

EFFECT OF SMART CLASS ON CONCEPT ATTAINMENT AND ACHIEVEMENT IN SCIENCE AMONG SECONDARY SCHOOL STUDENTS

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Paper Received On: 20 JAN 2024

Peer Reviewed On: 28 FEB 2024

Published On: 01 MAR 2024

Abstract

Education plays a pivotal role in the growth of society and formation of a true human being. With the advent of the new technological era, education has acquired multiple objectives. Basically, the institution has undergone a radical change in recent times. Quality in the field of education, when we focus on students it's may be the facilities provided to them, when concerned with teachers it is the teaching learning process. Quality education is an essential requisite in today's competitive environment. Education is a process which revolves around teacher, student, and curriculum, where teacher must play a very important role. The process of teaching and learning succeeds when it is properly planned and meticulously executed. With the changing scenario of education, it is supposed to find ways and means to improve the teaching techniques to cope with the need of the times. Technology benefited us in every aspect of life from communication to education.

Computer is as interesting innovation in educational technology. Its marvels have been demonstrated and seem to revolutionize the whole spectrum of education. It has better flexibility and more versatility than any of the teaching aids. It deals with the problem of quality in education more effectively and a more flexible kind of branching is possible on the part of the computer according to the student's performance. It utilizes the principles of programmed learning. It also utilizes the concepts of audio-visual education, communication theory and learning theory. A good amount of information stored in the computer is made available to the learner more readily than any other media. Smart classrooms are technologically enhanced classrooms that foster opportunities for teaching and learning process. The concept of digitalized classroom has not only made education easy, but it gave the students power to enhance their academic performance.

KEY WORDS- Smart classroom, concept attainment, achievement

INTRODUCTION: Education is the most important tool for the betterment of humanity as well as developing modernization in civilization. Education is at the heart of both personal and community development. Quality education enables students to develop all of their attributes and skills to achieve their potential as human beings and members of society. Quality education therefore implies quality teaching by training teachers and supporting them with modern teaching aids, tools and methodologies like smart classrooms. Quality education is supported by three keys like quality teachers, use of quality learning tools and learning environment.

Technology enabled education peeping deep into the classrooms, paving a way to smart education. Smart classrooms foster creativity and an interactive environment which would help in bringing in more innovative ideas, more queries and more solutions. A smart classroom is a technologically enhanced learning classroom that enhances the way of teaching and learning digitally. The classroom is integrated with digital displays, tabs, white board, assistive listening devices, and other devices. A student can learn better through visualization. Such teaching helps to maintain the interest of the students and focus by engaging them fully for the entire learning experience. Quality education is an essential requisite in today's competitive environment. Smart classrooms are technologically enhanced classrooms that foster opportunities for teaching and learning process. Now the students are thrilled at the concept of innovative and interactive learning process. The concept of digitalized classroom has not only made the education easy, but it gave the students power to enhance their academic performance.

CHARACTERISTICS OF SMART CLASSROOM

1. **ADAPTIVE LEARNING-** Any classroom always has students of different types of learning ability in it which often makes it difficult for teachers to make sure that all of them understand the concepts. The modern approach of adaptive learning gives students the freedom to learn at their own pace and in the way they are most comfortable with.
2. **COLLABORATIVE LEARNING-** Learning through collaboration is one of the most effective forms of learning. Collaborative learning activities include collaborative writing, group projects, joint problem solving, debates and more.
3. **STUDENT-CENTRIC-** In a smart classroom teachers play the role of facilitators. They help students think critically. Students discover and master new concepts. Student-centric classroom environment puts student's interest first and are focused on each student's need, abilities and learning styles.

4. THE UPGRADED KIND OF EDUCATION- This upgraded kind of education is very interesting for children. It is an innovative idea to change our boring system into a smart and innovative system of teaching learning activities.

5. HIGHLY EFFECTIVE- Smart classrooms are considered highly effective and help students grasp the concepts quickly. Smart classrooms also reduce distraction and students can concentrate more and retain more information.

