



A comparative study of traditional and smart classrooms in relation to their creativity and academic achievement

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ABSTRACT

The education and health are two major components for development of any country. The traditional system of teaching has been replaced with latest technology. The technology is one of the important components for the advancement. The need of technology is also felt in teaching and learning to make it more meaningful. The process of attendance, assignments, homework, evaluation, management and many more issues become easier with the help of technology. The application of technology is not only useful in management but also to control them. The education imparted through interactive whiteboard is also known as Smart classroom. It is one of the important technology-based teaching aids used now-a-days. The studies revealed that the use of smart class room technology in the teaching and learning process is increasing day by day. It enhances the capability, interest, and motivation etc. of both tutor as well as students. Hence, it was felt necessarily to make an attempt to see the difference between academic achievement and its relation with creativity. This paper focuses on the comparison between the students which are studying in the traditional classroom and smart classroom in relation to their creativity and academic achievement. In this study students of VIII standard, aged from 13 to 15 years old were selected. The students were divided into two groups i.e. experimental and control, taught in smart classroom and traditional classroom respectively. The Baqer Mehndi's verbal test was used to measure creativity. This study measured the academic achievement through researcher's self-made class test for students. The t-values were used to compare the academic achievement of students studying in smart and traditional classrooms. Pearson's Coefficient of correlation was used to find out the relation between creativity and academic achievement. It was found that was a significant difference of student's academic achievement when taught with smart classroom and also found positive relation between academic achievement and creativity.

Keywords: Academic Achievement, Creativity, Smart Classroom technology and Traditional classroom,

Introduction

Now-a-days technology is widely used in our daily life. The technology is one of the important components of the advancement. As the technology advances, the teaching methodology also changes. The traditional system of teaching has been replaced with advance teaching methodology. The process of attendance, assignments, homework, evaluation, management and many task become easier with the help of advance technology. Now, education is imparted through new innovative methods like Cloud classrooms, NPTEL, Online Courses, Smart Classrooms etc. No doubt, These technologies cannot replace teachers, but a blended approach is needed.

Smart classrooms are used in maximum schools over to traditional classes. These classes used to develop curiosity,

interest, the reflective thinking among students. Academic Achievement, Intelligence, creativity, attitude, retention, etc. are measurable parameters of a good education. This research paper helps stakeholders not to follow the new technology blindly, but get well versed with its effects.

Smart Classroom

A smart classroom is a classroom that has an instructor station equipped with computer and audio-visual equipment which allow the instructor to teach using a wide variety of media.

The Smart Learning Methodology

The curriculum and lesson planning is pre-installed by the software company. The company ensures that all teachers and students benefit from the lesson prepared by experienced teachers and curriculum developers. The web-based system provides a single, common infrastructure to manage teaching, learning and training initiatives in the smart schools. The tech-savvy students not only enjoy their studies through these methodologies but keenly participate in the learning process. Smart classes have changed the process of learning.

According to *Kumari et al., 2013* in comparison of the traditional classroom audio-visual aids in the classroom ensure that each child understands and grasp better. At the smart school a combination of e-learning and traditional teaching

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method called as *blended learning method* is used. By using the relevant Information and Communication Technology (ICT) teaching and learning tools, the computer labs and web portals, the combination of e-learning and traditional teaching assists every student to achieve his or her goals in the classroom.

Subject Attainment Target

Smart school teachers and students in meeting have following subject attainment targets :

1. It enables every student to set his or her own pace of study.
2. It is interactive.
3. It enables topics to be shown in audio and video sequences.
4. Smart learning fosters student collaboration.
5. It encourages creativity.
6. It encourages students in the use of research skills.
7. Students may access the web portal at any time through the internet.
8. Students are unbound by time.

Academic Achievement

An important measure to know whether there is any investment found in students or not in due course of studies. According to Goods,1973 "Academic achievement as a knowledge attain or skill develop in school subject usually designate by test score or by mark assign by teachers or by both". Academic achievement is the key factor to judge to have some impression about abilities of a person.

Creativity

According to Mumford, 2003 creativity involves the production of novel and useful products. It is defined as "the process of producing something that is both original and worthwhile" or "characterized by originality and expressiveness and imaginative".

According to Nazima T and Hummara A, 2012 Creativity is a process by which something new, either an idea or object in the form or arrangement is produced. Creativity is seeing something in a new relationship. It is one's abilities or skills expressed in a new combination. Creativity can be seen in thinking, in expressed activities, in manipulating objects or materials. Creativity is an investigation of new ideas. It is the determination of some unique characteristics. It is an urge in the person to reveal in an object something new. It is also learning to estimate and to deal with the new situations on their unique characteristics.

