A STUDY ON SMART BOARD EFFECTIVENESS IN TEACHING-LEARNING EXPERIENCE

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Abstract

Integration of technology and learning is beautifully amalgamated with Digital learning. Virtual lectures, applications, portals containing educational resources contribute to the development of digital learning. With the advent of digitization, the dynamics of classroom teaching and learning is undergoing a sea change. Colleges and universities around the world are investing a considerable amount of money to create Information Technology resources that meet their students' and faculties' instructional needs.

According to several studies, students have shown keen willingness to accept digital learning. Therefore this study has been designed to determine the effects of smart board teaching on teachers and students. The methodology adopted by this study is quantitative, with the objective of measuring the effect of smart-board teaching. The method of data collection shall be with the use of a questionnaire, which will be administered to 100 respondents in the age group of 17-20. Also, the teachers were interviewed with respect to smart board teaching and its methods. The expected findings of this study are that students' associate great learning experience with smart board and teachers feel that smart board teaching enables them to deliver their lecture better.

Keywords: **Technology, smart board, teaching, information technology, lecture, digital, e-learning, digitization, digital natives, digital learning, ICT**

INTRODUCTION

"Every once in a while, a new technology, an old problem, and a big idea turn into an innovation."-Dean Kamen

With the percentage of digital natives entering the field of education increasing, the need to shift from print to digital has only become more pertinent. This transition has led to rapid share of information with students from various sources in real time. By embracing digital devices, what has its impact been? Has it been an easy transition? Also, how effective has it been?

Digital learning has a massive impact on education system as a whole. The society is changing its dynamics as far as technology is concerned and now students as well as teachers are not only adapting but also redefining their communication techniques.

Literature Review Definition

Digital learning uses technology to strengthen students' learning experience with a mix of tools and practices, online and formative assessment; an increase in the focus and quality of teaching resources and time; online content and courses; and applications of technology in the course curriculum.

'Smart Board' refers to a specific interactive whiteboard technology that is developed by the company SMART technologies.

Smart boards are a brand of interactive teaching whiteboard (IWB). It can be described as whiteboard displaying image from the computer monitor with the surface operating as giant touch screen. They vary in size and can be mobile or wall mounted. The set up can consist of a desk or ceiling mounted data projector and computer or can work on a totally integrated system as is the case for rare projection smart boards. The computer can then be controlled from the board itself by touching the smart board screen, either directly with your finger or one of the incorporated electronic pens (Preston & Mowbray, 2008).

Digital Learning

Digital learning provides assistance to students in subject learning. It enhances their overall performance. Integrating digital learning in class benefits students and teachers as well. (Lin, Chen, & Liu, 2017)

Interactive white board

Interactive white boards reduce need for note taking for students thanks to the capacity to save and print what appears on the board. It makes students more involved in the learning process and motivates them and helps to eliminate monotony in class. Similarly, it encourages teachers to integrate ICT into their lessons and integrate a wide range of web based resources (Dafni).

With the assistance of an interactive whiteboard during lesson instruction, teachers have the opportunity to teach to more of the multiple intelligences at one time. Teachers are also given a broad range of possibilities as to how they want to present content to their students. They can use interactive whiteboards to display images with sounds for students to hear the images speak to them. Teachers can also use it to create music or to show art examples in a more effective way. It can also be used as a way to motivate and engage students through play. Using interactive activities or games on the interactive whiteboard will make lessons more enjoyable for students and they will learn the lesson content and practice through playing games or exploring websites that offer further information on that specific lesson topic(Li, 2015).

Research conducted on kindergarten students

The smart board provides teachers and kindergarten students with a whole new interactive medium to share ideas, information, images, animation, audio and video. It was found that the students were highly motivated when taught via a smart board as they could be physically be involved by touching and moving objects and overall it improves their attention span in the classroom (Preston & Mowbray, 2008).

