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AN EMPIRICAL STUDY OF EFFECTIVENESS OF MULTIMEDIA PACKAGE ON STUDY HABIT IN LEARNING BIOLOGY

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ABSTRACT

The present study focuses on the effectiveness of multimedia package on study habit in learning Biology of higher secondary students in Puducherry. The investigator has chosen 160 higher secondary students for this study. Equivalent group experimental design was employed for this study. 80 students were chosen as control group and 80 students were chosen as experimental group. The experimental group was subjected to multimedia package and control group was treated with conventional method of instruction in learning Biology. Study habit scale was administered before and after the treatments in order to find out the effectiveness of multimedia package on study habit in learning Biology. The findings of the study shows the experimental group students having good

<image>

study habit in their post-test scores than the control group students, which indicates that multimedia package is more effective in teaching learning process of Biology for XI standard students.

KEYWORDS:*Effectiveness, Multimedia, Biology, Experimental Design.*

INTRODUCTION:

Multimedia is usually recorded and played or accessed by information content processing devices, such as computerized and electronic device, but can also be a part of a live performance. The Explosion of information in science and technology has influenced every area of life. To maintain standard or quality in education one should make use of multimedia in the teaching learning process. Biology is considering as a complicated subject and students feels it contains more number of complicated pictures, parts and students do not learn anything interesting present in it. This is due to many factors among those pupil's

study habit is one of the important factor for their learning. So, in the present paper, the researcher has made an attempt to find out the effectiveness of multimedia package on study habit in learning Biology.

REVIEW OF RELATED LITERATURE

Garnett, Hackling and Oliver (2009) developed an interactive multimedia package to improve students' understanding of the particulate basis of chemical reaction, and their ability to interpret chemical equations and solve problems based on equations. The study showed that interactive multimedia provided learners with access to a rich information source and appropriate activities to promote learning and understanding.

O'Day, Danton (2010) studied on "using animations to teach biology: past and future research on the attributes that underlie pedagogically sound animations". Multiple technical resources (commonly referred to multimedia) are currently used by many instructors to communicate difficult topics and concepts to their students in meaningful ways. Various sources have shown that animations are more effective than static sequential images. This study shows animations have been used as effective teaching and learning tools in biology. Based on this background, researcher decided to make an attempt to study of effectiveness of multimedia package on study habit in learning biology.

OBJECTIVES OF THE STUDY

• To find out the effectiveness of multimedia package for XI standard students on study habit in learning biology.

• To find out whether there is any significant difference between pre-test score of experimental group and control group students in their study habit in learning biology.

• To find out whether there is any significant difference between post-test score of experimental group and control group students in their study habit in learning biology.

HYPOTHESES OF THE STUDY

1. The effect of multimedia package on study habit in learning biology is low.

2. There is no significant difference between the means of the control group and the experimental group in the pre-test scores of study habit in learning biology.

3. There is no significant difference between the means of the control group and the experimental group in the post-test scores of study habit in learning biology.

Method

Experimental method was used in the present study. The study adopts pre-test and post-test equivalent group design.

Sample

A total of 160 samples were selected from 5 schools in Puducherry. The total sample was further divided equally into two groups namely, control and experimental group. Control group was teaching through the conventional method of teaching and experimental method was teaching through multimedia package.

Tools

1. Multimedia Package for XI Std. Students in Learning Biology developed and validated by the investigators. 2. Study Habit Scale by Dr. B.V. Patel.

Table 1: Design of the Study

S.No.	Randomly Selected	Pre-test	Treatments	Post-test
1	Experimental Group	T1	Multimedia Package	T2
2	Control Group	T1	Conventional Method	T2

Hypotheses Testing

Hypothesis 1: The effect of Multimedia package on Study habit in learning biology is low.

