

## USE OF SMARTBOARDS BY COMPUTER TEACHERS

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*Abstract –*

This paper gives an idea about the usage of smart board technology by computer teachers in class room teaching. The area covered is Greater Noida, U.P.(India) . Computer teachers are technically most competent teachers in school in technology. How they are utilizing this facility is a motive of this study. The problems faced by them and challenges they overcome to make it fully useful in class rooms. The content provided by smart board providers, specially related to computer subject is the major difficulty for them. This study is useful for schools and content providers, who can understand the different aspects of the use of smart boards by computer teachers.

*Keywords –* smartboard , computer , teacher , school , use , content provider

## INTRODUCTION

We are living in the modern world. Scientific invention and electronic devices play an important role in our day-to-day life (Krishna Sagar. 2005). Technology has improved a lot. Everyone wants to do something new including the students. So the teacher must make the students to learn with interest and innovation. This can be done only by using scientific technology in their teaching learning process. Smart Boards are becoming an essential component of every classroom. Some reasons for this trend are that: It can accommodate different learning styles (Thiyagu.K. & Arul Sekar. J.M. 2007). 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. Educational Technology refers to hardware and software, which are being used in educational setting to enhance the teaching and learning environment. Interactive Whiteboard (IWB) is one of the technologies that transform classroom activities and teachers' role. Chalkboard has been developed into interactive electronic board. A learner can see and feel his/her achievement at the same time. By finger-touch, a user can write, draw, drag an object, manipulate a text or shape something. It is true that IWB is a teaching tool and learning resource at the same time.

Computer teachers are the first one to use this technology as they are well aware and comfortable with the use of the new technologies. So it is important to find out how much use full is this smartboard technology is for them.

### *OPERATIONAL DEFINITION OF KEY TERMS*

The following are the operational definition of the key terms of the study.

**Usefulness:** It refers to the adequacy to accomplish a purpose as well as producing the result intended or expected results. This study measures the usefulness in terms of the comfort level of teacher of the Smart Board and content available class wise for the subject.

**Smart Board Instructions:** Instructions through the EduCom Interactive White Board (Smart Board) in an ADDIE Model (ADDIE- an acronym for Analyze, Design, Develop, Implement, and Evaluate) way of instructions for the selected content of Subject as per CBSE guidelines.

**Computers:** A computer is a general-purpose device that can be programmed to carry out a set of arithmetic or logical operations automatically. As a subject it teaches the general use of computer in our day to day life also develops logic for basic programming in senior classes.

**School Teachers:** Teachers those who are teaching in the schools in Greater Noida region, U.P, India, using smartboard technology .

### *Introduction about the CBSE syllabus*

ICT Policy Integrating ICT in a school environment is a mindset towards preparing students for the global challenges of life. It is an approach and a strategy which equips a learner with a tool to learn. The effective integration of ICTs into the educational system is a complex, multifaceted process that involves not just technology but also curriculum and pedagogy, institutional readiness, teacher competencies, and long-term financing, among others. Implementation of Technology 1 Providing a time-table for the subject called technology, which is taught by teachers with particular knowledge and skills. These teachers may come from a range of disciplines. 1 Developing a school approach which integrates units of study, or modules of technology education in a systematic, co-ordinated way, across the curriculum, involving teachers from a range of disciplines.

### **Four principal rationales for introducing computers in schools:**

1. The pedagogic rationale asserts that computers assist the teaching-learning process and enhance the instruction of traditional subjects in the curriculum. Information and Communication Technology.
2. The catalytic rationale sees the introduction of computers as improving the overall performance of schools thus giving a positive impact to the education system in general. 1
3. The social rationale is concerned with the overwhelming importance of the computer in modern society that seems to make it imperative for all students to become familiar with it and accept it in everyday use.
4. The vocational relates the need for computer education to the possibility of better access to the job market. This sees the teaching of computer applications or programming as providing skills vital for employment. How can Computers be used in classrooms. School computers are being used in many different ways. Educational leapfrogging, however, is only possible if the potential of hardware and software is fully exploited.