Research conducted on students with learning disabilities

Students with learning disabilities find smart boards helping them to complete their task more effectively. It also gives the teachers opportunity to differentiate instruction for all their students. Smart board can increase motivation levels, generate high interest learning environment (Handler, 2011).

Research conducted on school students

Smart board technology can be used in the classroom in order to increase student engagement during the learning process. It was found that smart board technology increases first grade students' on-task behaviour significantly more than fifth grade students' while teaching English.

Research conducted on Pattern making courses

The traditional teaching of Pattern-Making courses, which is one of the important and basic courses of clothing education, is monotonous and becomes uninteresting. Therefore, students' attitude towards this course is often not very positive. The results of this research are important when we consider the fact that with the use of smart boards, students' attitudes became positive towards skill-based practical courses such as pattern-making.

Research conducted on college students

Smart board teaching aid used in Nigerian tertiary institution to determine effectiveness in teaching computer studies was found to be overall effective. Responses indicated that the students were more involved, attentive and felt motivated when lessons were offered using the Smart Board rather than using other teaching method. (N & A, 2014).

As has been observed, researches on smart board effectiveness have been conducted among kindergarten students, school students and the disabled students and even college students.

Therefore the researchers are interested in conducting a study on effect of smart board technology on teaching

and learning with respect to under-graduate level students.

An attempt was made to understand if students understand concepts in class better with smart boards installed and when used by teachers. Also, perspective of the teachers when it comes to using smart boards in class and the challenges faced by them was also sought.

Objective: To study smart board effectiveness in teaching learning experience

Hypotheses

Hypothesis 1- Smart board teaching helps college students during lectures.

Hypothesis 2- Smart board teaching does not help college students during lectures.

Hypothesis 3- Teachers feel smart boards help them during their lectures.

Hypothesis 4- Teachers feel smart boards don't help them during their lectures.

Research Question: Is smart board effective in teaching learning experience?

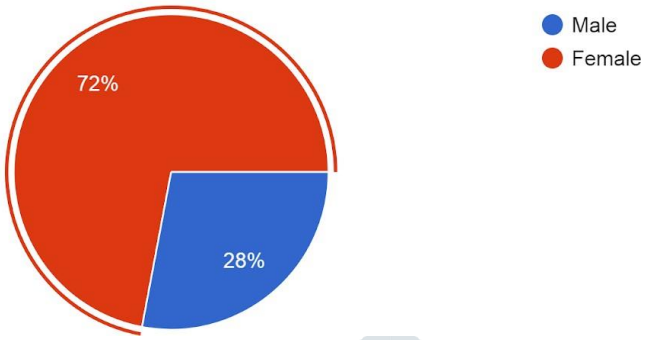
Research Methodology: The methodology adopted is quantitative so as to statistically test the hypotheses. The method of data collection was a survey technique administered through the platform - Google forms. Quantitative perception survey was conducted for students. The questionnaire enabled the researchers to determine whether smart board teaching is effective for college students to learn concepts better. In-depth interview was conducted to determine whether teachers find smart board helping them during their lectures.

Sampling Technique: Due to time and financial constraints, a non-probability sampling technique was adopted. In order to conduct research among under-graduate students between age group of 17-20, convenience sampling was chosen as the elements of the population were readily available, convenient to the research. The sample size was 118. Students belonging to BSC IT, BMS and BMM and faculties of Usha Pravin Gandhi College participated in the survey. One of the limitations of this sampling technique is that of representativeness and unknown degree of sampling error.

