

Impact of Smart Class on Academic Achievement of Government aided Secondary School Learners of South Delhi

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Abstract: In this world of technology, the latest technology used in the field of teaching is smart class. Smart class has a unique way of teaching because of its versatile nature. In smart class teaching is done by using interactive white board. An interactive whiteboard is a large, touch –sensitive board which is connected to a digital projectors and a computer. In this paper researcher had studied the impact of smart class on learning by comparing the academic achievement scores of learners, taught by smart class and by traditional chalk and talk method. Researcher has done this study on secondary level learners of govt. aided school. Finding of the study shows that smart class has positive impact on learning environment as it has enhanced the learning process.

Key Words: Smart class, Interactive white board (IWB), Academic achievement, Chalk and talk.

1. INTRODUCTION:

Technology has made the human life luxurious and comfortable. It brings innovations and creations to every sphere of life. Education has given birth to technology and in return technology has brought innovations in the field of education. One of the latest technologies in the field of education is the use of smart class for teaching–learning process. Smart class also called Digital classroom where teaching is done through interactive white board instead of blackboard. Interactive board white board has made teaching process more versatile as one can access more resources like internet, videos, educational software, games etc. According British educational communication and technology Agency (BECTA) an interactive whiteboard is a large, touch –sensitive board which is connected to a digital projectors and a computer. The projector displays the image from the computer screen on the board. The computer can then be controlled by touching the board, either directly or with a special pen. The Board is easy to use and benefits both teachers and students. Interactive white board has made the lesson more enjoyable and fun. (Wishart & Blease 1999; Levy2002;BECTA 2003b;Lee&Boyle2003).

Smart class considered as need of hour (Seetha S. 2013). In her work she found that it is highly efficient in maintaining student interest and engagement in the class as it appeal both the audio – visual senses of learners. In digital classroom active learning take place as student can be taken to virtual field trip. Schroeder.R. (2007) in his research work investigated the role of interactive white board with active learning and found that smartboard reinforces affective learning. There is a evaluative study done by Halls & S., Higgins (2005) to study the impact of IWB on teachers & students' perception. It was found that both teachers and students have supported the use of IWB. The versatile nature of IWB is helpful in increasing the motivation, engagement and attention span of student during the delivery of lecture. Effects of interactive white board on student motivation was studied by McEntyre M. It was found that Interactive white board provide a multitude of rich learning opportunities for students. IWB helps student to move from one-dimensional thinkers to all rounded thinkers. Both teachers and students have shown positive attitude towards smart class. Most of the schools in Delhi have equipped their class with interactive white board to provide a better learning environment. It has been said that smart class will revolutionized the teaching learning process and it is the best used in science subject. In the present paper researcher analysed the impact of smart class on the biology concept of secondary school learners.

2. OBJECTIVES:

- To analyse the impact of smart class on the biology concept of the secondary school learner of government aided school.
- To compare the academic achievement of secondary school learners of government aided school having or not having the smart class.

3. MATERIAL AND METHODS:

Research design: Quasi- Experimental with Pre-Test Post-Test group design was adopted for the proposed study. One group was taken as experimental and another was taken as control group. Both the groups were subjected to different treatment by the investigator as described below.

Control group: Teaching through lecture method using chalk and talk.

Experimental group: Teaching through smart class using interactive white board.

The research was design to assess the impact of smart class on the academic achievement of secondary school learners. Through the purposive random sampling researcher selected a government aided school in south Delhi. After the selection of school second stage of sampling, was selection of section of ninth class from the school. Researcher randomly selected two IX-classes each containing thirty students.

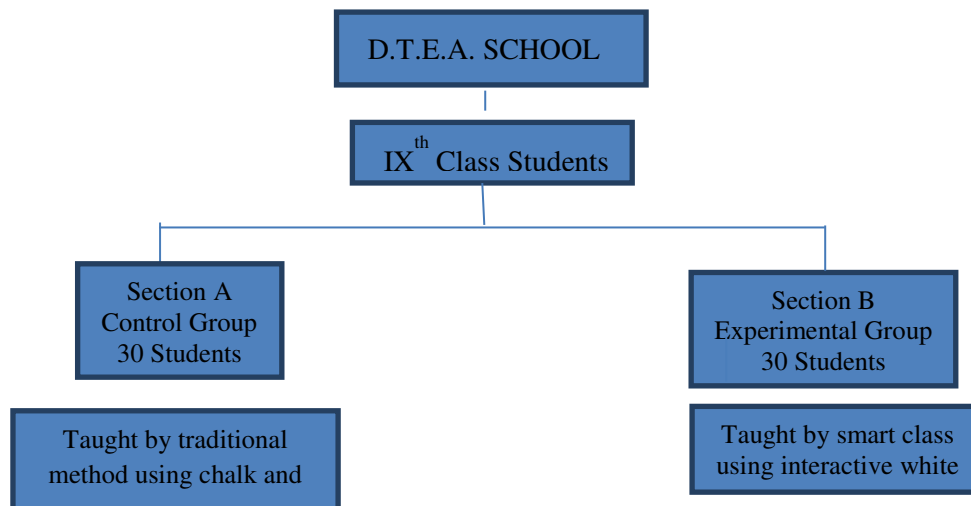


Figure 1: Research design of the study.