According to Hamzah, et al., 2009 the software provided in smart schools is referred as sophisticated learning tools in which every topic is covered in the software with the schedule and the topics. It means no need to open the textbook. The students looked at this software as new inventions that distinguish smart schools from other schools and at the same time offer them advantages compared to other schools

According to Narain, S., 2009 one factor that is related to creativity but is not identical, is intelligence. The term intelligence refers to individual's ability to understand complex ideas to adapt effectively to the environment, to learn from experience, to engage in various forms of reasoning to

overcome obstacles by careful thought. Author finds that there is no firm evidence that creative individuals are either more or less intelligent than other people; definitely there exists a correlation between the two, which has a positive low correlation. Intelligence is necessary but not sufficient to produce creativity.

Kamaei and Weisani, 2013 assess the relationship between achievement motivation, critical thinking and creative thinking with academic performance of secondary girl's school students. Authors (Bagceci and Ozyurt, 2014) found that there is a significant positive relationship between the flexibility aspect of the students' creativity and SBS success on the subjects of Turkish, Math, Science and Social Sciences and also that there is a significant positive relationship between the originality aspect of the students' creativity and SBS exam success on the subjects of Math and Social Sciences. The means of creative thinking skill levels of the students are compared and it is observed that the mean of fluency is the highest and the mean of flexibility is the lowest.

Kumar J. and Rani, 2014 studied to find out the difference in creative thinking abilities of senior secondary school students in relation to their intelligence. The findings of the study reveal that superior intelligent students and low intelligent students differ significantly on fluency superior intelligent students are higher fluency than the low intelligent students. Similarly, superior intelligent students and low intelligent students differ significantly on flexibility too. However, there is no significant difference found between superior intelligent students and low intelligent students regarding originality and creativity. It shows that originality there is no significant difference found between superior intelligent students and low intelligent students regarding originality and creativity. It shows that originality and creativity are equally distributed between superior intelligent students and low intelligent students and creativity are equally distributed between superior intelligent students and low intelligent Student.

Namia Y., Marsooli H , Ashouri M (2014) studied the "The Relationship Between Creativity And Academic Achievement. Authors investigated relationship between students' creativity and academic achievement. The sample size of 72 subjects was conducted to collect data from the student questionnaire and Torrens creativity was used. Field of information gleaned from questionnaires and was analyzed by using both descriptive and inferential statics. These results are captured components of creativity and achievement, and there were positive significant relationships.

Geeta R, Suman D, 2013 studied the relationship of Creativity and Achievement Motivation of Senior Secondary Students and result revealed that there is no significant relationship between creativity and Achievement motivation. Creativity and Achievement motivation of government senior secondary school students are not correlated with each other. The result also revealed that achievement motivation of government senior secondary school students do not differ significantly on the basis of their level of creativity. Achievement motivation mean scores of high creative and low creative students of Govt. Senior Secondary Schools do not differ significantly. It may therefore be concluded that achievement motivation level of students of govt. senior secondary schools do not affect their creativity level.

Nazima T and Hummara A, 2012 studied the factors affecting the creativity levels between the private and government school children in Srinagar city (7th-10th grades). The variation in the school environment was found to be the major factor that affected the creative abilities among Government school students which is due to lack of opportunities, facilities and encouragement in Government schools. Further, gender as a variable could not make any difference among students.

Kant, R 2012 studied creativity in relation to TV viewing habits of secondary school students. The result of this study shows that on some behalf TV viewing is negatively related to creativity but overall TV viewing is positively related to creativity of secondary school students. Students viewed variety type program on TV however they were low achiever or high achiever gain knowledge and information through TV. In this study relationship between creativity and TV viewing was positive overall but not significant.

Sumati S. and Chaturvedi S., 2014 studied to examine the difference in scholastic achievement of high and low creative students. Results revealed that high creative group had high scholastic achievement. In the level of gender high creative boys had better scholastic achievement than their counterpart low creative boys.

Need of the study

There are number of researches which focused on improving student learning, participation and increasing faculty, staff and student exposure to smart board technology. Student perceptions, attitudes and attention to the use and non-use of an interactive whiteboard during instruction are measured. But following variables like Creativity and Achievement are still not considered with smart classroom technology. This study will present a comparison between traditional and smart classroom teaching in Indian scenario using Creativity and Academic Achievement variables.

Objectives of study

The main objective is to compare academic achievement in relation to creativity of students of Smart Classroom technology to traditional classroom.

- 1) To compare the academic achievement of students studying in smart classroom and Traditional Classroom.
- 2) To find out the relationship between intelligence and academic achievement of two different classroom.

Hypothesis

- 1) There exists no significant difference between academic achievement of students studying in Smart Classroom and Traditional classroom
- 2) There exist no relationship between creativity and academic achievement of students studying in Traditional classroom and Smart classrooms.

