



EFFECT OF TEACHING THROUGH MULTIMEDIA AN ATTITUDE, INTEREST AND ACHIEVEMENT IN PHYSICS AMONG HIGHER SECONDARY SCHOOL STUDENTS

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ABSTRACT :

This study aimed to find out the effect of teaching through multimedia an attitude, interest and achievement in physics among higher secondary school students. Experimental method was used. 40 students studying XI standard were selected as sample for the study. Achievement Test was used as the tool for the study. Data was analysed by t-test. Results revealed that there is significant difference between pre-test and post-test performance for control group among higher secondary school students in their study habits, attitude and interest towards using multimedia technology in learning Physics of Tamil and English medium students.



KEYWORDS : *attitude, interest and achievement in physics , learning Physics.*

INTRODUCTION

Education is considered as a powerful instrument for social change, because it deals mainly with the thought patterns as behavioural patterns of the younger generation. The success of any educational programme lies in the hands of teachers as they are the architects of our future. Multimedia is changing the way one communicates with each other. The way one sends and receives messages is more effectively done and better comprehended. The inclusion of media elements reinforces the message and the delivery, which leads to a better learning rate.

The evolution of multimedia has made it very possible for learners to become involved in their work. With multimedia technologies, they can create multimedia applications as part of their project requirements. This would make them active participants in their own learning process, instead of just being passive learners of the educational content. The higher secondary schools need high quality teaching aids. Multimedia, as a teaching aid, is very effective as it uses colour, sound, graphics, etc. Any diagram can be explained in detail with 3D effect, which helps the students to understand it clearly.

NEED AND SIGNIFICANCE OF THE STUDY

Scoring high marks is necessary to get seats in professional courses. Students face many problems to score more marks in science through conventional method. Learning in physics appears to pose more problems to the students due to traditional method of teaching. The researcher found out an innovative learning method multimedia technology which provided effective learning practice to learn physics in the school. It will motivate students to learn by increasing their interest in physics in everyday life. Science

learning in particular physics learning is not an easy task. Multimedia is universal means, as it can be used for teaching to make the teaching-learning process effective, interesting and accessible. Multimedia holds greater promise in enhancing learning as well as in improving the quality of education. Multimedia enables student get a live vision of life's aspect and scientific factors. Any diagram can be explained in detail with 3D effect. It helps the student to understand the lesson clearly. Multimedia ensures flexible learning. Better study habits and study skills lead to better achievement scores. The study habits and study attitudes are both significant variables which determine the academic performance of the students.

OBJECTIVES

- To find out the significant difference between pre-test and post-test score of control group among higher secondary school students in their study habits, attitude and interest towards using multimedia technology in learning physics of English medium students.
- To find out the significant difference between pre-test and post-test score of control group among higher secondary school students in their study habits, attitude and interest towards using multimedia technology in learning physics of Tamil medium students.

HYPOTHESES

1. There is no significant difference between pre-test and post-test performance for control group among higher secondary school students in their study habits, attitude and interest towards using multimedia technology in learning physics of Tamil medium students.
2. There is no significant difference between pre-test and post-test performance for control group among higher secondary school students in their study habits, attitude and interest towards using multimedia technology in learning physics of English medium students.

METHODOLOGY

The experimental method was adopted for this study. The students of control group were taught by traditional method. The students of experimental group were taught by multimedia teaching method. Before the treatment an achievement test is conducted as a pre-test and the marks are recorded. Immediately after the treatment, an achievement test has been given as a post test, the difference in the mean achievement scores are analysed to find out the effect of multimedia teaching in physics at higher secondary level. The analysis of the pre-test and post-test scores is done through the test of significance. The sample of the study consists of 40 students studying in eleventh standard. The sample included both boys and girls.

TOOLS

Multimedia programme was designed to teach the concepts in the subject physics of eleventh standard students. Attitude and Interest Scale was prepared by the investigator. The investigator constructed an achievement test. The investigator conducted a pilot study. The achievement test containing 30 objective type questions was administrated to eleventh standard students who were not included in the sample of the study. The reliability & validity was established. The final form of the achievement test containing 25 questions was used as an achievement test in after the treatment of the both groups.

DATA ANALYSIS**Table 1: Mean, SD, and t-value of Pre-Test and Post-Test Performance for Control Group in their Study Habits, Attitude and Interest towards Using Multimedia Technology in Learning Physics of Tamil Medium Students**

Variable	Experimental Group	Mean	SD	t-value	P-value
Study Habits	Pre-test	13.63	4.099	16.472**	.000
	Post-test	18.90	3.112		
Attitude	Pre-test	8.80	2.210	10.162**	.000
	Post-test	13.23	2.824		
Interest	Pre-test	12.10	3.921	12.316**	.000
	Post-test	16.18	2.640		

**Significant at 0.1 level

Table-1 shows that the calculated pre-test mean score for control group on study habits is 13.63 and the post-test mean score is 18.90. The calculated t -value is 16.472 and it is statistically significant at 0.01 level. Hence, there is significant difference between pre-test and post-test performance of higher secondary school students.

