



# Impact of Interactive Technology and Smart Education on Academic Achievement of Students

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## ABSTRACT

Interactive technology and smart education plays a dynamic role in educational process. Using smart education technique in teaching- learning process helps to create effective teaching- learning environment. Interactive technology and smart education can enhance the knowledge & skill of the teacher and students. The research paper is based on the to understand the Impact of Interactive technology and smart education on academic achievement of students. The study design was based on experimental research design. The sample of the study consists of 80 secondary school students in Amravati city Maharashtra state. The analysis of impact of interactive technology and smart education on academic achievement of students, the researcher was used self-administered achievement test in environmental science. The data was analysed with the help of mean, SD and t' test. The findings of the study revealed that the Interactive technology and smart education was support to develop creative and innovative approach towards learning. Result shows that the calculated t-ratio of the post-test scores of achievement in environmental science between control and experimental groups was found to be 5.96 which are greater than the tabulated value of 't' 1.96 at 0.05 level of significance. Hence, there is a significant difference in the achievement in science scores of control and experimental group students. The finding of the study concluded that the Impact of Interactive technology and smart education can create effective learning environment its helpful for development of academic achievement of the students..

**Keywords:** Impact, Interactive technology, smart education, academic achievement, students

## I. INTRODUCTION

The application of Interactive technology in education has changed the pattern of the traditional education. Interactive technology in education can develop innovative pedagogical methods especially for teaching or learning purposes. Teachers are implementing various tools to improve their teaching skills and class environment.

The educational technology is important for create better opportunities to instructor, learner and administrator to enhancing the working capabilities in the education system.(Raushan A.2020)

Accordingly, teachers from various disciplines can implementation of ICT is helpful for improving their educational process and teaching method (Lio, 2011; Liu and Velasquezbryant, 2003; Hew and Brush, 2009, Donnelly *et al.*, 2011).

Effective execution of ICT in education can create innovative reforms in teaching and learning process in all disciplines of education (Pulkkinen, 2007; Wood, 1995).

In India, educational technology is a useful aid for create new paradigm in education and its help to teach complex concepts in science (NCERT, 2006).

At current scenario, different media tools are apply in classroom. Media tools like computer/laptop, smartphones, digital cameras and various multimedia software's has supported to effective classroom environment. (Riodan, 2008).Smart education technology like smartphones, wireless technology makes interaction and teaching learning process easier. The smart education technology can apply a variety of digital tools. These tools can effectively delivered content and enhancing the knowledge level.

Interactive technology has changed teaching technique and can enhance the level of knowledge and it's helpful for understanding of the different concept of environmental science.

The present study can be helpful to the teachers and a learner has to create potentials and build up the strengthening for new reforms in education system.

## II. REVIEW OF LITERATURE

National education technology forum (NEFT) was recommended that formation of independent and sovereign body is essential.This body has supported to development of innovative teaching-learning technique and other educational activities like assessment ,management ect.(Mitra. Y.and Singh .D,2020)

Smart education technology has changed completely area of education. It accelerates the process of feedback system which is important for enhancement of transfer of higher order knowledge providing to learner. It has to develop critical thinking skill via active communication.(Elhoseny etal.2018)

The application of multimedia technology in text comprehension can improve the learning and memory retention. (Chiou, Tien & Lee, 2015)

The multimedia technology has changed the nature of traditional class room to smart classroom (Indira dhull & Suman beniwal, 2013)

Application of picture and audio at the same time to ensure the teacher can relate both modes of presentation. Words are better presented in the auditory form rather than in text form in animation or video tools (Liu, Lin, Tsai & Paas, 2012).

Presentation of information in two modes one combination of words and second picture or animation and audio narration. Modality is helpful to students can learn in easier way and enhancing the critical thinking skills (Fiorella, Voget Walcut & Schatz, 2012).

Multimedia technology can facilitates constructively effective learning environment. (M. Neo and T.K. Neo, 2009)

## III. OBJECTIVES OF THE STUDY

- 1]. To compare the effectiveness of the multimedia instructed teaching method and traditional teaching method on the academic achievement of secondary school students.