Computers can be used as:

1. Teaching tool for the development of intellectual and thinking skills - Computers may be used for interactive games and real world simulations i.e., Interdisciplinary comprehensive explorations that cannot be provided by any medium other than the computer.
2. Communication tool - The use of computers in the classroom help students get used to email and facilitates communication among students, teachers, etc., both within class and outside the class. They learn to communicate via Internet, be it for emailing with another class working on similar subjects/projects, especially if a school network exists, or be it for consulting an expert or another "significant person" on issues that arise during coursework.
3. Gaming tool - Computers are used for games, especially in primary education where a playful approach to computers helps students prepare for future computer use and stimulates their creativity and imagination.
4. Research tool - Computers are used to provide students with access to information on the Internet. The Internet facilitates gathering data for class projects, taking online excursions to travel reports and photos from various countries, reading work written by other students, following up on current news and issues, reading fiction, taking virtual field trips to institutions such as museums on the Internet, etc.
5. Training tool for repetitive tasks - This includes the use of drill and practice programmes in the fields of reading, grammar, or simple arithmetic. This also includes solving equations, studying irregular verbs, learning vocabulary in a foreign language, spelling, recalling historical dates, etc.
6. Administrative Tool - Teachers themselves may use computers for administration tasks, production of documents, and the creation of lessons. This includes keeping of records, manipulating information, producing individual letters 52 to parents or a class newsletter, creating customised follow-up work for lessons, making personalised certificates of achievement, creating student lists or name tags, etc.
7. Teaching tool for computer use in itself - Students have to be prepared for computer used in their future lives, i.e. develop easiness in dealing with both software and hardware tools. The former includes word processing, and dealing with spreadsheets, databases as well as graphics applications that they are likely to encounter at their future work place.

**GREATER NOIDA**

Greater Noida Industrial Development Authority is located within the National Capital Region of India's capital - New Delhi and is adjacent to Noida, one of the largest industrial townships in Asia. Greater Noida is shaping up as India's smartest city, the National Capital Region's most modern urban development center and its fastest-developing center of attraction. It has emerged as a modern model of far-sighted town planning. There are a number of schools, colleges and universities situated in Greater Noida.

**SCHOOLS COVERED**

I have covered ten schools for my research, as suggested by my research guide. I have covered all levels of school teaching i.e. PRT, TGT, and PGT.

1. Somerville School
2. Pragyan school
3. DPS
4. Greater Valley School
5. Father Agnel School
6. G.D Goenka Public School
7. Ryan International School
8. St Joseph Convent School
9. Hillswood Academy
10. Rameesh International School

**PROBLEM STATEMENT**

Computer teachers are the first one to use the smart boards in their classes. They being the technically know ledged people, can make optimum use of this technology. They know the user interface details as well as the software level details of this technology. What is the feedback of smartboards given by them will help other teachers also to use this technology and can increase the user satisfaction. Suggestions given by them can be a valuable feed back to the companies also.

Main challenge faced by computer teachers are related to lack of content for their subject, specially in and after middle school.

## METHODOLOGY OF STUDY

### *Research methods*

Descriptive method of research is used with survey technique. The instrument of data collection for the research will be a questionnaire consisting of eleven statement besides the researcher's observation and his own experience. It will consist of both open ended and closed ended questions. The subjects will be chosen purposely from CBSE Schools' (computer teachers). The researcher will conduct a pilot survey and use statistical techniques through which validity and reliability of the questionnaire can be verified. The overall research method used will be descriptive. Along with above method face to face/telephonic interviews will be taken by the researcher for as much as possible subjects.

### *Population and Sample*

The data has been collected from about 26 computer teachers from all levels of classes i.e PRT, TGT, PGT from schools in Greater Noida region, using smart board technology. Sample size is of 26 teachers during academic session 2015-2016.

### *Data collection and Tools used*

A questionnaire is developed consisting of 12 questions both closed ended and open ended. Number of closed ended questions are more than open ended questions. The questions are related to the usage of smart boards by the computer teacher for class room teaching.

### *Procedure of Data Collection*

The data is collected by face to face interview and questionnaire filling by the teachers. In some cases telephonic interview is also taken, where face to face meeting was not possible. Also the observation and experience of researcher are also taken into consideration.

### *Procedure of Data Analysis*

The data to be obtained from the teachers is analyzed with the help of visual method i.e quantitative method for closed questions. Quantitative research is 'Explaining phenomena by collecting numerical data that are analysed using mathematically based methods (in particular statistics)'. Quantitative research is essentially about collecting numerical data to explain a particular phenomenon, particular questions seem immediately suited to being answered using quantitative methods.

The other method used to analyse the open questions is content analysis i.e a qualitative method for analysis. Qualitative research is characterised by its aims, which relate to understanding some

aspect of social life, and its methods which (in general) generate words, rather than numbers, as data for analysis. In situations where little is known, it is often better to start with qualitative methods (interviews, focus groups, etc).

