



## Video-Based Teaching in Environmental Education

**E. Lavanya  
Priyadarshini**

Ph.D Research Scholar, Department of Education, Avinashilingam Institute for Homescience and Higher Education for Women, Coimbatore, Tamilnadu, India.

### ABSTRACT

The present study focuses on the effectiveness of video-based teaching to impart environmental awareness among secondary students. A sample of 300 students was drawn from three types of schools namely, Government, Government Aided and Corporation schools in and around Coimbatore. Pretest posttest control group design was adopted. The data was collected by means of administering an achievement test to the experimental and control groups. The findings of the study revealed the fact that the experimental group which was exposed to video-based teaching had scored higher in the posttest when compared to the control group. It is therefore recommended that the usage of videos in environmental lessons would enhance the learning potential of secondary students.

### KEYWORDS

environmental awareness, video-based teaching, achievement, effectiveness

### Introduction

Educational technology places emphasis on communication skills and approaches to teaching and learning, through the sensible use and integration and coordination of different types of media. Scholars in the field of education have for a long time examined the uses of innovative technologies in education. They examine all aspects such as direct student learning and efficient management of institutions of learning. As in all areas of applied technology, the field of educational technology studies how theoretical knowledge and scientific principles of learning can be applied to learning problems that arise in a classroom. Experts in educational technology seek new and effective ways of organizing the teaching and learning process through the best possible application of technological appliances. These activities rely upon a body of knowledge for successful and ethical implementation, rather than routine tasks or isolated technical skills. An attempt was made in the present study to assess the effectiveness of video-based teaching in imparting environmental awareness among secondary students.

### Objectives of the Study

- To prepare a documentary video on environmental awareness for IX standard students.
- To develop an achievement test on environmental awareness for IX standard students.
- To compare the effectiveness of video-based teaching with the conventional method of teaching on the achievement of IX standard students.

### Hypotheses Framed for the Study

There is no significant difference between the pretest and posttest scores of students instructed through video-based teaching and conventional teaching.

There is no significant difference between the pretest and posttest scores of students of government, government aided and corporation schools instructed through video-based teaching and conventional teaching.

### Preparation of Video for the Study

Movies and videos help in making a class lively and enhancing the visual memory of learners. Using video in the classroom is an excellent means of interactive instruction as it is a very flexible medium in teaching and learning new concepts.

A documentary video was prepared by the investigator, explicitly relating to the concepts of environmental degradation and the measures to check environmental issues that are a great cause of concern in the present world. Visuals from the internet which portrayed the massive destruction of the earth slowly over time were used for creating this documentary video. The video contained a clear portrayal of the concepts of environmental issues. It was supported by a digitized background voice given by the investigator. This documentary video was for 25 minutes.

### Methodology

Quasi experimental method was used in the present study. Pretest-Posttest and control group design was used. The investigator applied purposive and systematic random sampling technique for selecting the sample for the present study. Six schools were selected for the study by purposive sampling method. A sample of 300 students was selected from Government, Government-Aided and Corporation schools in and around Coimbatore. The experimental and control groups each had 150 students. The experimental group was instructed through a documentary video on environmental awareness. The control group was instructed through conventional teaching.

### Variables

Various research studies reveal the fact that independent variables such as methods of teaching, type of school, locality and gender have a significant impact on achievement. An attempt was made in the present study to examine the effect of the type of school on achievement.

### Tools used for the Study

A self-constructed achievement test was used for the collection of data. The test was for 50 marks. It was designed to assess the awareness of students on environmental issues before and after the treatments. Reliability and validity of the tool were established.

### Findings of the Study

The effectiveness of video-based teaching was studied by comparing the corresponding means of pretest and posttest scores using the 't' test and the values are given in Table 1.

**Table 1: Comparison of Pretest and Posttest Scores of Students Taught Through Different Methods of Instruction**

Method	Pretest			Posttest		df	't' value
	No.	Mean	S.D	Mean	S.D		
DV	150	17.30	5.04	29.18	7.12	149	18.7433**
Conventional	150	15.83	6.33	27.26	6.66	149	13.2761**

\*\* Significant at 0.01 percent level

**DV- Documentary Video-based teaching**

The above table shows that the 't' value of the samples indicated a significant difference between the pretest and posttest scores at 0.01 level of confidence in the group instructed through Documentary Video-based teaching(18.7433). There was significant difference between the pretest and posttest scores in the group taught through Conventional teaching (13.2761). It was evident that the posttest mean scores for the group instructed through Documentary Video-based teaching was higher (29.18) than for Conventional teaching (27.26). The higher posttest mean scores may be due to the videos and images used which had helped the students in retention. Hence, the hypothesis stated as, ***"There is no significant difference between the pretest and posttest scores of students instructed through video-based teaching and conventional teaching"*** was rejected. This is in congruence with Harness et al. (2011) who conducted a study on environmental education through film project. They found that teaching environmental concepts to the children through films was more effective than teaching by conventional method.

