in developing Ecocentric Attitude among Secondary School Students. Hence the hypothesis, 'there is no significant difference in the effectiveness of Cooperative Learning and Lecture Demonstration Method in developing Ecocentric Attitude among Secondary School Students after partialling out the effect of Intelligence' was rejected and alternative hypothesis was accepted.

8. Results of the Study

Pretest and Post test scores of Ecocentric Attitude in Lecture Demonstration Method group differ significantly among Secondary School Students after partialling out the effect of Intelligence. Hence the Hypothesis, 'There is no significant difference in the Ecocentric Attitude among Secondary School Students taught through Lecture Demonstration Method after partialling out the effect of Intelligence' was rejected and Alternative hypothesis, 'There is a significant difference in the Ecocentric Attitude among Secondary School Students taught through Lecture Demonstration Method after partialling out the effect of Intelligence' was accepted.

Pretest-Post test scores of Ecocentric Attitude in Cooperative Learning group differ significantly among Secondary School Students after partialling out the effect of Intelligence. Hence the Hypothesis, 'There is no significant difference in the Ecocentric Attitude among Secondary School Students taught through Cooperative Learning Strategy after partialling out the effect of Intelligence' was rejected and Alternative hypothesis, 'There is a significant difference in the Ecocentric Attitude among Secondary School Students taught through Cooperative Learning Strategy after partialling out the effect of Intelligence' was accepted.

Instructional Strategies, such as Co-operative Learning and Lecture Demonstration Method differ significantly in developing Ecocentric Attitude among Secondary School Students after partialling out the effect of Intelligence. Cooperative Strategy was found to be more effective in developing Ecocentric Attitude when compared to that of Lecture Demonstration Method. Hence the hypothesis, 'There is no significant difference in the effectiveness of

Cooperative Learning and Lecture Demonstration Method in developing Ecocentric Attitude among Secondary School Students after partialling out the effect of Intelligence' was rejected and alternative hypothesis, 'There is a significant difference in the effectiveness of Cooperative Learning and Lecture Demonstration Method in developing Ecocentric Attitude among Secondary School Students after partialling out the effect of Intelligence' was accepted.

9. Findings of the Study

- The Pretest and Post test results of Co-operative Learning and Lecture Demonstration Method group indicates that both the Instructional Package based on Co-operative Learning and Lecture Demonstration Method found to be effective in developing Ecocentric Attitude among Secondary School Students.
- Instructional Strategies, such as Co-operative Learning and Lecture Demonstration Method show differential effect in developing Ecocentric Attitude among Secondary School Students after partialling out the effect of Intelligence.
- Cooperative Strategy was found to be more effective in developing Ecocentric Attitude than Lecture Demonstration Method.

10. Educational Implications

- Instructional package developed based on Co-operative Learning and Lecture Demonstration Method found to be effective in developing Ecocentric Attitude among Secondary School Students. In this regard, teachers should be motivated to use different Instructional strategies in the process of teaching - learning.
- Secondary School Teachers should be provided training on preparation of Instructional package based on different Instructional Strategies in general and Cooperative Learning in particular. The findings of the study conducted by Daniela Pavan and Fabrizio Santini (2013) reveal that co-operative learning can be an ideal vehicle for achieving the goals of Education for Sustainable Development.
- Environmental Science related content in the Secondary School Science Syllabus should be taught with

at most care to develop Ecocentric Attitude among Students which goes long way in protecting and preserving our existing ecosystem for the future generation. With respect to this, the findings of the study conducted by Vijayakumari and Umashree (2016) reveal that environmental education should include not only teaching environmental related issues and skills, but also the development of favorable values, attitude and skills which in turn empower children to work for environment and its sustainability.

- Both pre-service and in-service teacher training programmes should give more emphasis on training teachers to develop Ecocentric Attitude among themselves and in turn they can develop among Students.
- Even though it is hard to find studies related to effectiveness of Instructional Strategies in developing Ecocentric Attitude among Secondary School Students. There were studies related to Environmental Attitude. Findings of the research study conducted by Alexandar R. (2012) revealed that active teaching learning approach in Environmental Education for Sustainable Development (EESD) programme, significantly improved knowledge, attitude and skills among Secondary School Students with special emphasis reference to air, water, biodiversity, conservation, and solid waste management.
- The multiple teaching learning approaches will have an effect on the student's attitudes towards conserving and protecting the local precious natural resources. The present study was an evident that different Instructional Strategies developed differential effect on developing Ecocentric Attitude among Secondary School Students.

Conclusion

Globally, educational institutions are under great pressure to adopt innovative instructional strategies in the teaching and learning process, to prepare students to meet various demands exerted from the changing society. Among the various demands from the society, environmental problems related to pollution, preservation, and management of natural resources is one of the major issues need to be attended by different agencies in general and educational institutions in particular. In this regard, the present study made an attempt to find out the

suitable instructional strategies which teachers can make use to develop Ecocentric Attitude among Secondary School Students. The findings of the study clearly reveal that the specially designed instructional material based on Co-operative Learning Strategy proved to be effective in developing Ecocentric Attitude among Secondary School students than traditional Lecture Demonstration Method. It is important that teachers should be trained to adopt innovative instructional strategies in their teaching styles to provide opportunity for young aspiring students to develop desirable attitude towards environment.

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