

## **EFFECTIVENESS OF E-LEARNING WITH SMART BOARDS ON ACHIEVEMENTS IN SCIENCE**

**Taksha Shambharkar, Ph. D.**

*Assistant Professor (Mahatma Gandhi International Hindi Vishwavidyalay, Wardha  
taksha100@gmail.com*

### **Abstract**

*Educational technology plays a very important role in every aspect of education. Technology is very efficient medium of instruction. This particular research focused on the use of smart boards for teaching science at primary level students. In order to observe the effect of impact of E-learning with smart boards on achievements in science on primary school students, researcher used smart board for teaching science to experimental group. It was seen that smart boards are comparatively effective than traditional method of teaching of science.*

*The researcher has selected this topic as it is the demand of the present situation. As we all know most of the schools have already started using these smart boards. Parents also want their children to be studying in such schools where these kind of latest educational implements are being used. Students also enjoy the new learning experience especially the ones in primary school. But does the use of these implements really have an impact on the overall development of the students especially on their achievements at the primary school level is to be studied. This research will surely help in deciding the latest trends in technology like smart boards be utilized for better learning outcomes in primary level students.*



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## **INTRODUCTION**

Information and technology plays a fundamental role in the global economy where knowledge is becoming the primary engine of growth and development and one feels outdated if not using them. Technology plays a vital role in every aspect of life. All these technological tools are very powerful source of knowledge. The influence of these over powerful technological tools has pervaded all the aspects of the education, business and economic sectors of our world. There is no doubt that just as the computer has established itself firmly in the world of business and communication technology, it has also succeeded in acquiring a fundamental role in the educational process.

## **Background of study**

### **E-Learning**

E-learning is the use of electronic media and information and communication technologies (ICT) in education. E-learning is broadly inclusive of all forms of educational technology in learning and teaching. E-learning is inclusive of, and is broadly synonymous with multimedia learning, technology-enhanced learning (TEL), computer-based instruction (CBI), computer managed instruction, computer-based training (CBT), computer-assisted instruction or computer-aided instruction (CAI), internet-based training (IBT), web-based training (WBT), online education, virtual education, virtual learning environments (VLE) (which are also called learning platforms), m-learning, and digital educational collaboration. These alternative names emphasize a particular aspect, component or delivery method.

### **Definitions**

E-Learning is the use of technology to enable people to learn anytime and anywhere. e-Learning can include training, the delivery of just-in-time information and guidance from experts

#### **Key advantages of e-learning include:**

- 1.Improved interactions between students and instructors.
- 2.Provision of tools to enable students to independently solve problems,.
- 3.Acquisition of technological skills through practice with tools and computers.
- 4.No age-based restrictions on difficulty level, i.e. students can go at their own pace.

### **The Smart Board**

A SMART Board is one brand of interactive whiteboard. At its simplest, an interactive whiteboard allows you to project an image and 'interact' with it by writing on it or moving it around. The SMART Board is connected to a computer and works with a projector. The projector displays what is open on the computer and, rather than using a mouse or keyboard (although you can use those also), the SMART Board is a touch screen, which allows you to manipulate anything on the screen using your fingers. It is similar to how you would use a tablet or I -Pad. Special pens are included in a SMART Board to make writing in different colors quick and easy.

Older versions of the SMART Board only worked with one point of contact on the board, so multiple people could not be touching the board at the same time. The upgraded SMART Board 800 and newer models are equipped with multi-touch technology, which allow up to four students to collaborate using the board by responding to multiple touches at the same

time. This means two students could be solving a math problem at the same time on the board or labeling a diagram together easily.

The Smart Board is tomorrow's technology and is bound to change the look of classrooms forever. Using smart boards in your classroom can help you stay ahead with technology that could make the education process simpler and perhaps even more productive.

A number of teachers may not be aware of the benefits of using a Smart Board in the classroom as a teaching tool. While the traditional white board already has everyone's attention, the electronic device is a new technology that is slowly gaining popularity due to its interactive power. The digital screen allows images from the computer to be displayed on a board. It can also be modified on the screen itself, using a pen or a highlighting tool. Its touch screen feature allows teachers to run programs directly from the screen simply by tapping the application with her finger and even makes scrolling easy.

Smart Boards are becoming an essential component of every classroom. Some reasons for this trend is that:

- It can accommodate different learning styles. Tactical learners can use the screen and learn by touching and marking at the board, audio learners can have a discussion and visual learners can observe the teaching on the board.
- It is neater and does not have the cleanliness hassle and is therefore easier to maintain.

Most teachers understand the "why" but struggle with the "how". Here are some ideas on how you can use Smart Boards.

