



**ORIGINAL RESEARCH PAPER**

**Education**

**ATTITUDE TOWARDS MULTIMEDIA AND ACHIEVEMENT IN MATHEMATICS**

**KEY WORDS:** *Mathematics, Multimedia, Experimental method, Attitude*

**C. E. Jayanthi**

Assistant Professor, Department of Educational Planning and Administration  
Tamil Nadu Teachers Education University, Karapakkam, Chennai-600 097.

**ABSTRACT**

The present study investigates the relationship between attitude towards multimedia and achievement in Mathematics. The main objective of the study is to find the significant relationship between attitude towards multimedia and post test scores of control group and experimental group. Sixty Eleventh standard students were taken for the research, in which thirty students were kept under experiment group and thirty under control group. Experimental students were taught by multimedia, whereas control group through traditional method. Attitude towards Multimedia scale of Sudharsan, V (2014) was used to measure the attitude towards multimedia. Results show that there exists significant relationship between attitude towards multimedia and post test scores of control group and experimental group.

**INTRODUCTION**

Multimedia is a combination of more than one media type such as text, symbols, images, pictures, audio, video, and animations usually with the aid of technology for the purpose of enhancing understanding or memorization (Guan et al., 2018). The importance of multimedia technologies and applications in education as a teaching or learning tool cannot be over emphasized. This has been confirmed in several studies that have investigated the impact of multimedia technology to the education system (Milovanovi et al., 2013). The selection of appropriate video clips and methodology for their display within the teaching materials represents an important issue for curriculum design, leading to positive learning outcomes (McConville & Lane, 2006). To bring expected outcome in the teaching-learning process, Multimedia act as a powerful tool. The cognitive theory of multimedia learning shows that it is necessary to select relevant information and organize it into a verbal and pictorial model (Mayer, 2001).

**Meaning and definition of Attitude**

Attitude refers to positive, negative or mixed evaluation of an object that is expressed at some level of intensity. It is an expression of favorable or unfavorable evaluation of a person, place, thing or event. These are fundamental determinants of our perceptions of, and actions toward all aspects of our social environment. Attitudes involve a complex organization of evaluative beliefs, feelings, and tendencies toward certain actions.

Krech and Crutchfield (1948) defined attitude as "An attitude can be defined as an enduring organization of motivational, emotional, perceptual, and cognitive processes with respect to some aspect of the individual's world"

**Need of the study**

In everyday life we are using multimedia in the form of information and communication technology. Classroom teaching is not an exemption from this. Teacher need to handle student's data all over the time. Here the data refers to student's academic performance, events and activities. ICT helps in the administration level like paying fees, preparing mark statements, sending e-mail to the parents. Finishing homework through internet, students assessment, online teaching, E-portfolio, Multimedia Based Teaching, e-content are the major contribution of ICT in education. The appropriate use of ICT in teaching transforms the learning environment from teacher-centred to learner-centred (Coleman et al., 2016). And hence the investigator wants to study the relationship between attitude towards multimedia and achievement in Mathematics.

**OBJECTIVES**

1. To find the significant relationship between attitude

- towards multimedia and post test scores of control group.
2. To find the significant relationship between attitude towards multimedia and post test scores of experimental group.

**Hypotheses**

1. There is no significant relationship between attitude towards multimedia and post test scores of control group.
2. There is no significant relationship between attitude towards multimedia and post test scores of experimental group.

**Review of related literature**

**Valencia, Brenda. (2016)** studied the impact of Computer Aided Instruction (CAI) on achievement in Mathematics of VII standard students. The main objective of the study was to find the impact of Computer Aided Instruction (CAI) on achievement in Mathematics among VII standard students. This was an experimental study. The investigator used two groups, namely control group and experimental group. The control group consists of twenty two students, whereas the experimental group consists of twenty nine students. The experimental group received Computer Aided Instruction (CAI) method of instruction by Mobymax software. The control group students received Teacher instruction. 't' test was used to find the difference in the mean scores of the two groups. Results indicate that utilizing Mobymax software increases the achievement of the students in Mathematics.

