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Impact of multimedia package on achievement of mathematics of X class students

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Abstract
Multimedia is an effective instruction and communication tool. Multimedia has been defined as the combination of more than one method, arranged systematically to provide learning experiences to learner to achieve pre-determined objectives. Previously the term multimedia referred to the use of several coordinated media devices. Multimedia enhances the greater class capacity. It enables teachers to explain well and student can understand the explained information easily.

Keywords: effective, achievement of mathematics, communication

Introduction
Multimedia solves the difficult and focal points in interesting ways, thus enhancing of the learner. It helps to increasing interactivity, which is the main characteristics of multimedia. It helps teachers to optimize their content that improve various skills and knowledge among the students.
Multimedia, as a teaching method stimulates various senses with colour, graphics, sound and animation which found in the audio, video and movie media. The senses are gateway of knowledge so every teaching-learning process becomes effective by employing as many senses in the process for the best possible result. Therefore, the multimedia will be a very effective, perfect and innovative means of teaching.

Significance of the Study
At present time, competition is seen in every field of life, including education. In this competitive era, all determinants of education of education system require not only to cover the vast syllabus in a limited period as well as better achievement. This demands the adaptation of new technologies and techniques to achieve the pre-determined goals of education.
The present study aims to enhance the academic achievement of Math's subject through the use of multimedia package in the context of Tamil Nadu Tamil medium schools. Academic achievement will definitely be facilitated by using multimedia and multimedia package which creates interactive, creative, democratic, interesting, understandable, simple classroom environment so that, teacher enables students respond in a theoretical and practical way. In this way, multimedia will revolutionize the various aspects and factors of teaching–learning process. Therefore, the present study is very important and being conducted on multimedia approach to find out the impact of multimedia package on achievement of Mathematics of X class students.

Statement of Problem
"Impact of Multimedia Package on Achievement of Mathematics of X class students"

Objective of the Study
- To develop instructional design for selected topic in mathematics as high school level.
- To develop suitable multimedia package for the selected topic in mathematics at high School level.
- To find out the significance of difference between the pre-test and post-test mean scores of the achievement in mathematics of the experimental group.
- To find out the significance of difference between the post-test mean scores of the achievement in mathematics of the experimental group with respect to sex.
- To find out the significance of difference between the post-test mean scores of the achievement in mathematics of the experimental group with respect to parents' educational qualification.
- To find out the significance of difference between the post-test mean scores of the achievement in mathematics of the experimental group with respect to study habit

Hypothesis of the Study
The following of the hypothesis framed for this study
- There is no significance difference between the pre-test and post-test mean scores of the achievement in mathematics of the experimental group.
- There is no significance of difference between the post-test mean scores of the achievement in mathematics of the experimental group with respect to sex.
- There is no significance of difference between the post-test mean scores of the Achievement in mathematics of the experimental group with respect to parents' educational qualification.
- There is no significance of difference between the post-test mean scores of the achievement in mathematics of the experimental group with respect to study habit.

Researcher Procedure
In the present study, Experimental research method was

adopted for its suitability and Accuracy. To find out difference in the effectiveness of learning through multimedia package the researcher adopts the single group (Pre-test: Treatment: Post-test) experimental design.

Sample of the Study

The present study is concerned only to tenth standard 50 students are studying in Government High School Thirukkattupalli, Thanjavur District was treated as experimental group.

Tool Used

Multimedia package had been developed by the investigator for teaching chapters related to menstruation subject of mathematics text book of class X prescribed by board of secondary education, Tamil Nadu and research himself prepared a achievement test in Mathematics scale with guidance of the expect committee.

Statistical Techniques Used In the Study

Statistical techniques serve the fundamental purpose of the descriptive and inferential analysis. The researcher used the following statistical techniques for analyzing the data.

- Mean and Standard Deviation
- 't' - test and F-test

Test the Hypothesis

Hypothesis-1

There is no significance difference between the pre-test and post-test mean scores of the achievement in mathematics of the experimental group.