Findings of Quantitative survey conducted among students

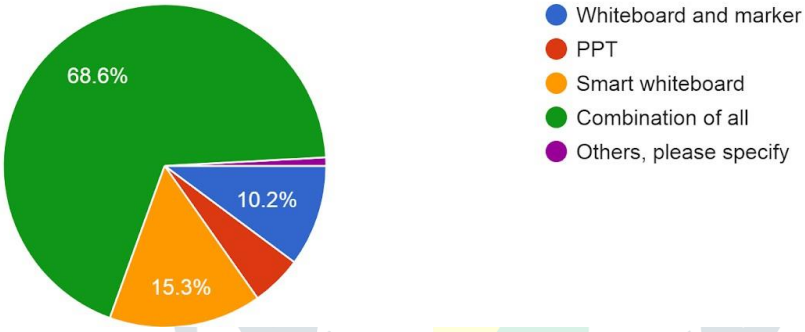
Gender

118 responses



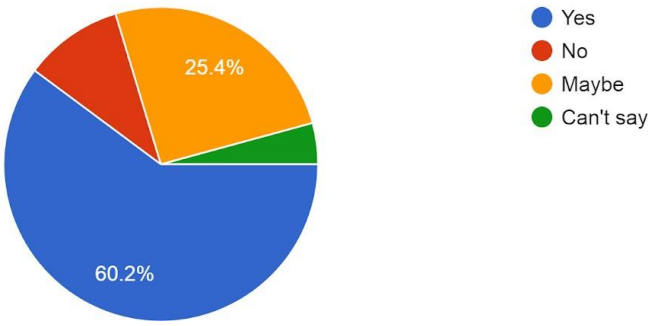
1. According to you, which method of teaching helps you to understand concepts?

118 responses



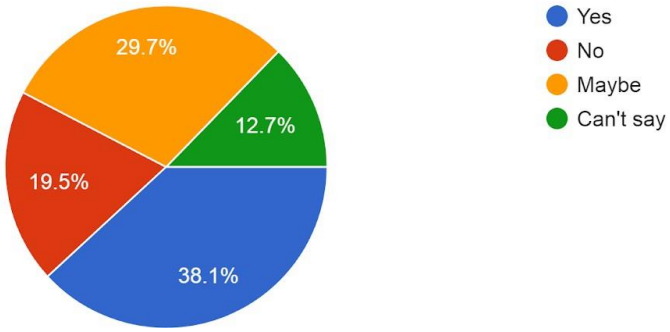
2. Do you like smart board teaching method?

118 responses



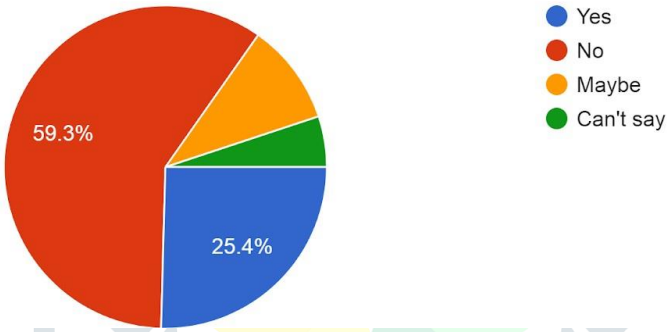
3. Does smart board teaching enable one to reduce monotony of a lecture?

118 responses



4. Is there any difficulty faced while learning with smart board?

118 responses

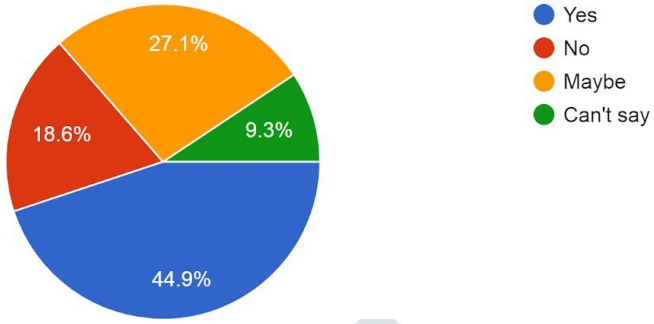


5. Which subject lecture do you think smart board enables to teach effectively?

Name of Programme	Subject
BMM	Literature, Marketing, Introduction to Advertising, Theory subjects, Management, Radio and TV, Understanding Cinema, Media Psychology, Journalism, Agency Management. Photography, All of them since presentations, videos, visual representations are a big part of a curriculum. Understanding cinema and Organisational Behaviour.
BSC IT	Microprocessor, Core Java, Computer graphics, Maths, Green computing, Animation,Embedded System Practical, Numerical and statistical methods, web programming.
BMS	Foundation course, Business Economics, Production and Total Quality Control.