## ANALYSIS AND INTERPRETATION OF THE DATA

The data to be obtained from the teachers will be analysed with the help of both qualitative and quantitative techniques. Data to be obtained from closed ended questions will be analysed using graph i.e. visual analysis method and content analysis (qualitative analysis) will be used to analyse data obtained from open-ended questions.

### Visual (Graph) analysis method

The graphs will be plotted using MS Excel software and the data will be analysed. Conclusions will be drawn as per the results shown by graphs.

### Content analysis method

Content analysis is a method for summarizing any form of content by counting various aspects of the content. This enables a more objective evaluation than comparing content based on the impressions of an observer. Content analysis, though it often analyses written words, is a quantitative method. The results of content analysis are numbers and percentages.

Though it may seem crude and simplistic to make such statements, the counting serves two purposes:

- to remove much of the subjectivity from summaries
- to simplify the detection of trends.

**TABLES AND GRAPHS**

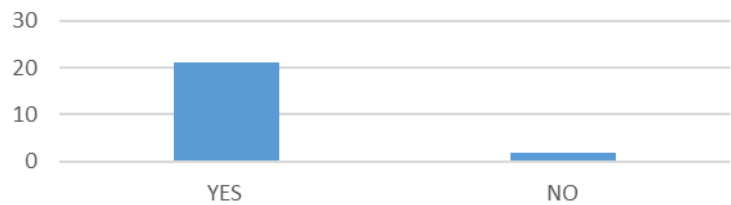
**TABLE 1**

YES	21
NO	2

**TABLE 2**

EDUCOM	5
PEARSON	1
TECHMARKS	1
NIIT	1
OTHERS	2

**GRAPH 1: USE OF SMARTBOARDS BY TEACHERS**



**GRAPH 2 : COMPANY PROVIDING SMART BOARD SERVICES**

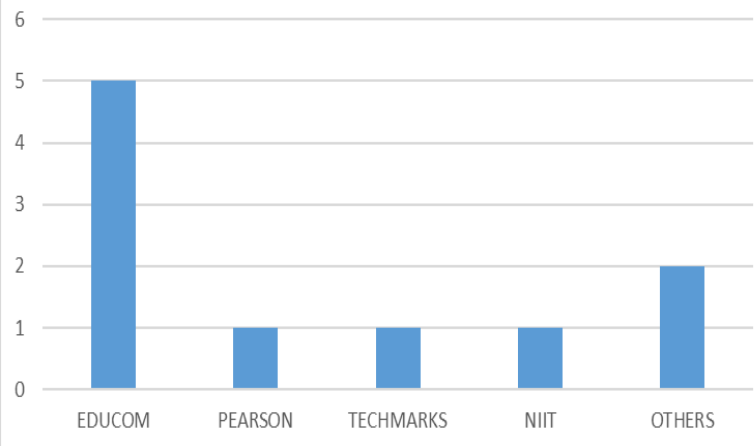




TABLE 3

DAILY	7
TWICE A WEEK	9
LESSER	5
N/A	2

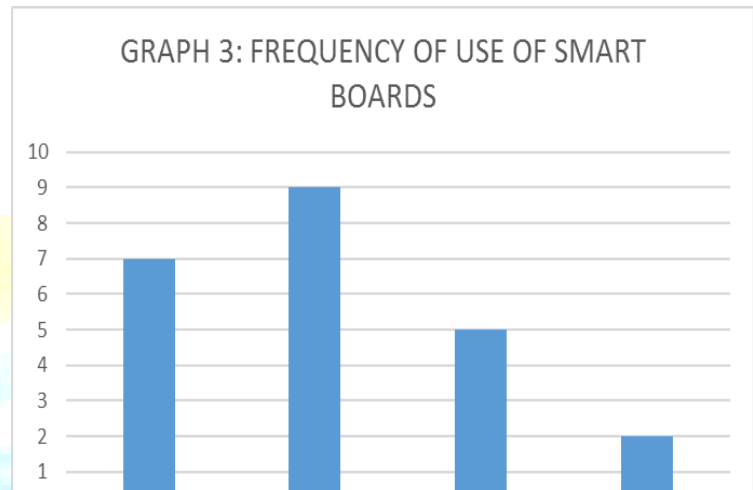


TABLE 4

YES	12
NO	11

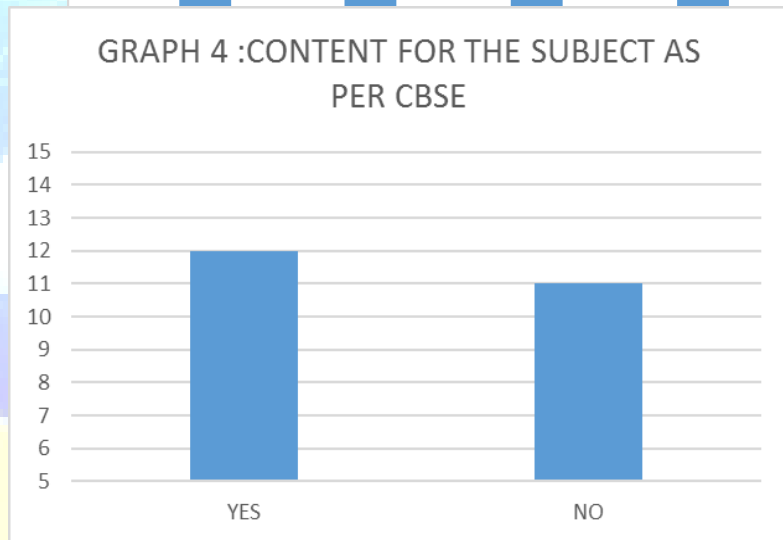
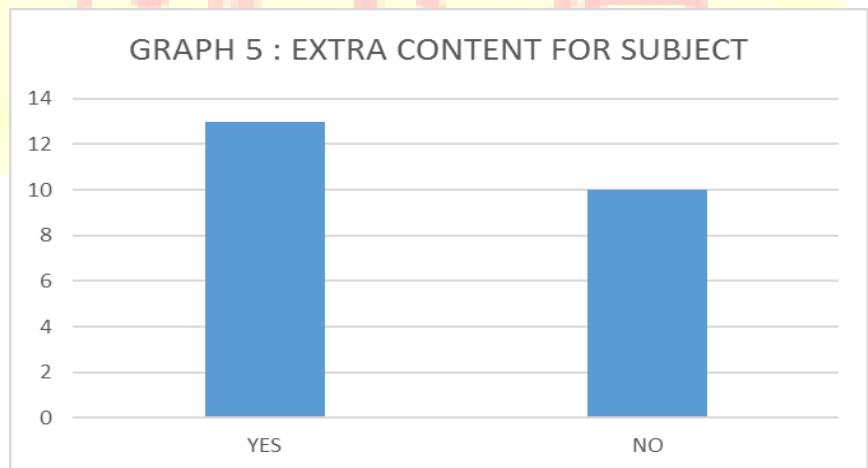


