



Effectiveness of Multimedia in Teaching Mathematics at Under-Graduate Level

KEYWORDS

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ABSTRACT *The present study intended to find the effect of multimedia in teaching Mathematics at the under-graduate level. The study was conducted on a sample of 30 under-graduate students who have opted Mathematics. Tools used were Multimedia courseware and Achievement test. The data was analyzed by Descriptive and Differential analyses. The findings revealed that there is increase in mean scores of both the Experimental and Control groups. It was also found that multimedia proved its effectiveness in teaching Mathematics at Under-Graduate level over Traditional method.*

INTRODUCTION

Teaching mathematics is a task which, if sincerely undertaken, will challenge the best efforts of the best teacher. There are two equally important aspects of any true profession viz., significant knowledge and effective techniques. One cannot be efficiently professional if there is any serious weakness in either of the two. An appropriate educational technology, in the hands of a competent teacher, can ensure a better teaching-learning process. In this regard multimedia is useful to a great extent. A multimedia document can be searched automatically to find out any topic, while a printed book makes this almost impossible. In fact, a multimedia can refer not only to information within itself, but also to the other entire documents to which they have been linked. Multimedia uses links to navigate the universe of connected information at the speed of light. Multimedia is highly effective. The computer Technology Research Group (CTRG) reveals that people retain only

- 20% of what they see
- 30% of what they hear
- 50% what they see and hear
- 80% of what they see, hear, and do simultaneously

That is why multimedia provides such a powerful tool for teaching and learning. Numerous research studies have shown that multimedia are effective means of achieving instruction objectives and students enjoy learning through multimedia.

HYPOTHESIS OF THE STUDY

Multimedia significantly improves the teaching in Mathematics at under-graduate level.

DESIGN OF THE STUDY

The students of Pope John Paul II College of Education who have opted mathematics at under-graduate level are taken for the study. From the total strength of 45 a sample of only 30 students were taken by random sampling method. Those 30 students were equally divided into two groups with each fifteen so that the mean scores of their marks obtained in Higher Secondary were nearly equal and were named as Control group and Experimental group.

RESEARCH TOOLS

The following tools were used in the present study:

1. Multimedia Courseware in Mathematics
2. Achievement test

EXPERIMENTAL DESIGN

In the present study parallel group experimental design is employed. The Control group and the Experimental group were compared in all aspects. The control group was taken as the reference, which was used to compare the experimental group. The control group received no treatment while the experimental group received the treatment.

RESULTS AND DISCUSSION

The Mean and Standard Deviation of the scores secured by Under-graduate students in the Pre-tests through multimedia of the Experimental Group and the traditional method of the Control Group are tabulated and presented in Table 1 about here.

Table 1

The Mean and Standard Deviation of the scores secured by Under-graduate students in the Pre-tests through multimedia of the Experimental Group and the traditional method of the Control Group

Variables	Tests	N	M	Difference between Means	SD
Experimental Group	E-Pre	15	20.33	0.46	4.64
Control Group	C-Pre	15	19.87		5.14

From the table it is observed that the mean scores of the students at the Under-graduate level in the post-tests for the Experimental group is 20.33 and for the Control group is 19.87. The difference between mean scores of the experimental group and the Control group is 0.46. Hence, it is evident that both the experimental and Control group achieved approximately equal scores in the pre-tests.

Hypothesis:

Multimedia significantly improves the teaching in Mathematics at under-graduate level.

Comparison of the post-test scores of the Experimental group taught through multimedia and the Control group taught through the traditional method is tabulated and presented in

Table 2

Comparison of the post-test scores of the Experimental group taught through multimedia and the Control group taught through the traditional method

Variables	Tests	N	M	SD	Mean Difference	t-value	df	Level of Significance
Experimental Group	E-Post	15	44.47	2.56	17.34	32.07	28	0.05
Control Group	C-Post	15	27.13	4.44				

The mean of the post-test scores of the Experimental group taught through multimedia courseware is 44.47 with a SD 2.56. The mean of the post-test scores of the Control group taught through the traditional method is 27.13 with a SD 4.44. The mean difference 17.34 is found to be significant at 0.05 level for 28 df with a 't' of 32.07. Therefore the hypothesis is rejected.

It is concluded that multimedia in mathematics at the Undergraduate level is effective as compared to that of the traditional method.

CONCLUSION

In the light of the findings, it is felt that the present piece of study may contribute to the alleviation of the difficulties of the students in acquiring scientific concepts. It is hoped that appropriate CD-based multimedia courses may be given as a modern approach to self-learning in the present curriculum, and the findings of the study may be taken into consideration for a better frame work in developing self-learning competency of mathematical concepts at the higher level of education. This has also been realized by many mathematical experts; hence, there is an urgent need to gear national effort towards the implementation of this innovative strategy.

REFERENCE

- Amruth G Kumar, and Devika, R. (2008). Effectiveness of Multimedia learning package in teaching social science at secondary level. *Experiments in Education*, 34, 139-143. | Anboucarrassy, B. (2010). Effectiveness of multimedia in Teaching Biological Science to IX Standard students. *Edutracks*, 9, 37-38. | Babu, R., & Vimala, T.S. (2008). Impact of Multimedia Method in Accountancy Learning at Higher Secondary Level. *Journal of Education Research and Extension*, 45, 51-58. | David, M.R., Chikte, Usuf M.E., Halperin, & Mitchell, L. (2011). Development and Evaluation of a Multimedia E-Learning resource for Electrolyte and Acid-Base disorders. *Advances in Physiology Education*, 35, 295-306.