6. MOTIVATE STUDENTS-The smart classroom motivates the students more than traditional classroom. The audio visuals are very interesting for students and help build interest in them.

7.INCREASE PRODUCTIVITY- It helps in developing interest among students and create better learning outcomes. It not only enhances the aesthetic of teaching but also helps students visualize concepts in their minds making learning easier.

8. TIME SAVING TECHNOLOGY-With the help of the smart class notes and presentations can be shared directly with the students. Various tools can also help teachers to distribute assignments, provide feedback and get involved in discussion.

9. ENHANCED LEARNING-A smart classroom provides enhanced teaching and learning experience. It provides the best technology for education by using tools like self-assessment and e-library. The use of technology in the classroom for teaching increases the understanding of the students. The topic becomes clearer, and the base of the subject becomes stronger.

10. CONNECTIVITY- It is widely spread in all the regions for collaborations of distance learning. With these technological tools, students and teachers can collaborate and increase their overall participation in the learning process.

11. IMPROVES SKILL- The classroom that is completely equipped and visually appearing makes students think and acts logically. It helps in developing skills in their interested field. With the help of the internet students are getting exposed to critical things and problem-solving skills.

12. IMPARTING KNOWLEDGE- The technological tools used in the classroom are positively changing the way of teaching. Teachers impart knowledge to the students and at the same time the teaching learning process continues with sharing of ideas of both.

13. USE OF TECHNOLOGY- Smart classes are technologically enhanced and information can be illustrated with the help of images, graphs, flow charts, videos etc. The smart classes

help teachers to deliver lectures more effectively for their better learning experience. It has a digital board, projector, computer, internet facility for imparting quality education.

STUDIES RELATED TO SMART CLASS-

Vardhini, V.P. (2003) “To test the developed multimedia vs. instructional strategy for teaching science (physics and chemistry) at secondary level”.

OBJECTIVES

To test the developed multimedia vs instructional strategy for teaching physics at secondary level.

To test the developed multimedia vs instructional strategy for teaching chemistry at secondary level.

FINDINGS: There is no significance difference in developed multimedia vs instructional strategy for teaching physics at secondary level.

There is no significant difference in developed multimedia vs instructional strategy for teaching chemistry at secondary level.

Desai, K. Y. (2005) “Efficacy of different instructional media in the teaching of science to class VIII pupils”

OBJECTIVES: To study the efficacy of instructional media in the teaching of science to class VIII pupils.

FINDINGS: There is no significance difference in the efficacy of different media in the teaching of science to class VIII pupils.

Eng-Tek Ong (2009) “Effectiveness of smart schooling on students’ attitudes towards science”.

OBJECTIVES: To study the relative effect of smart and mainstream schooling on students’ attitude towards science.

FINDINGS: The result indicated that the level of attitude towards science of students who had participated in the smart schools is significantly higher than the level of attitude towards science of students who had participated in the mainstream schools.

Prakash Chandra Jena (2013)” Effect of smart classroom learning environment on academic achievement of rural high achievers and low achievers in science.”

OBJECTIVES: To study the effect of smart classroom learning on academic achievement of rural high achievers and low achievers in science.

FINDINGS: The result of the study indicated that the students taught through smart class have scored better academic achievement than students taught through traditional method.

OBJECTIVE

1. To compare the effect of smart class and traditional class teaching on the achievement of secondary students relating to concept attainment in bioscience.
2. To study the concept attainment and academic achievement of class-IX students with respect to gender.
3. To compare the concept attainment and academic achievement of class-IX students of urban area and rural area.

HYPOTHESIS

1. There is no significant difference between the effect of smart class and traditional class teaching on the achievement of secondary students relating to concept attainment in bioscience.
2. There is no significant difference between concept attainment and achievement in bioscience of boys and girls learning through smart class.
3. There is no significant difference between concept attainment and academic achievement of urban students and rural students.

METHODOLOGY: The current study employed an experimental design. The pre-test, post-test, control group design was used. This study consisted of 120 students of class-IX from two different schools. A total of 120 students were divided into two groups, 60 were assigned to the experimental group and other 60 were assigned to the control group.