- Use it as a tool for note-taking. Students can come and write important points on the board. Alternately, you can appoint a student to type out notes on the computer while you talk, so that the other students can view and take them down.
- Brainstorming in the classroom can be fun with a Smart Board. You can not only put together text/ ideas but also images, diagrams or videos.
- Classroom games can be played with ease on the board. Board games in particular can be played on the board itself.
- All forms of media– videos, photographs, graphs, maps, illustrations, games, etc. – can be used on the board, making it incredibly dynamic in nature. This expands the range of content that you can use for teaching or presenting new information.

### **The Advantages of Having a Smart Board in a School Classroom**

The interactive whiteboard -- Smart Board is one brand -- is a technological advancement that has significantly affected teaching and learning in the high school classroom. A Smart Board

or generic version provides quick and easy access to online resources and enables teachers to reach more students by addressing a variety of learning styles. Graphics, music and other instructional resources can be called upon at the push of a button. Additionally, their interactive nature provides the opportunity for students to become involved in the instructional process.

- 1.The interactive electronic whiteboard is great for demonstrations.
- 2.The interactive electronic whiteboard is a colorful tool. Research indicates that students respond to displays where color is employed.
- 3.The board can accommodate different learning styles.
- 4.All ages of students respond favorably to board use.
- 5.The interactive whiteboard is an excellent tool for the constructivist educator.
- 6.The boards are clean and attractive tools.
- 7.Students with limited motor skills can enjoy board use.
- 8.It is interactive.
- 9.The teacher at the front of the class and the whole class engaged together.

### **Need and Importance of the study**

We are living in an age where technology is taking over. Technology is becoming more and more advanced. As we move further into information age, E-learning is becoming more prevalent and programs and instruments are being developed to streamline and enhance the learning experience. Over the years, science and technology have improved a lot and new learning generations know the technology very well. They are able to work with it, on it and most importantly they can relate themselves with it.

Researchers had selected science for teaching through smart boards at primary level as we know that science is a very vast, complicated, concept based and technological based subject. It is very important that this subject should be taught in such a manner that we can clear students' concepts and students also get interest in teaching science.

How technology can be utilized in the classroom for the teaching-learning process to be made more interesting is to be seriously thought upon. As the introduction of technology such as the use of Smart Boards into classrooms changed how teachers taught in recent decades, and do these newer tools/ aids like Smart boards fit..or break..this pattern? When we look deeper do we see any change over time? How teachers and students feel about this? Do teachers still feel comfortable using old ways than new innovative technological ways of teaching? And most importantly has this transition improved learning. sparked

interest for students, improved results, had positive or negative impact on their achievements in primary level students etc.?so researcher has selected topic for research.

### **Uniqueness of Topic**

The researcher has selected this topic as it is the demand of the present situation. As we all know most of the schools have already started using these smart boards. Parents also want their children to be studying in such schools where these kind of latest educational implements are being used. Students also enjoy the new learning experience especially the ones in primary school. But does the use of these implements really have an impact on the overall development of the students especially on their achievements at the primary school level is to be studied. This research will surely help in deciding the latest trends in technology like smart boards be utilized for better learning outcomes in primary level students.

### **Statement of the Problem**

#### **Effectiveness of E-learning with smart boards on achievements in science.**

#### **Operational Definition:**

1) **Achievements:** A result of hard work, something that has been done or accomplished successfully through effort, exertion, skill, practice, or perseverance.

3) **E-learning:** E-learning or electronic learning is a relatively new form of educating students through the use of computers as an instructional medium. E-learning is used to educate people of all different ages. It includes –multi media online activities, print materials, Smart boards, web, e-mail, Internet ,CD-Rom, computers software, audio/video tapes and TV or radio.

4) **Smart Boards:** A smart board is an interactive whiteboard connected to a computer that allows users to deliver dynamic and interactive lesson, navigate the internet, write notes in digital ink, and save work-all with the simple touch of a figure. Its a complete learning system that enables you to streamline your teaching-learning experience, ensuring students are at the centre of every lesson.

### **Objectives of the Problem**

1. To study a topic of science through traditional chalkboard method amongst the primary school students.
2. To study this same topic of science through e-learning using smart boards same set of primary school students.
3. To study the effectiveness of e-learning using smart boards.
4. To compare the achievements of students.

### Hypothesis of the Study

- 1) There is no significant difference between pre and post test achievements scores of primary school students.
- 2) There is no significant difference between girls and boys Post Test achievements scores of primary school students

### Variables

1. Independent : E-learning using Smart boards
2. Dependent : Achievements of students of sixth standard.

### Scope and Limitations of the Study

#### Scope:

The study will be for all the primary school students of Nagpur City.