- 2]. To assess the level of understanding of the students by means of an environmental science subject.
- 3]. To develop an achievement test on environmental science for secondary school students.

#### Hypothesis:

- 1]. There will be no significant difference between the pre and post test scores of the control and experimental group students.
- 2]. There will be no significant difference between the post test scores of the experimental group students based on the level of learning achievement taught by multimedia instructional teaching method.

#### IV. METHODOLOGY

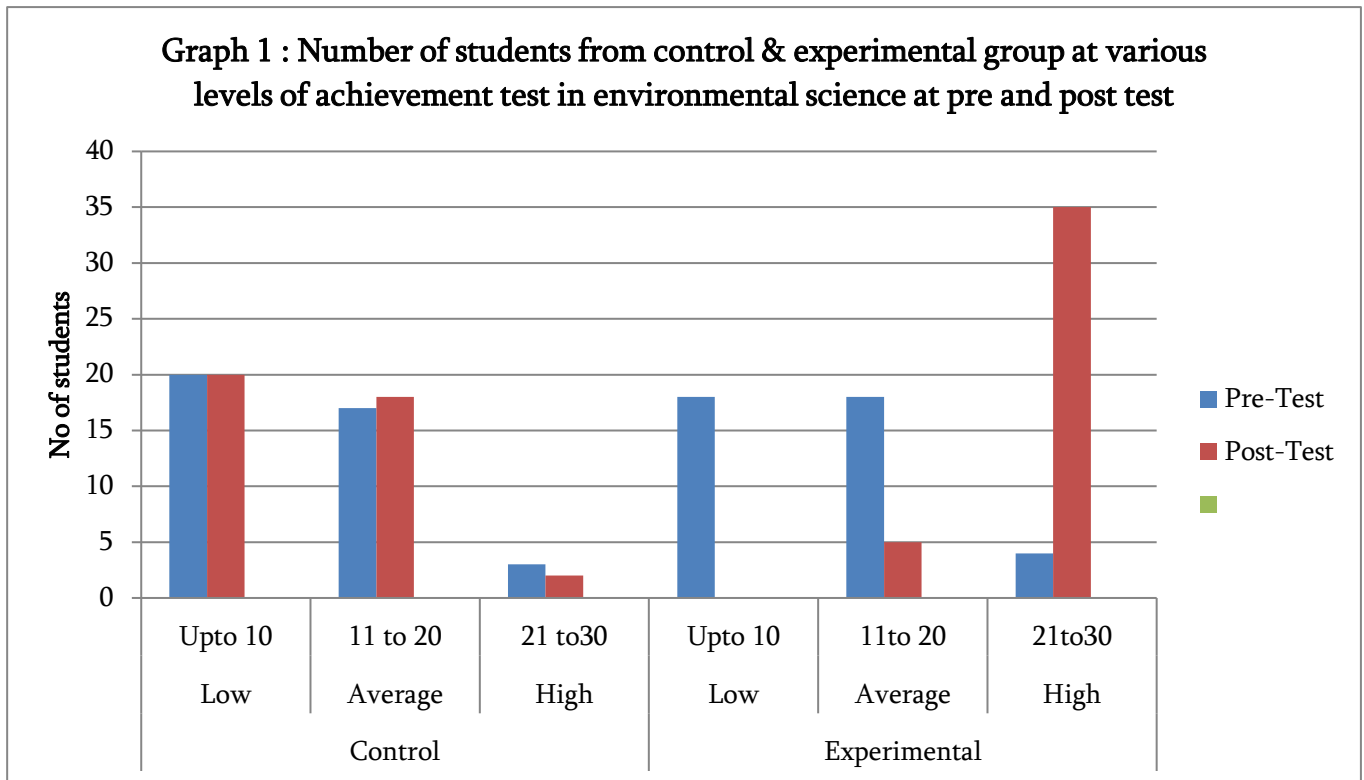
- **Research Design:** - The pre-test and post-test experimental research design is used in this study.
- **Sampling and Sampling Techniques:** - The population of the study was selected in secondary school level students. The sample was selected from schools in Amravati city, State of Maharashtra. Random sampling technique was used for selection of the secondary school students. The sample of the present study was selected total 80 secondary school students and divided into two groups viz. control and experimental.
- **Research Tool Used:** - A questionnaire was developed by the investigator. A self-administered academic achievement test in environmental science for secondary school students was used for data collection. The preparation of achievement test was selected areas related to the environmental science. The achievement test was constructed for 30 marks. It was designed to assess the level of understanding of the concept of environmental science before and after treatment among secondary school students.
- **Statistical Technique Used :-** The data was analyzed with the help of mean, SD and 't' test was used.