Table 2: Significant of the Differences between the Means of the Control and Experimental Group inthe Gain Scores of Study Habit in Learning Biology

Group	Method	Mean	SD	Gain Score	Level	Numbers & Percentage
	Mean + SD	22.2750 + 11.46483		33.74983 and above	High	30 37.50%
Experimental Group	In between Mean + SD & Mean - SD			11 to 32	Average	43 53.75%
	Mean - SD	22.2750 <i>-</i> 11.46483		10.81017 and below	Low	07 08.75%
	Mean + SD	9.3500 2.371) + 24	11.72124 and above	High	27 33.75%
Control Group	In between Mean + SD & Mean - SD			7 to 11	Average	37 46.25%
	Mean - SD	9.350 2.371	0 - 24	6.97876 and below	Low	16 20.00%

From Table-2, it is inferred that average study habit group in the control groups' fall between the ranges 7 to 11, whereas in the experimental group, average study habit group falls between the range of 11 to 32. Therefore experimental group is found to statistically higher than control group in the average level of gain scores. It indicates Multimedia package is higher effective. Therefore hypothesis is rejected and concluded that the effect of Multimedia package on Study habit in learning biology is high.

Hypothesis 2: There is no significant difference between the means of the control group and the experimental group in the Pre-test scores of Study habit in learning biology.

Table 3: Significant of the Differences between the Means of the Control and Experimental Group in
the Pre-Test Scores of Study Habit in Learning Biology

Group	Count	Mean	SD	t-value	Remark	
Control Group	80	166.07	9.85	0.21	Not significant	
Experimental Group	80	165.75	9.77		i tot orginitearre	

From Table-3, in order to find out the significant difference in the Pre-test scores of Study habit between control and experimental groups, the investigator computed mean, SD and t-value. The mean value of the control group and experimental groups were found to be 166.07 and 165.75 respectively and the t-value is 0.21. The obtained t-value 0.21 is lesser than the table value at 0.05 level of significance. Hence the null hypothesis is accepted and it is concluded that there is no significant difference between the means

of the control group and the experimental group in the Pre-test scores of Study habit in learning biology. Hypothesis 3: There is no significant difference between the means of the control group and the experimental group in the Post-test scores of Study habit in learning biology.

Table 4: Significant of the Differences between the Means of the Control and Experimental Group in
the Pre-Test Scores of Study Habit in Learning Biology

Group	Count	Mean	SD	t-value	Remark
Control Group	80	175.42	10.04	0.62	Significant*
Experimental Group	80	188.02	6.03	9.02	

*Significant at 0.01 level.

From Table-4, in order to find out the significant difference in the post-test scores of study habit between control and experimental groups, the investigator computed mean, SD and t-value. The mean value of the control group and experimental groups were found to be 175.42 and 188.02 respectively and the t-value is 9.62. The obtained t-value 9.62 is greater than the table value at 0.01 level of significance. Hence the null hypothesis is rejected and it is concluded that there is significant difference between the means of the control group and the experimental group in the Post-test scores of Study habit in learning biology.

The experimental group which was taught with the help of Multimedia package shows a clear advantage (mean=188.02) over the control group (mean=175.42). Thus the Multimedia package promises to be more effective in Study habit than the conventional method of teaching in learning biology.

FINDINGS OF THE STUDY

• Effect of Multimedia package on Study habit in learning biology is high.

• There is no significant difference between the means of the control group and the experimental group in the Pre-test scores of Study habit in learning biology.

• There is significant difference between the means of the control group and the experimental group in the Post-test scores of Study habit in learning biology. Therefore it is concluded that the Multimedia package promises to be more effective in Study habit than the conventional method of teaching in learning biology.

CONCLUSION

The present study aims at developing and using multimedia package in learning biology for higher secondary school students to enable them to understand the concepts very easily and also fostering their study habit through multimedia package. It is maintained that the multimedia programme may reduce monotony in the classroom by bringing out real life situations and motivate them for self-study and provides opportunities for individual pace and ability and the findings reveals that multimedia package proves the supremacy in the teaching learning process than the traditional method.

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