#### Limitations:

1. The study will be confined to Nagpur City
2. The study will be confined to English Medium students of primary school in Nagpur City
3. The study is for only 6<sup>th</sup> Standard students of Nagpur City.

### Method of this Research

Experimental Method was adapted by the researcher for present study.

### Research Design for this research:

Pre-Test -Post test parallel group design was adapted by the researcher for present study.

### Population

For the present study, 'Bhonsala Public school 'of Nagpur was selected.

### Limitation

The present study is only for class VI th. class students from Bhonsala Public school of Nagpur city. The children studying in std.VI were 60 which constitute the population for this study.

For the present study from the population obtained from class V th of "Bhonsala Public school" of Nagpur city is found to be 60 out of these 20 students of controlling age and sex were selected.

### Sample selected

Sr.n	Name of school	Selected sample	girls	boys
1	"Bhonsala Public school"	40	20	20

**Tools for the present study:**

Pre -Test and post -test was created by the researcher. objective type questions and short answer questions were added in the test.

**Procedure of administration of Study and Data Collection:**

With the prior permission of principals of the selected English medium schools the researcher conducted the research by teaching science, one group of students through traditional method and another group through e-learning using smart board. Pre-test was administered to all the selected students based on their previous knowledge. The marks were noted down of both the groups. likewise post-test was administered for both group. The obtain marks by the students were noted.

**Method of Scoring:**

The scores obtained on pre test and post-test were used for testing the hypothesis. The mean, standard deviation and ‘t’ value were computed to test the hypothesis.

**Data Collection**

With the prior permission of principals of the selected “Bhonsala Public school” the researcher conducted the research by teaching to the controlled group through traditional method and to experimental group by smart board.

Pre-test was administered to all the selected students who were taught by controlled group. The marks were noted down Likewise post test was administered for the group who were taught by smart boards. The obtained marks by the students were noted.

**Analysis and Interpretation**

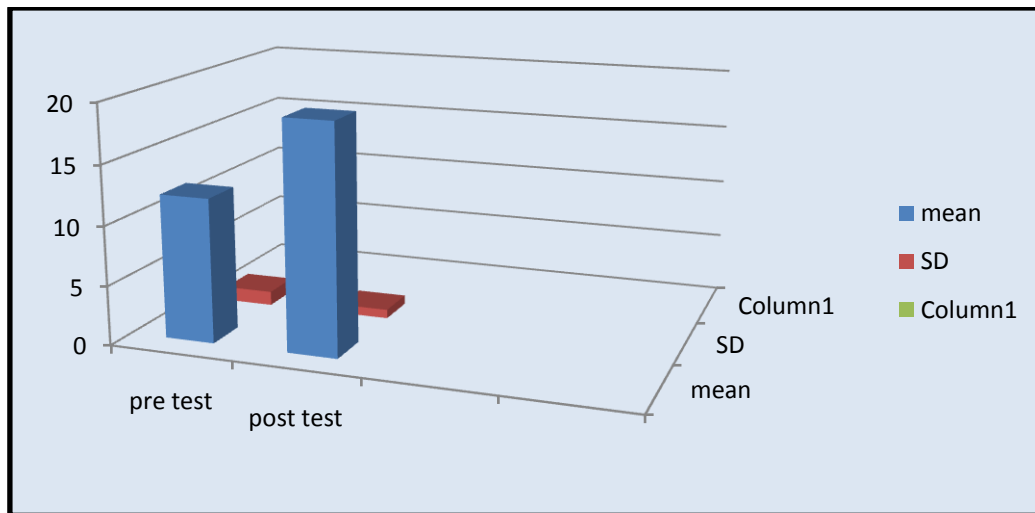
**Statement Of hypothesis No. - 1**

There is no significant difference between pre and post test achievements scores of primary school students.

**Table NO.1 The mean, standard Deviation and “t” Value of pre and Post Test**

Group	N	M	SD	‘T’ Value	Degree of freedom	Table Value
Pre-test	20	12.14	1.188	21.53	Df-38	0.01 -2.81
Post-test	20	19.15	0.7452			0.05– 2.07

**Graph no.1**



**Observation:**

From the above table it is seen that the mean of Pre Test is 12.14 and post test is 19.15. S.D. of pre test is 1.188 and post test is 0.7452 and 't' value is found 21.53 which is significant there for the hypothesis is rejected which indicates that There is significant difference between the performance of Pre Test & Post Test achievements of primary school students

**Conclusion :**

There is a significant difference in the Pre Test & Post Test achievements of primary school students teaching by using smart board.

