

# EFFECTIVENESS OF AN ACTIVITY BASED LEARNING ON ATTITUDE OF STUDENTS TOWARDS EDUCATION FOR SUSTAINABLE DEVELOPMENT

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The aim of this study was to investigate the effect of activity-based learning on the attitude of students towards education for sustainable development. The present study was quasi-experimental in nature, conducted with the help of pre-test and post-test control group design. There were 99 participants in this study, with experimental and control groups comprising 50 and 49 students respectively. While the experimental group was taught with the help of activity-based learning, the control group learnt with the help of traditional method of teaching for the duration of four weeks. Attitude towards Education for Sustainable Development Scale was used as pre-test and post-test. The findings suggested that the activity-based learning given to the experimental group had a significantly positive effect on the attitude of students towards education for sustainable development.

**Keywords:** Education for Sustainable Development, Activity-based Learning and Attitude

## Introduction

Unscientific materialism, global consumerism, population explosion, deforestation, unchecked consumption of natural resources, the resultant pollution, climate change and the depletion of ozone layer are some of the humanities unsustainable practices that have threatened our peaceful co-existence with the ecological systems. Humans have degraded the fragile environment beyond repair (Hopkins, 2010). Education for sustainable development is the only efficient tool to bring about the modification in the attitudes and ethical behaviours of contemporary learners towards sustainable future. Education for sustainable

development is the impetus for change in this paradigm shift of knowledge, attitude, awareness and skills. McKeown (2002), observed that the proponents of sustainable development (SD) had realised there could be no sustainable development in the world if teachers were not trained in such a way that skills, knowledge, attitudes and values that enhanced sustainability were inculcated in teachers during training, and these be transmitted to the students and consequently, the society at large. The seed of Sustainable Development germinated with the conception of the World Commission on Environment and Development in 1983, by the United Nations, which propelled the report of the World Commission on Environment and

Development (Brundtland, 1987), popularly known as the Brundtland Report, entitled 'Our Common Future', which gave one of the original descriptions of sustainable development as "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs." The articulation of the education for sustainable development in three domains or pillars, i.e., economic, environmental and social sustainability, was developed in the second half of the 1980s. UNESCO-UNEP (1996), outlined the following five components of education for sustainable development, whose objectives are to improve awareness, knowledge, attitudes, skills and participation.

Experiential learning has been reported to be effective in making the attitude of students more favourable towards education for sustainable development. Interventions involved in this experiential learning have been established to be comprising of open-air photo exhibition (Zachariou and Valanides, 2006); training in cognitive and conceptual maps (Lourdel *et al.*, 2007; Segalàs *et al.*, 2008), CD programme and peer groups with diagnostic analysis (Sonwane, 2010); course on sustainable development (Andersson, Jagers, Lindskog, and Martinsson *et al.*, 2013); field trips (Güler and Afacan, 2013), teacher training workshop in sustainable development (Ray *et al.*, 2013), educational pedagogy for sustainability based on experiential and problem-based methods for sustainability (Redman, 2013), brief and focused seminar (Wilson, 2014), sustainability focused science programme (Payne, 2015) and outdoor education (Jeronen *et al.*, 2016). Qualitative betterment of education is feasible only through improvement in the quality of

instruction. Although India has made great advancements in the field of educational technology yet the methods of teaching rampant in actual classroom situations remain highly conventional. Whereas activity-based learning not only assists in rekindling the inquisitiveness, stirring the learning acquisition process and awakening the intellect of the learners; but also leads to effectiveness in the teaching-learning process by replacing the monotonous classroom teaching with vigorous instruction. Hence, to recognise the alarming need for enhancing favourable attitudes towards sustainable development, the present study is focused on measuring the effectiveness of activity based-learning on the attitude of students towards education for sustainable development.

## Methodology

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### Research Design

The present study was quasi-experimental in nature, conducted with the help of pre-test and post-test control group design.

### Sample

The sample of the study comprised 99 students studying in Class IX of a Senior Secondary School in Patiala district of Punjab (India). Experimental and control groups comprised 49 and 50 students, respectively.

### Tool Used

Attitude towards Education for Sustainable Development Scale (AESDS) prepared by the researcher was used as a pre-test and post-test to determine the attitude of students towards education for sustainable development. The final draft of AESDS contained 38 items, structured on a 5-point

continuum ranging from 'strongly agree' to 'strongly disagree'. Positively worded statements were scored in order of 5 to 1 and vice-versa. The scale had a total score ranging from 38–190, with the higher score on the scale reflecting favourable attitude towards education for sustainable development and vice-versa. The test-retest reliability was calculated and found out to be 0.99 with internal consistency reliability using Spearman and Brown Formula found out to be 0.95. Content validation of the AESDS was done while preparing the preliminary draft of the scale, with the help of expert opinion of teacher-educators and language specialists with regard to the relevance of each item in the scale, establishing the scale to be a reliable and valid measure.