Researcher conducted the pre-test with both the groups. After the pre-test, one section i.e. section A was taught with traditional chalk and talk method whereas the experimental group i.e. section B was taught by using interactive board i.e. smart class or digital classroom. Total 70 lessons were delivered, 35 lessons through lecture method using chalk and talk and 35 lessons by using different features of interactive board. In smart class investigator delivered the lectures by using videos, animations, and educational software. For writing on the interactive white board researcher used either keyboard or stylus. Post- Test was conducted after the completion of each chapter of biology as well as after the completion of entire biology syllabus of ninth class.

By conducting Post – test and comparing the scores of achievement test level of IX class learners of government aided school, taught by traditional chalk and talk method and by interactive board, the effectiveness of Interactive Board was studied.

Tool:

Seven achievements test was prepared, out of which one was used as Pre-Test based on the Chapter Cell; rest six was used as post-test. These six post-test was further categorised into two types. The one which of 20 marks based on individual chapters of biology and a final post-test of 100 marks which contain all the five chapters of biology of IX Class. These achievement tests were reviewed by the biology teachers of secondary level. The achievement test was objective type based on the NCERT syllabus of biology of IX class. The test items were in simple easy to understand language. They checked the basic knowledge, comprehension, application and skill of the student. The study was confined to 60 students of IX class of govt. aided school in south Delhi and biology subject of IX class.

4. FINDINGS AND ANALYSIS:

The data obtained from the achievement test was quantitative in nature. Researcher has analysed the data by using percentage analysis and computing the mean of pre-test and post-test. The raw data has been tabulated and presented in the form of a bar graph and line graph.

Pre-test Result	Traditional Class	Smart Class
Mean value	9.5	9.1
Percentage value	47.8%	46%

Table 1: Pre-test result of traditional class and smart class learners.

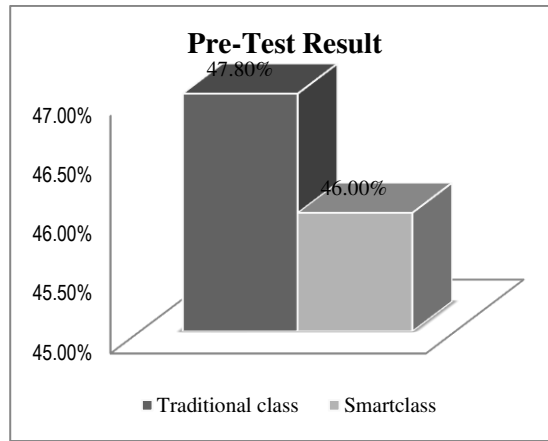


Figure 2: Pre –test result of traditional class and smart class learners.

Before giving the treatment of digital content, pre-test was conducted on both the sections of IX class containing 30 students in each section. The graph indicates the difference between the academic achievements of both the group, the difference in form of mean value was .4 and when it was converted to percentage the difference was of 1.8%. The class with the low mean value i.e. 9.1 was taken as experimental group i.e. they were taught with IWB and the class with higher mean value i.e. 9.5 was taken as control group and taught by traditional chalk & talk method. After the completion of each chapter one post test was conducted and the result of the five post-test was presented in the figure given below.

Post-test result	Traditional Class	Smart Class
Post- test 1	48%	52%
Post-test 2	51%	54%
Post-test 3	54%	56%
Post-test 4	57%	64%
Post-test 5	59%	73%

Table 2: Post-test scores of traditional class and smart class learners.