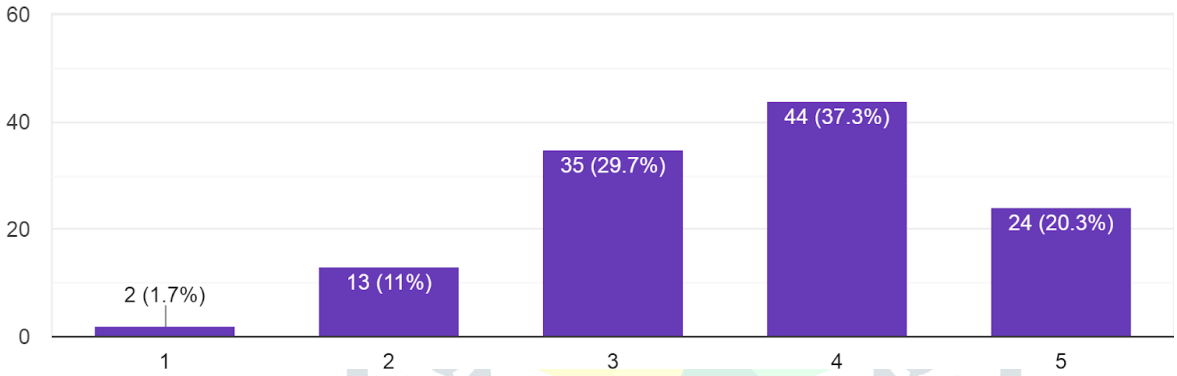
6. Do you like traditional method of teaching?

118 responses



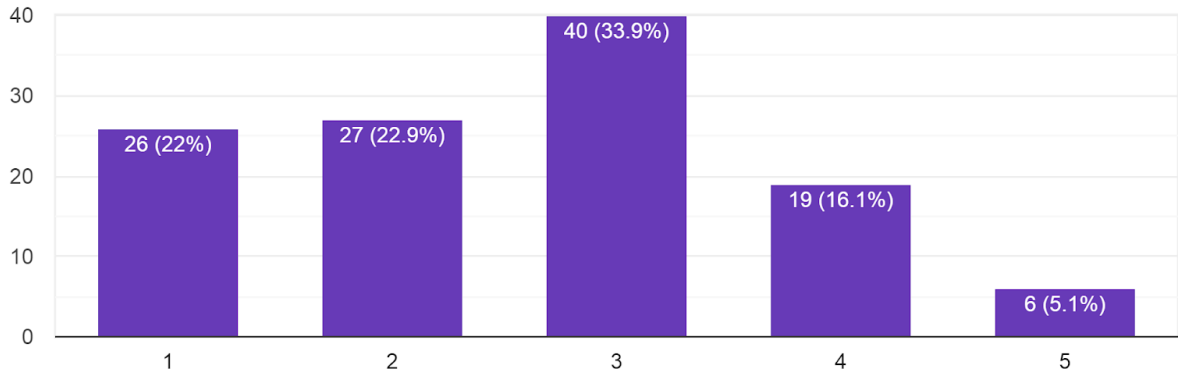
7. Smart board teaching reduces the quality of a lecture.

