EFFECTIVENESS OF MULTIMEDIA PROGRAMME IN TEACHING ENVIRONMENTAL EDUCATION – A STUDY

Research Paper

ABSTRACT

The present study tries to find out the effectiveness of the computer multimedia assisted teaching of environmental education at the secondary level. The study was conducted to develop a multimedia programme for the teaching of environmental education and experimenting the same with a set of children studying in the ninth standard and finding out its effectiveness over the conventional method of teaching. Pre-test, post-test equivalent groups design was followed for this study. The results show that the multimedia programme prepared by the researcher is more effective for the achievement of the objectives of environmental education of ninth standard students. The students learning through multimedia programme are found to be better than the students learning through the conventional method of teaching.

INTRODUCTION

In a vast country like India, enormous developmental work is now being done in the field of education but it has still not been possible to equip each and every primary and secondary school with all the facilities for teaching. Multimedia enables students get a live vision of life's aspects and scientific factors. Any diagram can be explained in detail with 3D effect; it helps the student to understand the lessons clearly. Keeping in mind the above-mentioned factors the investigator felt it appropriate to prepare multimedia software for the teaching of environmental education included in the IX standard syllabus.

OBJECTIVES

The study had the following objectives:

★ To prepare a multimedia package for the teaching of environmental education at secondary level.

★ To find out the effectiveness of computer multimedia program in the teaching of environmental education at the secondary level.

★ To compare the effectiveness of computer multimedia programs in the teaching of environmental education with that of the traditional method of teaching environmental education.

HYPOTHESES

The following null hypotheses were formulated.

★ There is no significant difference between the experimental group and the control group in the learning of environmental education at the pre-test level.

★ There is no significant difference between the experimental group and the control group in the learning of environmental education at the post-test level.

★ There is no significant difference between the pre-test and post-test scores as regards learning of environmental education by the experimental group.

★ There is no significant difference between the pre-test and post-test scores as regards learning of environmental education by the control group.

SAMPLE

The sample of the study consisted of 60 students studying in ninth standard under the Matriculation syllabus at Chennai District, Tamil Nadu. The sample included both boys and girls.

TOOLS USED

The following tools were used for the study:

★ A multimedia programme developed by the investigator for the teaching of the concepts in environmental education included in the IX standard syllabus.

★ An achievement test in environmental education constructed and validated by the researchers.

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DEVELOPMENT OF MULTIMEDIA

The multimedia program was developed in Macromedia flash version 6.0. It provided a multimedia platform to attract the senses of the learner for easy and happy learning. The environmental education lesson of 9th standard was broken down into 75 small learning modules. All the learning modules were arranged logically based on psychological principles of learning i.e., proceeding from easy to difficult, simple to complex and from the known to the unknown. The experimental design was adopted. For the experimentation, a pre-test was conducted and the sample was divided into two groups viz., the experimental group and the control group. The students of the experimental group were taught with the computer multimedia program and the control group through the conventional method. After the treatment period the post-test was administered. The collected data were subjected to statistical analysis and the results obtained were interpreted.

TESTING OF HYPOTHESES

Hypothesis 1

There is no significant difference between the experimental group and the control group in the learning of environmental education at the pre-test level.

't' test was applied to test the significance of difference between the mean achievement test score of the experimental group and that of the control group at the pre-test level.

Table 1

MEAN ACHIEVEMENT TEST SCORE OF THE EXPERIMENTAL GROUP COMPARED WITH THAT OF THE CONTROL GROUP AT THE PRE-TEST LEVEL.

Groups	N	Mean	S.D.	Calculated 't' value
Experimental group	30	20.22	2.18	0.49@
Control group	30	19.95	1.96	

Note: @ Not Significant at 0.05 level.

Table 1 indicates that the 't' value is not significant at 0.05 level. The students of the experimental group do not differ significantly from the students of the control group in the mean achievement test scores at the pre-test level.

Hypothesis 2

There is no significant difference between the experimental group and the control group in the learning of environmental education at the post-test level.

't' test was applied to test the significance of difference between the mean achievement test score of the experimental group and that of the control group at the post-test level.

Table 2

MEAN ACHIEVEMENT TEST SCORES OF THE EXPERIMENTAL GROUP COMPARED WITH THOSE OF THE CONTROL GROUP AT THE POST-TEST LEVEL

Groups	N	Mean	S.D.	Calculated 't' Value
Experimental group	30	37.51	3.68	15.06**
Control group	30	20.00	5.16	

Note: ** Significant at 0.01 level.

Table 2 reveals that the 't' value is significant at 0.01 level. Hence, it could be inferred that there is a significant difference between the two groups as indicated by the mean value. It can be concluded that the students of the experimental group fared better in the achievement test than the students of the control group. This again clearly shows that learning with the help of multimedia will increase the achievement of the students.

Hypothesis 3

There is no significant difference between the pre-test and post-test scores as regards learning of environmental education by the experimental group.

Table 3

MEAN ACHIEVEMENT TEST SCORE OF PRE-TEST COMPARED WITH THAT OF THE POST-TEST FOR THE EXPERIMENTAL GROUP

Groups	N	Mean	S.D.	Calculated 't' Value
Pre-test	30	20.21	2.15	20.72**
Post-test	30	37.50	3.68	

Note: ** Significant at 0.01 level.

't' test was applied to test the significance of the difference between the mean achievement test score of the pre-test with that of the post-test for the experimental group.

Table 3 indicates that the 't' value is significant at 0.01 level. Hence, it could be inferred that there is a significant difference between the mean achievement test scores of the pre-test and post-test for the experimental group. The higher mean value in the post-test shows that the students fared better in the post-test than in the pre-test. This further shows that the multimedia programme has helped the students to score more in the post-test.

Hypothesis 4

There is no significant difference between the pre-test and post-test scores as regards learning ofenvironmental education by the control group.

Table 4

MEAN ACHIEVEMENT TEST SCORE OF PRE-TEST COMPARED WITH THAT OF THE POST-TEST FOR THE CONTROL GROUP

Groups	N	Mean	S.D.	Calculated 't' Value
Pre-test	30	19.94	1.95	0.032@
Post-test	30	20.00	5.16	

Note: @ Not Significant at 0.05 level.

't' test was applied to test the significance of the difference between the mean achievement test score of the pre-test with that of the post-test for the control group.

Table 4 indicates that the 't' value is not significant at 0.05 level. Hence, it could be inferred that there is no significant difference between the mean achievement test score of the pre-test and that of post-test for the control group.

FINDINGS

- ★ There is no significant difference between the experimental group and the control group in the learning of environmental education at the pre-test level.
- ★ There is a significant difference between the experimental group and the control group in the learning of environmental education at the post-test level. The students learning with the help of the multimedia program fared better in environmental education than the students learning through the conventional method.
- ★ There is a significant difference between the mean achievement test score of the pre-test and post-test for the experimental group. This shows that the multimedia program has helped the students to score more marks in the post-test.
- ★ There is no significant difference between the pre-test and post-test scores as regards learning of environmental education by the control group. This shows that the conventional method of teaching will not help the students to learn environmental education so much as the multimedia program.

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