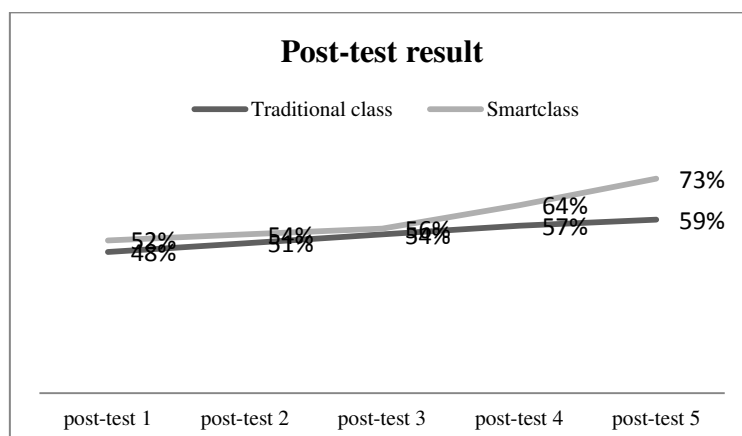
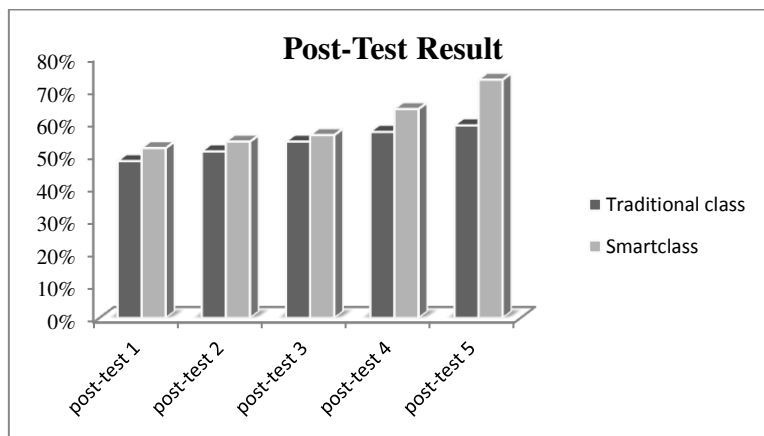


Figure 3 : Post-test result of traditional class and smart class learners

In figure 3 the graphs clearly show that although there is continuous increase in the academic achievement of learners taught by traditional method and smart class. But the level of achievement is higher of the learners taught by smart class. The bar graph clearly indicates the level of achievement in smart class is higher in each test .On comparing the academic achievement of learners after completion of each chapter also support the above result that the achievement level of smart class learners is higher than the achievement level of traditional class learners.

	Traditional Class	Smart Class
Pre-test	47.8%	46%
Post-test	50.4%	56%

Table 3: Result of pre-test and final post-test.

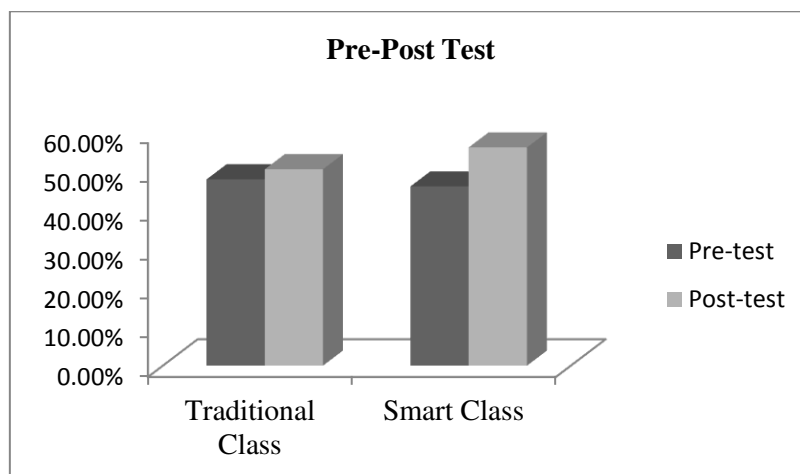


Figure 4: Result of final post-test and combined result of pre-test and final post –test.

The motive behind the pre-test and post-test analysis was to determine the impact of smart class on comprehending the concepts of biology.

Fig 4 illustrated that the learners taught by using smart class showed higher percentage than the learner of traditional class. This support that the understanding level gets enhanced with the use of IWB as here teaching was done by using different sources i.e Internet, videos, 3D images, educational software.

5. RECOMMENDATIONS:

Result showed that teaching become effective using smart class so teachers should be motivated for using smart class approach in their teaching. Emphasis should be given on making teacher techno competent. Training should be given to teachers for pedagogical use of smart class. Technical assistant should be provided in each school so that they can assist teachers in technical related problem of smart class.

6. CONCLUSION:

The result of this study showed that learning through smart class is more effective in comparison to traditional classroom as achievement level of students taught through smart class is higher than the traditional class. It is because interactive white board appeal all the three senses i.e sight, sound and touch which help the students to learn best through these dominant senses. In this study after conducting the pre-test, the group with low achievement scores i.e.46.02% was taken as experimental and the section with higher scores of 47.8% was taken as control. In a series of post achievement test it was found that the level of achievement is continuously higher in smart class learner than the traditional class learner. This supports that tough or complicated topics of biology are also effectively taught by using smart class. In each post-test the achievement level of smart class learner is higher than the achievement of traditional class learner. This may be because the multimedia aspect of IWB is advantageous in increasing the engagement and attention span of learners. Not even there is a continuous increase but the level of increase in the achievement is also raised i.e the increase level is 2% between first and second post –test, in next it is again 2% than 8% than 9%. This may be because IWB increases the motivation among students. Motivation is considered one of the key factors behind any success. Essence of academic achievement of student lies also on motivation. Thus it can be concluded that because of various aspects of smart class discussed above it shows that it helps in enhancing the teaching learning process by creating a conducive learning environment.

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