118 responses



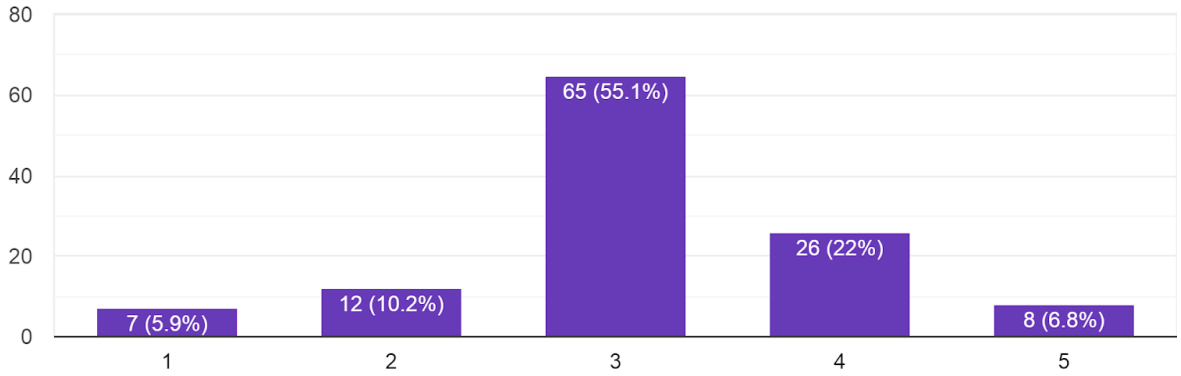
8. Smart board teaching facilitates better recall value of content.

118 responses



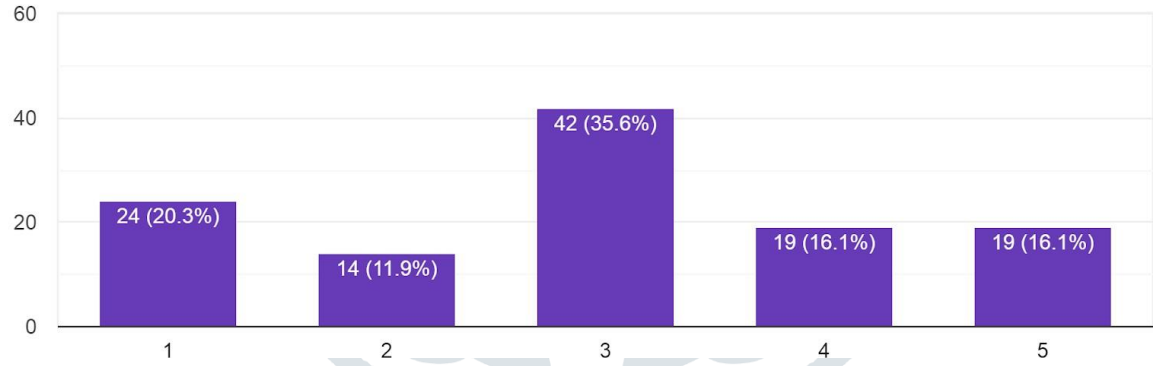
9. Traditional teaching methods facilitate better recall value of content.

118 responses



10. Smart board teaching has reduced the efforts taken by a teacher in the classroom.

118 responses



Data Analysis

Note: For this study, traditional method of teaching includes chalk-blackboard and whiteboard- marker.

In the quantitative survey conducted among students, 72% of the students were females and 28% were males.

69% of the students unanimously agreed that a combination of all teaching methods including traditional as well as smart interactive media helps them to understand concepts while only 15% preferred teaching with smart boards.

60% of the students like smart board teaching method as opposed to 10% of students who don't like the smart board. 30% of students were indecisive about the same.

As far as smart board helping in reduction of monotony of lectures is concerned, only 38% agreed to it while 20% disagreed. Around 42% chose to remain neutral about it. So, we can say that where teaching – either through traditional mode or via smart board – is concerned, the teacher plays an important role in breaking the

monotony with his/ her knowledge, energy and enthusiasm.

The students belonging to BMM, BSc IT and BMS gave their respective preference of subjects, which they found to be taught effectively with the help of a smart board. In BMM, students identified media related subjects specifically like Advertising, Radio and TV, Media Psychology, Journalism, Organizational Behaviour, Understanding Cinema, Literature, Digital Marketing, Agency management and Photography as being effective due to smart board teaching.

BSc IT students narrowed down on subjects like Core Java, Computer graphics, Green computing, Mathematics and Microprocessor as being effective due to smart board teaching method. While BMS students narrowed down on Foundation course, Business Economics and Production and Total Quality Control subjects as effective via smart board teaching.