**Statement of hypothesis No 2**

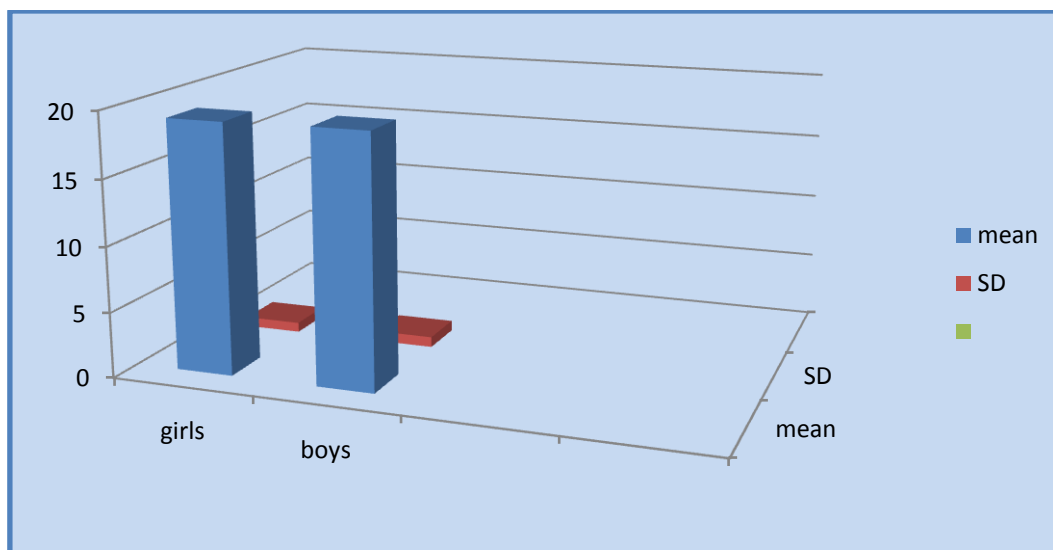
There is no significant difference between girls and boys Post Test achievements scores of primary school students

**Table No 2 The mean, standard Deviation and “t” Value of pre Post Tes of girls and boys.**

Group	N	M	SD	‘T’ Value	Degree of freedom	Table Value
Girls	10	19.10	0.7379	0.2928	Df-18	0.01 -2.81
Boys	10	19.20	0.7888			0.05- 2.07



Graph no.-2



**Observation:**

From the above table it is seen that the mean of Post Test of girls is 19.10 and Boys is 19.20. S.D of post test of girls is 0.7379 and boys is 0.7888 and 't' value is found 0.2928 which is not significant there for the hypothesis is accepted. which indicates that There is no significant difference between the performance of Girls & Boys post – test achievements of primary school students..

**Conclusion :**

E-learning using smart boards is equally effective for both boys and girls.

**Conclusion**

1. Smart Board is found to be more effective for the children.
2. Student understand the concept more easily through smart board.
3. Post – test was more effective than Pre - test
4. The activities conducted with smart board were more effective.
5. There is significant difference between the performance of pre - test and post – test of traditional and smart board method.

**Suggestions**

1. Smart Board can be adopted for all the school students.
2. Use of smart board can be added in the syllabus for primary & Middle school level ,
3. Various programs should be arranged by the school for teachers to use smart board effectively.

## **Bibliography**

Website : [www.wikipedia.com](http://www.wikipedia.com)

[www.google.c](http://www.google.c)

<http://www.smarterkids.org/research/paper6.asp>

<http://www.mirandanet.ac.uk/pubs/smartboard.htm>

<http://www.kented.org.uk/ngfl/whiteboards>

<http://teachers.net/gazette/JAN02/mabell.html>

<http://www.smarterkids.org/research/paper10.asp>

<http://www.smarterkids.org/research/paper3.asp>

<http://www.smarterkids.org/research/paper12.asp>

<http://teachers.net/gazette/JAN02/mabell.html>

[http://ferl.becta.org.uk/display.cfm?page=265:](http://ferl.becta.org.uk/display.cfm?page=265)

<http://www.itle.unl.ac.uk/news/archive/0111141.html>

[http://www.atherley.hants.sch.uk/General\\_Information/Teaching\\_for\\_the\\_Millennium/teaching\\_for\\_the\\_millennium.htm](http://www.atherley.hants.sch.uk/General_Information/Teaching_for_the_Millennium/teaching_for_the_millennium.htm)

[http://www.smarterkids.org/research/paper6.asp#likert.](http://www.smarterkids.org/research/paper6.asp#likert)

<http://www.smarterkids.org/research/paper6.asp>

<https://study.com/academy/lesson/what-is-a-smart-board.html>