A STUDY OF EFFECT OF TECHNOLOGY ON ACADEMIC ACHIEVEMENT OF STUDENTS IN SCIENCE

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Abstract

Rapid technological advances in the last two decades have sparked educational practioners' interest in utilizing technological devices as an instructional tool to improve student learning. There is substantial evidence that using technology as an instructional tool enhances student learning and educational outcomes. A comparative study on two sections of students of class 9th of Bhiwani (Haryana) district was conducted to see effect of technology in teaching learning process of science. Self made achievement test on science was administered on both the sections. One section was instructed normally while other instructed through the use of technology. The data were analyzed to get mean S.D and t-value. Findings are: (i) the students instructed through the use of technology have better academic achievement. (ii) students become active participant and develop problem solving attitude. (iii) science concept become more clear and retain in the mind of the students for longer time.

Keywords: *Technology, academic achievement.*

Education is vital to the pace of social, political and economic development of any nation, so effecting teaching is very essential. Effective teaching is important because teaching is based on helping children progress from one level to another in more sociable inter active environment and to get the approach right to get student to be independent learners (**Muijus** and **Reynolds,** 2005). Basic aim of education is to make the learner self-reliant to cope with the present situation and develop capability to survive in future. Education prepares the future citizens of the country, future citizens must be properly educated in such a way that they are eligible enough to compete in the fast moving world. In India, education is generally imparted through traditional method in which teacher provides face-to-face instruction to students and communication between and among teacher and students is face to face. Each and every thing in this is controlled by the teacher. Teacher is responsible for academic achievement of the students. Purpose of the teacher is to attract and sustain the concentration of the students in teaching-learning process. In order to sustain the concentration of the students in the class-room, teacher has to use technology and other teaching aids to attract the

attention of students and to keep the students busy in doing various activities in class so that the aim of teaching learning is achieved. Use of technology is common in school and it is popular in advanced cities of India. Impact of technology has no effect in primary school in India. Use of technology is nor effective in primary school and it is not influential in changing the environment of class room in the school. Technology in lower class does not show the change in the score of the students. It is found that technology is not always an effective teaching learning tool regardless of educational level of students. **Wenglinsky, Harold** (1996) presents findings from a national study of the relationship between different uses of educational technology and

various educational outcomes. Findings indicate that computers are neither a cure-all for problems facing the schools nor mere fads a without impact on student learning. When used properly, computers may serve as important tools for improving student proficiency and the overall learning environment of the school.

Jennifer Lyn Flanagan (2008) found the positive and negative effects on student achievement by technology. Technology is the technical means people use to improve their surroundings. People use technology to improve their ability to do work. Class rooms around the world have implemented many forms of technology to enhance student interest and achievement. Student achievement for the topic had risen and grades on the assessments had increased due to the presence of technology. Student engagement and interest had also increased due to the presence of technology.

Rana M. Tamim (2011) Studied the impact of technology on learning – His research employed a second- order meta-analysis procedure to summarize 40 years of research activity addressing the question, does computer technology use affect student achievement in formal face-to-face classrooms as compared to classroom that do not use technology ?

Use of computer, video, audio, networking and audio visual devices smart notebook, variety of teaching methods and strategies, use of multimedia in indeed a blessing to the students of the 21st century. Technology uses all interactive methods of teaching become appealing to the students who are already struggling with traditional method of teaching in a classroom. It is just like watching movies, animated visuals to teach a point. This kind of visual is both eye catching and young students can easily relate with them. As the teacher exporting the audio- visual senses of the students and it helps the students store the

information fast and same retained in the mind of the students for longer period. Technology saves the time of class in drawing various diagrams and writing on chalk board. Desert of Sahara or the rainforest of the Amazon basin become visual with help of technology. Through technology, student of each level of understanding can go alone with his own pace and understanding.

Academic Achievement: It is the extent of performance to which a student, teacher or institution has achieved their short or long- term educational goal Academic achievement is commonly measured through examinations or continuous assessments but there is no general agreement on how it is best evaluated or which aspects are most important.

Objectives

1. To study the effect of technology on academic achievement of students in Science.
2. To compare the academic achievement of the students taught in normal class room and taught through the use of technology.