It's interesting to note that around 45% of students still find the traditional method of teaching appealing while only 19% felt that they don't like to be taught with the traditional methods.

57% of students disagreed that smart board teaching reduces the quality of a lecture while only 12% felt otherwise.

Where smart board teaching facilitating better recall value of content is considered, the students gave a mixed reaction. 33% took a neutral stand while the others were divided on this. 22% strongly agreed and only 5% strongly disagreed to it.

It's interesting to note that the students were also indecisive when queried about traditional teaching method facilitating better recall value of content. Around 55% preferred to take a neutral stand on it. And 5% strongly agreed and 7% strongly disagreed.

When queried about smart board teaching reducing the efforts taken by a teacher in the classroom, around 36% took a neutral stand to it. 20% strongly agreed while 16% strongly disagreed to it.

Analysis- Teachers' Interview

A detailed interview was conducted among 18 faculties of BMM (Bachelor of Mass Media), BMS (Bachelor of Management Studies), BSc IT (Bachelor of Science Information Technology) and BAFTNMP (Bachelor of Arts in Film, Television and New Media Production) of Usha Pravin Gandhi College. Most of the faculties agreed that they like traditional method of teaching but all of them unanimously agreed that they like and have adapted to smart board for teaching purpose. In the interview, half of the faculties mentioned that they did

face technical challenges initially while learning to use smart board but with time they got adjusted with its features. Most of them agreed that the smart board helps in teaching difficult concepts easily. Teachers felt that smartboard hasn't reduced face-to-face interaction with the students and that it's easy to use. Most of them said that they like to use traditional methods as well as smart boards while lecturing. But there are a few challenges in smart board usage. For example, some of them spoke about how the DVD cannot be played on it, how a bigger screen size could have facilitated more comfortable viewing for students sitting on the back benches. Also, the maintenance of the smart board is a handicap according to one teacher. Connecting the smart board to the wi-fi and switching between presentations and videos is a task for one. Another teacher felt that more RAM would soon be required. Security settings become cumbersome but if not, it might be misused by the students.

All faculties felt that touch screens are a boon in smart boards as it helps in the smooth functioning of the lectures. They strongly agreed that smart boards help in connecting students to multiple resources via a single platform. The teachers felt that switching between an interactive whiteboard to either a video or a presentation is at times not so easy. And based on the subjects, teachers try to blend various methods including traditional and smart board media to give an effective lecture to students.

Limitation: The research is a quantitative perception study so the subjective aspect cannot be deeply explored. The representativeness of the sample is a limitation due to the size of the sample. Therefore the results cannot be generalized to the entire population of adolescents.

Conclusion

The research has shown that the college students like smart board teaching method but generally they prefer a combination of various methods including traditional and smart board teaching to understand concepts better. Overall, all of them unanimously agreed that they like smart board teaching and that it is comparatively easy to use. But as far as recall value of content is concerned, they didn't feel smart board is the only parameter that could apply.

So the Hypothesis 1 has been proven true. College students agreed that smart boards help them during lectures. The researchers couldn't determine whether smart boards help them to understand concepts better or smart boards do not help them to understand concepts better. It was a mixed reaction as far as students were concerned. Comprehending various concepts doesn't only require the media, but it also requires teachers' direction and his/her perception adding value to the lecture.

With teachers' interview, we can conclude that Hypothesis 3 holds true. Teachers feel that smart boards help

them in their lectures. Also, they are ready to adapt and blend various techniques in order to teach effectively by blending traditional as well as smart board media. Although they felt initial few challenges, it can be said that they like using smart boards in their classrooms and want further digital improvements and enrichments.

Scope for further study

The study on smart board teaching and digital learning can be further researched with respect to different academic subjects for graduate and post-graduate courses. E-learning, online classrooms, portals and digitization can be explored in order to understand the acceptability and comprehensiveness of various digital platforms for learning purposes.

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