Sample

The sample consisted of 40 students, which include boys from Panchsheel balak inter college, Noida. Students are distributed randomly into two groups one is control group taught traditional method of classroom and another group is experimental taught through smart classroom technology.

Procedure of Data Collection

Before giving any instructions to both the group, a pre-test is conducted in science. After conduction of Pretest lesson is taught to both the groups. Instructions given to control group through chalk and talk in traditional classroom and experimental group by following a Smart Classroom Technology through interactive whiteboard. After the completion of the content in both groups, students were administrated post –test. The same test is used as pre test and post test with same marks distribution; number of items, duration and maximum marks are same. The Baqer Mehandi’s Verbal Test of Creativity is also employed to both the groups.

Collection of Data

Investigator personally went to the school for administration of the test. The investigator administered the Baqer Mehandi’s Verbal Test of Creativity was employed and for academic achievement test was constructed by the investigator to examine the academic achievement in Science of standard VIII class, science students.

Result and Discussion

Table 1. Coefficient of correlation between creativity and academic achievement on traditional classroom technology

Variable	Academic Achievement
Creativity	0.41

Table 2. Showing coefficient of correlation between creativity and academic achievement for Smart classroom Technology

Variable	Academic Achievement
Creativity	0.55

Analysis of coefficient of correlation between Creativity and Academic Achievement on traditional classroom technology is shown in table 1. There is a significant positive correlation between creativity and academic achievement. The correlation coefficient of 0.41 is significant at 0.01 levels. Table 2 shows a significant positive correlation between creativity and academic achievement. The correlation coefficient of 0.55 is significant at 0.01 levels. It may be therefore concluded that there is a positive relation creativity and academic achievement, whether the students are of traditional classroom or smart classroom. This correlation shows that with the increase or decrease in achievement, there will be impact on creativity of students and vice –versa is also true. Result of the present study support Studies of authors Yaghoob Namia , Marsooli H , Ashouri M (2014) which revealed the positive significance between creativity and academic achievement of both government schools and private schools.

Table 3. Statistical Analysis of Means of Pre test Scores of Academic Achievement in Science among Class VIII Students in Experimental and Control Groups

Groups	Mean	variance	t-value
Experimental Group	4.9	7.49	1.05
Control Group	3.9	10.39	

Table 4. Statistical Analysis of Means of Post test Scores of Academic Achievement in Science among Class VIII Students in Experimental and Control Groups

Groups	Mean	variance	t-value
Experimental Group	17.4	12.04	2.10
Control Group	14.6	22.12	

Table 3 deals with study of teaching of science through instructions imparted to students through Smart Classroom Technology and Traditional Classroom of pre test , it is evident that on an average, the performance of Experimental and control group on pre- test is almost the same and the difference between mean scores of students on pre-test is not significant, the value is smaller than the tabulated value at 0.01 and .05 level of significance and therefore observed difference in mean scores of pre-test is not significant. It means when no instruction was provided to both the group, there was no significant difference exist. Similar results were shown by Menon A,(2015) that when no instructions was provided to traditional and smart classroom no significant difference exist.

Table 4 deals with the study of teaching of science through instructions imparted to students through Smart Classroom Technology and Traditional Classroom of post test scores, it is evident that the t-value, mean value of Post-test scores of Experimental and control group is calculated to be 2.10 which is greater than tabulated value at 0.05 level of significance i.e. 2.02 and can be significant at 0.05 levels. The t-ratio value depicts the observed difference in mean scores of post-test for control and experimental group is significant. This means smart class room technology helped students to improve their academic achievement and is a suitable teaching aid which can be used in era of technological advancement. Similar studies results of Takawale and Kulkarni (2016) There is significant difference found between both 'Group-A' and 'Group-B' students in terms of academic achievement when instructions to group-A students were provided in a traditional way and instructions to group-B students was provided through smart board.

Conclusion

After statistical analysis of the data, this study arrived at the following conclusions:

1. There is significant and positive correlation found between creativity and academic achievement of secondary level students.

2. There is no significant difference between the academic achievements of secondary level students when no instructions to both groups are provided.

3. There is significant difference found between both experimental and control group following smart classroom technology and traditional group respectively and concludes that smart technology classroom is an effective way of instruction method.

This study found a relationship between academic achievement and creativity of the students when no instructions is provide no difference exist and then significant difference found between both experimental and control group following smart classroom technology and traditional group respectively. This study found that smart technology classroom is an effective way of instruction method. Through the smart classroom technology students will become more engaged with the subject matter. It will make learning an enjoyable experience for them while improving their performance in school and enhancing their creativity.

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