#### V. RESULT AND DISCUSSION

For the present study total 80 secondary school students were selected randomly. Table-1 shows that the distribution of respondents on the basis of their different levels of achievement in environmental science at pre and post test from control and experimental group.

**Table 1: Distribution of students according to their level of achievement test in environmental science**

Group	Level	Range	Pre-Test	Post-Test
Control	Low	Up to 10	20	20
	Average	10-20	17	18
	High	21-30	03	02
Experimental	Low	Up to 10	18	00
	Average	10-20	18	05
	High	21-30	04	35



From table 1- it is evident that the pre and post test scores of achievement in environmental science of 40 students of control group, it was seen that there was no significant difference of students in post-test under high level of achievement in environmental science. But in the experimental group students there is a significant difference in high level of achievement in environmental science while no one was found in low level category.

**Table 2 : Comparison pre-test mean scores of students**

Group	N	Mean	SD	df	SEdm	Mean Difference	Table 't' Value	Calculated 't' Value
Control	40	12.1	3.52	39	0.56	1.1	1.96	0.95@
Experimental	40	13.2	3.68	39	0.58			

(@ - Not significant at 0.05 level of significance)

The data presented in Table-2 shows that the calculated t-ratio of the pre-test scores of achievement in environmental science between control and experimental groups was found to be 0.95. Hence the calculated 't' values were less than tabulated value of 't' 1.96 at 0.05 level of significance, statistically there is no significant difference.

**Table 3 : Comparison post-test mean scores of students**

Group	N	Mean	SD	df	SEdm	Mean Difference	Table 't' Value	Calculated 't' Value
Control	40	10.67	3.30	39	0.52	14.03	1.96	5.96*
Experimental	40	24.70	5.03	39	0.80			

(\* - Significant at 0.05 level of significance)

From Table-2 indicated that the calculated t-ratio of the post-test scores of achievement in environmental science between control and experimental groups was found to be 5.96 which is greater than the tabulated value of  $t'$  1.96 at 0.05 level of significance. Hence, there is a significant difference in the achievement in environmental science scores of control and experimental group students. Further the mean score of experimental group students is higher than control group indicating there was an enormous improvement in achievement in environmental science instructed through multimedia technology

## VI. CONCLUSION AND IMPLICATION

The present study concluded that Interactive technology and smart education has changed teaching-learning process and reforms the traditional method in a innovative pedagogical paradigm. Smart education technology system has to promote new pedagogical method, strengthening of institutional capabilities for adoption of technology and build up skilled human resources. Control group students were taught environmental science subject by conventional method and experimental group of students were taught by interactive multimedia instructional method, it was found that achievement of experimental group was better than the control group in post-test. The Interactive multimedia instructional teaching method was effective than the conventional method. The result of the study shows that no one student was found to be under low level of achievement in environmental science. Interactive technology and smart education can develop innovative teaching techniques which is enhancing the creative skill of instructor and receiver. Interactive technology and smart education can improve the knowledge level of environment science subject.

The result of the study indicated that interactive technology and smart education is beneficial to various subjects at secondary level. Interactive technology and smart education is strengthening the students learning capabilities. Smart education can improve educational activities. Interactive technology and smart education is form new paradigm in education system.

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