Table 2 shows the comparison of pretest and posttest means of students from government schools taught through different methods of instruction.

**Table 2: Comparison of Pretest and Posttest Scores of Students of Government Schools Taught Through Different Methods of Instruction**

Method	Pretest			Posttest		df	't' value
	No.	Mean	S.D	Mean	S.D		
DV	50	17.60	6.05	34.16	6.07	49	13.6633**
Conventional	50	17.78	6.62	25.63	6.34	49	6.0557**

\*\*Significant at 0.01 percent level; DV- Documentary Video-based teaching;

The 't' value of the samples taken in government schools indicated a significant difference between the pretest and posttest scores at 0.01 level of confidence in the group instructed through Documentary Video-based teaching (13.6633). There was significant difference between the means of pretest and posttest scores in the group taught through conventional teaching (6.0557). The group exposed to Documentary Video-based teaching had recorded the highest posttest mean scores (34.16). The group exposed to Conventional teaching recorded a lesser score (25.63) when compared to the group taught through documentary video-based teaching. The use of videos in teaching proved to be more effective by improving students' comprehension on environmental awareness.

Hence, the hypothesis stated as ***"There is no significant difference between the pretest and posttest scores of students of government schools instructed through video-based teaching and conventional teaching"*** was rejected.

This is in accordance with the study of Jennifer et al. (2011) who established the fact that video podcasts were more effective in supporting learning and teaching on the course, largely by offering a flexible and visual learning experience than conventional teaching.

Table 3 shows the pretest and posttest scores of students from government aided schools taught through different methods of instruction.

**Table 3: Comparison of Pretest and Posttest Scores of Students of Government Aided Schools Taught Through Different Methods of Instruction**

Method	Pretest			Posttest		df	't' value
	No.	Mean	S.D	Mean	S.D		
DV	50	17.90	5.92	34.90	6.61	49	13.5469**
Conventional	50	15.48	5.16	22.52	5.21	49	6.7887**

\*\* Significant at 0.01 percent level

**DV- Documentary Video-based teaching**

The 't' value of the samples taken in government aided schools indicated a significant difference between the pretest and posttest scores at 0.01 level of confidence in the group instructed through Documentary Video-based teaching(13.5469). There was significant difference between the means of pretest and posttest scores in the group taught through conventional teaching (6.7887). The posttest mean score for the group instructed through Documentary Video-based teaching was the highest (34.90). Conventional method seemed to be not as effective as video-based teaching, as it is evident from the posttest mean score (22.52) which is the lowest of the two methods of instruction. Students exposed to the video-based teaching seemed to enjoy the class and thus had improved concentration. Hence, the hypothesis stated as ***"There is no significant difference between the pretest and posttest scores of students of government aided schools instructed through video-based teaching and conventional teaching"*** was rejected.

This is in congruence with the findings of Cheung (2013) who found that technology-based teaching methods generally produced a positive effect in comparison to traditional methods.

Table 4 shows the pretest and posttest scores of students from corporation schools taught through different methods of instruction.

**Table 4 Comparison of Pretest and Posttest Scores of Students of Corporation Schools Taught Through Different Methods of Instruction**

Method	Pretest			Posttest		df	't' value
	No.	Mean	S.D	Mean	S.D		
DV	50	15.96	4.62	30.98	6.84	49	12.8673**
Conventional	50	16.10	5.32	23.08	5.26	49	6.5972**

**\*\* Significant at 0.01 percent level**

**DV- Documentary Video-based teaching**

The 't' value of the samples taken in corporation schools indicated a significant difference between the pretest and posttest scores at 0.01 level of confidence in the group instructed through Documentary Video-based teaching(12.8673). There was significant difference between the pretest and posttest scores in the group taught through conventional teaching (6.5972). When the posttest mean scores were compared, it was found that the group taught through Documentary Video-based teaching was significantly higher (30.98). The lowest posttest mean score was observed for the group taught through Conventional teaching (23.08). Video-based teaching method gained advantage over the conventional method due to the fact that it helped in increasing interactivity among the students and thus had improved their achievement.

Hence, the hypothesis stated as: ***"There is no significant difference between the pretest and posttest scores of students of corporation schools instructed through video-based teaching and conventional teaching"*** was rejected.

This is in accordance with Ulf Fredriksson and et al. (2008) who found that use of ICT in education was found to bring a number of benefits to learning thus improving learning

outcomes. Regarding teaching processes and teachers it was found that enthusiasm and collaboration seemed to increase when using ICT.

### Conclusion

Growing emphasis on environmental education in the present day places demands on the educators to make their teaching more interesting and appealing. A variety of appropriate experiences should be given to students, so they could understand the complexities of the environment they are in. In the present study, it is proved beyond doubt that with the usage of videos in teaching, positive action would result. The performance of students who were exposed to video-based teaching had improved dramatically in all the three types of schools. Therefore, using a variety of instructional styles and methodologies in environmental education in India is highly recommended.

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