**Nicholas Zaranis. (2016)** studied the usage of Information Communication and Technology (ICT) in kindergarten for teaching Mathematics through Realistic Mathematics Education (RME). The main objective of the study was to find the effect of Information Communication and Technology (ICT) on Mathematics of Kindergarten students. Kindergarten students were divided into two groups. The experimental group consisted of one hundred and sixty five students, whereas the control group had one hundred and seventy students. Experimental group students received Information Communication and Technology (ICT) based education, whereas the control group students were not exposed to Information Communication and Technology (ICT) based education. Both the groups were pre- tested and post - tested. It was found that teaching through Information Communication and Technology (ICT) had a positive effect in learning 'addition' among the Kindergarten students.

**Research Instruments**

1. Attitude towards Multimedia –A Scale was adopted for the study which was standardized by Mr. V.Sudharsan (2014).
2. A Multimedia based content on standard XI Mathematics for the unit 'Integral Calculus', was constructed and validated by the investigator and guide (2017).

**Hypothesis: 1**

There is no significant relationship between attitude towards multimedia and post test scores of control group.

**Table:1 Relationship between attitude towards multimedia and post test scores of control group**

Attitude towards Multimedia Vs Post test scores of Control Group	N	df	Calculated 'r' Value	Remarks at level 5%
	30	29	0.54	S

(For df 29 the table value of 'r' is 0.35, S –Significant)

From the above table 1, it is inferred that the calculated 'r' value (0.54) is greater than the table value (0.35) for degree of freedom 29 at 0.05 level of significance. Therefore the null hypothesis ( $H_0$ ) is rejected. Hence it is concluded that there is significant relationship between attitude towards multimedia and post test scores on achievement in Mathematics of control group students.

**Hypothesis:2**

There is no significant relationship between attitude towards multimedia and post test scores of experimental group.

**Table:2 Relationship between attitude towards multimedia and post test scores of experimental group**

Attitude towards Multimedia Vs Post test scores of Experimental Group	N	df	Calculated 'r' Value	Remarks at level 5%
	30	29	0.41	S

(For df 29 the table value of 'r' is 0.35, S –Significant)

From the above table 2, it is inferred that the calculated 'r' value (0.41) is greater than the table value (0.35) for degree of freedom 29 at 0.05 level of significance. Therefore the null hypothesis ( $H_0$ ) is rejected. Hence it is concluded that there is significant relationship between attitude towards multimedia and post test scores on achievement in Mathematics of experimental group students.

**Major Findings**

1. The calculated 'r' value (0.54) indicates that there exists significant relationship between attitude towards multimedia and post test scores of control group.
2. The calculated 'r' value (0.41) indicates that there exists significant relationship between attitude towards multimedia and post test scores of experimental group.

**CONCLUSION**

Results show that there exists significant relationship between attitude towards multimedia and post test scores of control group and experimental group. This shows that both the groups have some sought of relationship with their post test scores with respect to attitude towards multimedia, but when comparing the 'r' value of control group and experimental group, the 'r' value of control group is greater than the experimental group, which shows that there is greater relationship with respect to attitude towards multimedia and post test scores of control group and lesser with respect to experimental group.

**REFERENCES**

1. Coleman L.O., Gibson P., Cotten S.R., Howell-Moroney M., Stringer K. Integrating computing across the curriculum: the impact of internal barriers and training intensity on computer integration in the elementary school classroom. *J.Educ. Comput. Res.* 2016;54(2):275–294.
2. Guan N., Song J., Li D. On the advantages of computer multimedia-aided English teaching. *Procedia Comput. Sci.* 2018;131:727–732. 2018.
3. Krech, D., & Crutchfield, R. S. (1948). *Theory and problems of social psychology*. McGraw-Hill.
4. Mayer, R. (2001). *Multimedia Learning*. Cambridge: Cambridge University Press.
5. McConville S, Lane A (2006) Using on-line video clips to enhance self-efficacy toward dealing with difficult situations among nursing students. *Nurse Education Today*;26:3,200-208.
6. Milovanovic, M et al. (2013). Application of interactive multimedia tools in teaching mathematics--examples of lessons from geometry. *Turk. Online J. of*

7. Valencia, Brenda.(2016). "Impact of Computer Assisted Instruction on Achievement in Seventh Grade Mathematics". *Capstone Projects and Master's Theses*. 573.
8. Zaranis, Nicholas. (2016). *Education and Information Technologies*, v21 n3 p589-606 May 2016.