From Table-1, the calculated pre-test mean score for control group on attitude is 8.80 and the post-test mean score is 13.23. The calculated t -value is 10.162 and it is statistically significant at 0.01 level. Hence, there is significant difference between pre-test and post-test performance of higher secondary school students.

From Table-1, the calculated pre-test mean score for control group on interest is 12.10 and the post-test mean score is 16.18. The calculated t -value is 12.316 and it is statistically significant at 0.01 level. Hence, there is significant difference between pre-test and post-test performance of higher secondary school students. It is observed from the finding, the post-test mean score is higher than the pre-test mean score for the control group in their study habits, attitude and interest towards using multimedia technology in learning physics of Tamil medium students.

Table 2: Mean, SD and t-value of Pre-Test and Post-Test Performance for Control Group in their Study Habits, Attitude and Interest towards Using Multimedia Technology in Learning Physics of English Medium Students

Variable	Experimental Group	Mean	SD	t-value	P-value
Study habits	Pre-test	13.77	3.919	15.363**	.000
	Post-test	18.29	2.946		
Attitude	Pre-test	10.51	2.293	11.662**	.000
	Post-test	12.91	1.579		
Interest	Pre-test	14.29	2.966	9.766**	.000
	Post-test	16.66	2.071		

**Significant at 0.1 level

From Table-2, that the calculated pre-test mean score for control group on study habits is 13.77 and post-test mean score is 18.29. The calculated t -value is 15.363 and it is statistically significant at 0.01 level. Hence, there is significant difference between pre-test and post-test performance of higher secondary school students.

From Table-2, the calculated pre-test mean score for control group on attitude is 10.51 and the post-test mean score is 12.91. The calculated t -value is 11.662 and it is statistically significant at 0.01 level. Hence, there is significant difference between pre-test and post-test performance of higher secondary school students.

From Table-2, the calculated pre-test mean score for control group on interest is 14.29 and the post-test mean score is 16.66. The calculated t -value is 9.766 and it is statistically significant at 0.01 level. Hence, there is significant difference between pre-test and post-test performance of higher secondary school students. It is observed from the finding, the post-test mean score is higher than the pre-test mean score for control group in their study habits, attitude and interest towards using Multimedia Technology in learning Physics of English medium students.

MAJOR FINDINGS

- ▶ There is significant difference between Pre-test and Post-test performance for the Control group among higher secondary school students in their study habits, attitude and interest towards using Multimedia Technology in learning Physics of Tamil medium students.
- ▶ There is significant difference between Pre-test and Post-test performance for the Control group among higher secondary school students in their study habits, attitude and interest towards using Multimedia Technology in learning Physics of English medium students.

CONCLUSION

The use of multimedia teaching via image and animation teaching is an innovative approach for teaching science subject. This method improves the teaching and learning of science subject in schools since students studying science subject performed poorly in their external examination. In an attempt to curb this ugly trend of student failure in science in secondary school, the use of animation would enable the students to retrieve or recall the previously learnt subject quickly and thereby enhance their fortune in teaching and learning science subject. These approach can be effective additions to regular science instruction and can help students visualize unseen phenomena, develop scientific language, improve understanding of the scientific process and contribute to the development of scientific thinking based on the findings the following recommendations are hereby offered: Government should procure multimedia devices and organise seminars for science teacher on the need to imbibe latest teaching culture.

REFERENCES

1. Mbarika, Victor; Bagarukayo, Emily; Hingorani, Vineeta; Stokes, Sandra; Kourouma, Mathieu; Sankar, Chetan. 2010. A Multi-Experimental Study on the Use of Multimedia Instructional Materials to Teach Technical Subjects. *Journal of STEM Education: Innovations and Research*, pp.24-37.
2. Brashears, T., Akers, C. & Smith, J. 2005. The Effects of Multimedia Cues on Students Cognition in an Electronically Delivered High School Unit of Instruction. *Journal of Biological Education Research*, 55(1), 5-18.
3. Owolabi, O.T. & Abiola, T.A. 2005. Effect of two programmed Instructional Strategies on Science Students in Chemistry Lesson in Nigeria. *Research Journal on Applied Science*, 3(2), 99-102.
4. Osokoya, J.A. 2007. Towards a New Generation of Multimedia Learning Research. *Association of Advancement in Computer Education Journal*, 14(1), 3-30.
5. Anboucarassy. (2010). Effectiveness of Multimedia in teaching biological science to IX standard students. *Edutracks*, 9(5).