Table 1: significance difference between the pre-test and post-test mean scores of the achievement in mathematics of the experimental group

Group	N	Mean	S.D	SE_D	$\|m_1-m_2\|$	t-Value	Level of significance
Pre-test	50	58.4276	12.1452	2.0905	38.4469	18.3912 ***	0.01 Level
Post-test	50	96.8745	8.4264				

The above table shows that the computed value of 't' (18.3912) is greater than the critical value of 1.96 at 0.05 level of significance. Hence, it is significant consequently, the null hypothesis is to be rejected, and it can be said that, there is significant difference between the pre-test and post-test mean scores of the achievement in mathematics. It is also inferred that the impact of multimedia package on achievement in mathematics is higher compared to traditional method.

Hypothesis-2

There is no significance of difference between the post-test mean scores of the achievement in mathematics of the experimental group with respect to sex.

Table 2: significance of difference between the post-test mean scores of the achievement in mathematics of the experimental group with respect to sex

Sex	N	Mean	PSD	SE_D	$\|m_1-m_2\|$	t-Value	Level of significance
Male	25	96.4875	8.4264	1.6703	0.9490	0.5682	N. S
Female	25	97.4365					

The above table shows that the computed value of 't' (0.5682) is less than the critical value of 1.96 at 0.05 level of significance. Hence, it is not significant consequently, the null hypothesis is not to be rejected and it can be said that, there is no significant difference between post-test mean scores of the achievement in mathematics of the experimental group with respect to sex.

Hypothesis-3

There is no significance of difference between the post-test mean scores of the achievement in mathematics of the experimental group with respect to parents' educational qualification.

Table 3: Significance of difference between the post-test mean scores of the achievement in mathematics of the experimental group with respect to parents' educational qualification

Source of variance	Sum of squares	df	Mean variance of squares	F-value	Level of significance
Between sample	29.7985	5	5.9597	0.6817	N. S
Within sample	384.6656	44	8.7424		

The above table shows that the computed value of "F" (0.6817) is less than the critical value of 1.96 at 0.05 level of significance. Hence, it is not significant consequently, the null hypothesis is not to be rejected and it can be said that, there is no significant difference between post-test mean scores of the achievement in mathematics of the experimental group with respect to parents' educational qualification.

Hypothesis-4

There is no significance of difference between the post-test mean scores of the achievement in mathematics of the experimental group with respect to study habit.

Table 4: significance of difference between the post-test mean scores of the achievement in mathematics of the experimental group with respect to study habit

Study Habits	N	Mean	PSD	SE_D	$\|m_1-m_2\|$	t-Value	Level of significance
Self-study	32	95.0334	8.4264	1.0758	3.6822	3.4228 ***	0.01 Level
Group-study	18	98.7156					

The above table shows that the computed value of 't' (3.4228) is greater than the critical value of 1.96 at 0.05 level of significance. Hence, it is significant consequently, the null hypothesis is to be rejected, and it can be said that, there is significant difference between post-test mean scores of the achievement in mathematics of the experimental group with

respect to study habit. It is concluded from the above table that, the group-study pupils have more achievement in mathematics than self-study pupils.

Summary of Finding

The following are the finding of the present study

- It is inferred that the impact of multimedia package on achievement in mathematics is higher compared to traditional method.
- There is no significant difference between post-test mean scores of the achievement in mathematics of the experimental group with respect to sex.
- There is no significant difference between post-test mean scores of the achievement in mathematics of the experimental group with respect to parents' educational qualification.
- It is inferred that the group-study pupils have more achievement in mathematics than self-study pupils.

Conclusion

The present study has investigated the hard parts in mathematics and the construction of multimedia package at high school level and it was found that the impact and utilization were very high in the case of achievement in mathematics. Since multimedia package is having effectiveness on achievement in mathematics.

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