The students of experimental group were taught through smart class and the other students were taught through traditional method. After 21 days post test was administered to know about the achievement of two groups.

FINDINGS: Accordingly the investigator had developed achievement tests in biology for the students of class-IX.

Scoring was done by assigning one mark for each correct response and zero for each incorrect response and one omitted. Scores thus obtained were called absolute scores. Maximum score for each achievement test in biology was 50.

These achievement tests was administered on all the children belonging to eight different groups during pre-test and post-test. Table no 1 shows the mean and SD of scores on achievement test in biology.

Table -1: Mean and SD of the scores of different subgroups on achievement test during pre-test and post-test period.

Treatment/ Area	Sex	Pre-test		Control		Post-test		Control	
		Experimental				Experimental			
		M	SD	M	SD	M	SD	M	SD
URBAN	Boys	15.80	3.59	15.80	3.51	37.67	5.69	25.00	1.89
	Girls	16.07	3.58	16.00	3.57	41.40	3.92	25.93	2.15
RURAL	Boys	10.00	2.33	9.93	2.28	38.73	5.33	24.13	2.39
	Girls	10.73	2.96	10.53	3.09	35.80	6.04	23.47	1.92

Table no.1 indicates that during pre-test the mean scores was highest among urban girls belonging to experimental group where as the mean value was lowest among the rural boys belonging to control group. It was observed that during pre-test the mean score of the urban students were higher than the corresponding rural group of students in both experimental and control group.

An analysis of the mean score of experimental and control group of students with different area and sex as revealed from the table no-1 indicates that the mean value of both experimental and control group of students were almost the same during pre-test. However the mean value during post test clearly indicates that the mean score of all the experimental students belonging to different area and sex were higher than the control groups.

This clearly indicates that the performance of experimental group of students irrespective of area and sex was better than the control group students during post test in achievement of biology. Greater SD among the experimental group of students during post test also indicates that there exist inter individual difference in the learning process through smart classroom.

Table-2: Test of significance (t-test) for the main effect of treatment on the achievement of biology during pre-test and post-test

Groups	t- value	
	Post test vs pre test	P
EUb vs CUb	8.99	0.01
EUg vs CUg	16.90	0.01
ERb vs CRb	13.23	0.01
ERg vs CRg	8.60	0.01

From the table no.2 it was revealed that the t values were significant at 0.01 level for all the groups belonging to different area and sex. It was also observed from the mean gain values that all the experimental groups had higher mean values than all the groups belonging to control group. The experimental group students perform better than the control group students. So the smart classroom teaching was effective than the traditional teaching method.

CONCLUSION: Smart class is the revolution in the today's classrooms. Teaching and learning process is child centric and become very interesting and effective. Education through new technology like the smart class has made it easier for the teachers to relate the subject to the students. Quality education is an essential requisite in today's competition environment.

REFERENCES

- Best , john w. & Kanha . James V. (2011) , “Research in education “ 10 th ed., New Delhi :learning pvt.ltd.
- Das , Kothari & pathy M.K., (2010) “Quality Concern in Educational Initiatives in the context of globalization “, Rourkela
- Education Research and Reviews ,vol. 5(7),pp.347-353, July 2010
- Education Research and Reviews, vol. 8 (6), pp.347 -353, July 2011
- Khosla ,D.N., “ A Report on Evaluation for Quality Secondary Teachers Education “, New Delhi : New Delhi :NCERT ,2005
- Koul, Lokesh (1984), “ Methodology in Educational Research “, New Delhi : Vikash Publising House Pvt. L td. ,pp 430-462

Cite Your Article as:

Sasmita Pradhan. (2024). EFFECT OF SMART CLASS ON CONCEPT ATTAINMENT AND ACHIEVEMENT IN SCIENCE AMONG SECONDARY SCHOOL STUDENTS. Scholarly Research Journal for Interdisciplinary Studies, 12(81), 281–287. <https://doi.org/10.5281/zenodo.10884888>