### Conduct of the Study

The study was conducted in three phases. In the first phase, prior to the pre-testing, an informal session with the students was carried out, with the purpose of building a rapport. During the pre-testing, AESDS was administered on the students of both the

small group activities, role-playing, story-telling, group discussions, and lectures, to name a few. The control group was taught with the help of traditional method of teaching. Post-experimental testing was done after the execution and completion of the activity-based learning with the help of AESDS.

### Findings, Discussion and Recommendations

In order to see whether the activity-based learning had any significant effect on the attitude of students towards education for sustainable development, ANCOVA was applied, keeping pre-test attitude towards education for sustainable development scores as a covariate. The summary of the results of analysis of covariance of experimental and control groups of students has been presented in Table 1.

It is apparent from Table 1 that F-value, testing significance of the effect of activity-based learning on adjusted mean attitude towards education for sustainable

**Table 1: Summary of the Results of Analysis of Covariance on Attitude towards Education for Sustainable Development Scores of Experimental and Control Group of Students**

Source of Variation	df	Sum of Squares	Mean Square	SD <sub>y.x</sub>	F-value
Among Means	1	4645.74	4645.74		51.77**
Within Groups	96	8614.20	89.73	9.47	
Total	97	13259.94			

\*\* $p \leq 0.01$

groups. In the second phase, the activity-based learning was executed in four weeks. The major techniques to be used to impart education for sustainable development were

development score of adolescents of both the experimental and control groups came out to be 51.77, which is significant at 0.01 level. This indicates that treatment given to the

experimental group had a significantly positive effect on the attitude of adolescents towards education for sustainable development.

Table 2 presents the pre-test, post-test and adjusted mean attitude towards education for sustainable development scores of both the groups.

Segalàs *et al.* (2008), training of students in cognitive and conceptual maps indicated the effectiveness of these pedagogical strategies in education for sustainable development. Ray *et al.* (2013), reported a statistically significant increase in the attitudes of teachers towards sustainability education.

**Table 2: Pre-test, Post-test and Adjusted Mean Attitude towards Education for Sustainable Development Scores of Experimental and Control Groups of Students**

Group	N	Pre-test Mean	Post-test Mean	Adjusted Mean
Experimental	50	127.94	162.46	162.87
Control	49	129.12	149.59	149.17
General Means		128.53	156.09	156.02

**\*\* $p \leq 0.01$**

It may be observed that the adjusted mean attitude towards education for sustainable development score of adolescents of experimental group (162.87) was significantly greater than the adjusted mean attitude towards education for sustainable development score of the control group of adolescents (149.17) on post-test, showing greater attitude towards education for sustainable development scores for adolescents of experimental group as compared to the control group of adolescents.

These findings agree with the results of the previous studies where activity-based learning was found to have a significant effect on the attitude of students towards education for sustainable development. Zachariou and Valanides (2006), found that an outdoor programme in the form of an open-air photo exhibition enhanced the primary student teachers' attitudes towards sustainable issues. In another study by Lourdel *et al.* (2007), and

Wilson (2014), demonstrated that a limited education for sustainability intervention in the form of a brief and focused seminar can be impactful in changing the students' attitudes towards sustainability education in a positive direction. In another experimental study, Jeronen *et al.* (2016), used outdoor education as an intervention for promoting sustainability and reported that it led to positive attitudinal changes in the students towards sustainability.

In the present study, activity-based learning was found to be effective in making the adolescents' attitudes more favourable towards education for sustainable development as it sustained the interest of the students' in teaching. Therefore, the curriculum planners must incorporate such interventions, learning packages, modules and instructional packages in the curriculum of school education itself. Furthermore, teachers should facilitate the tenets of

education for sustainable development in their teaching routine so that, the adolescents may develop favourable attitudes towards ESD and its three dimensions. This will be possible only if the teachers have the right orientation in the respective concept as without training in sustainability education, teachers will hardly be able to teach this topic. As Estrada-Vidal

and Tójar-Hurtado (2017), remarked, attitudes must be reoriented regarding preferential consumption of those that have been made locally and under the least environment threatening conditions, fostering of fair trade and reducing the environmental impacts derived from commercial activities.

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