Hypothesis: There is no significant difference in academic achievement of students taught through the use of technology and instructed in normal class room.

Method: Two sections of class 9th of JDKD School, Charkhi Dadri (Bhiwani) Haryana was taken for the study. Section A (containing 40 girls) was taught by the teacher of the same school for 30 days to cover two chapters of science. Section B (containing 35 student) was instructed by the pupil teacher for 30 days to cover same two chapters of science of same class but another section in the same time interval. PT instructed these two chapters of science using computer, video, audio networking, use of multimedia, smart note-book, variety of teaching methods. Students of both the sections have same academic achievement in class 8th. After the end of 30 days, an objective type achievement test was administered on both sections of students to know the academic achievement of these students in two chapters of science instructed through the use of technology and through normal Classroom method.

Sample: Students of two sections of 9th class of JDKD School, Charkhi Dadri were taken purposively. Section A has 40 Girls students and was instructed through normal method of teaching. Section B has 35 girls students was instructed through the use of technology. Students of both sections have approximately same academic achievement in class 8th examination

Tool: An achievements test was constructed on two chapters of science of Class 9th. This test contains 50 items and time assigned to solve this test is 50 minutes. It has 35 items belong to multiple choice questions, 5 items are true/ false and 5 items are of fill in the blanks. One mark to each item was assigned, so the test was of 50 marks. To study the effect of technological method on teaching, and on academic achievement, an achievement test was administered to collect data to find out mean, S.D. and t- value.

Results & Discussion

Table-1: Mean, S.D. and t-value

Section	Number of Students	Mean	SD	SED	t-value
A	40	26	7.92	1.893	5.086
B	35	36	8.98		

The calculated value of 't' is 5.086 which is greater even at 0.01(2.60) and 0.05(1.9) level. Hence, the null hypothesis, "there is no significant difference in academic achievement of students taught through the use of technology and instructed in normal class-room method." is rejected. This result shows that the use of computer, multi- media and other audio- visual aids attract and sustain the attention of the students in teaching science. Visual perception works like a movie and exploits diversified method of teaching exploits the attraction of the students, the concepts retains in the mind of students for longer time. Hence, the students taught through

Computer, multimedia and using various audio visual aids clarify the concept of science in the students and the students retain the same in their mind for longer period. Use of these devices and techniques in teaching change the environment of the class, make the students more curious to know further about a concept.

Educational Implication:

Use of instrunctional television, films, listening laboratiories and audio tapes, programmed instruction, mediated self-insturction, computerassisted instruction, special multimedia facilities, transparencies for over head projection other technological devices which affect the environment of the class-room, bring fruitful results in transformation of teaching-learning devices. Use of technological devices in the classroom, make the future of any country in right direction. Greater the use of technology, greater the academic achievement of students. If technology is used for betterment of classroom interaction. No doubt, negative effect of

technology is also very dangerous for the future citizens. So the technology should be used for the constructive and purposeful activities of teaching learning process. It provides number of opportunities so that the teacher develops meaningful lession everyday with ease and comfort. It enhances stimulation in classroom environment. Teacher may use memorization teachnique like acronyms and acrostics etc. CD's. for rhymes, tables, songs, poems and for proper pronounciation.

Conclusion

Results indicate that use of technology in teaching learning process is very useful for attracting and sustaining the attention of the students in the class-room. As per the requirement of curriculum, audio-visual aids, posters, videos and computer assisted activities should be prepared by the teacher before hand to make lesson more interesting. Slides, models, charts, video tapes, audio tapes, CD's for rhymes, poems and story should be used by the teachers. It is an exaggeration to say that if the lesson are dynamic and forceful they greatly stimulate and accelerate the teaching learning process.

Purpose of use of technology in class room is to increase writing, visualizing, imagining and thinking skill. This type of education also includes written tests to examine if the students are learning properly or not. The methodology used for teaching is very interactive. Use of technlogy is very effective for mature students, where the roles of teacher and students change, as well as the expression TEACHINGH "disappears". The student is an active participant whose work focuses on problem-solving and in general, development of the different critical and thinking abilities. Finally, the modern learning spaces must go beyond the classroom and the established lesson time. They must be an entirely 24/7 spaces for learners and in general for the participants exploration.

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