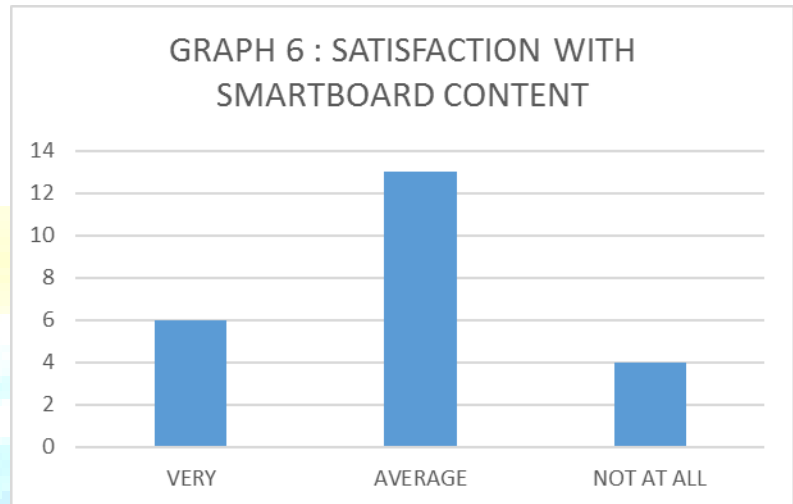
TABLE 5

YES	13
NO	10



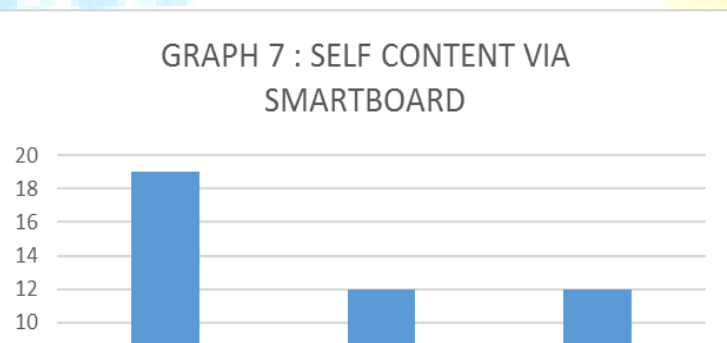
**TABLE 6**

VERY	6
AVERAGE	13
NOT AT ALL	4

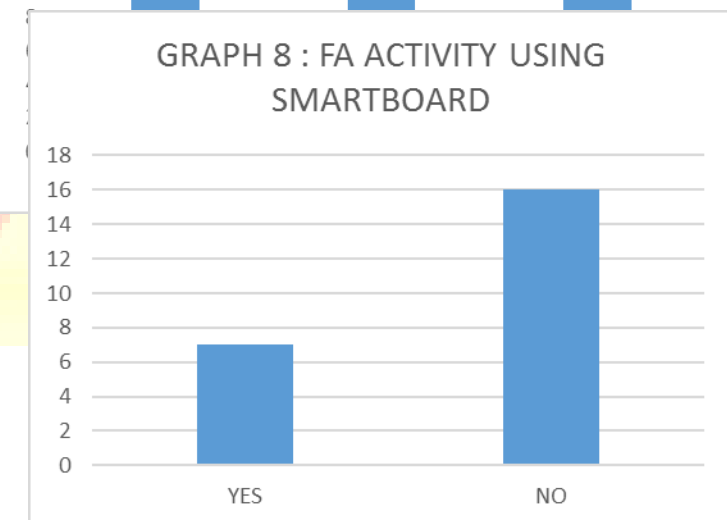


**TABLE 7**

PPT	19
VIDEO	12
LIVE DEMOS	12



\*MORE THAN ONE OPTION CAN BE SELECTED

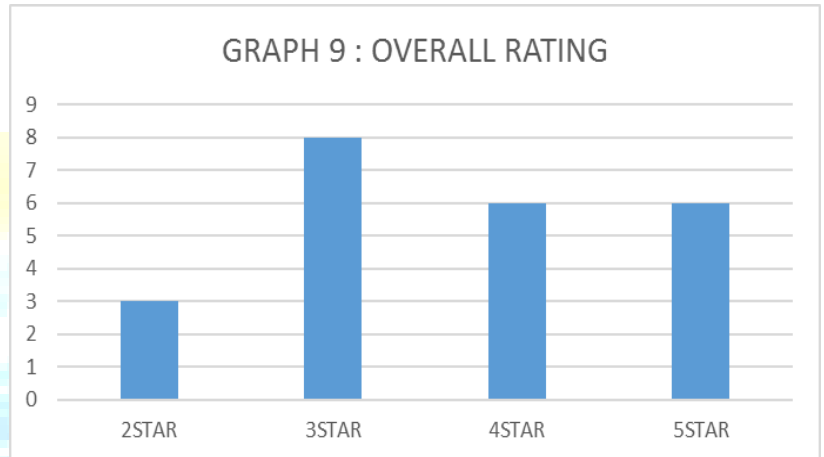


**TABLE 8**

YES	7
NO	16

**TABLE 9**

2STAR	3
3STAR	8
4STAR	6
5STAR	6



**TABLE 10**

PRT	7
TGT	10
PGT	6

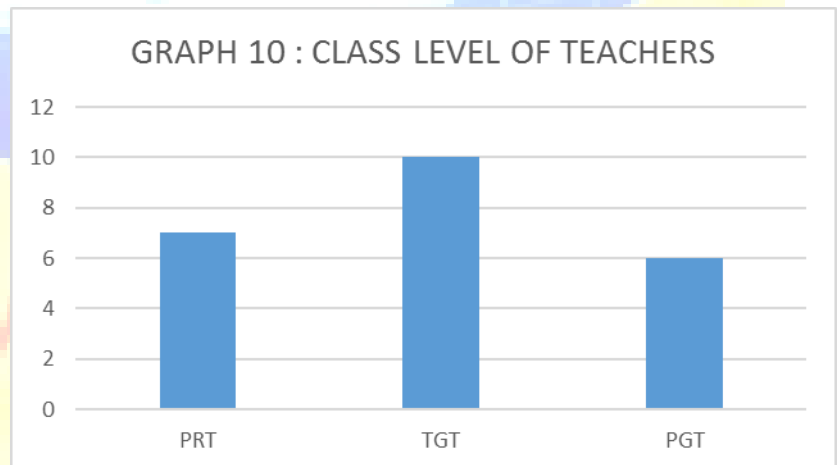
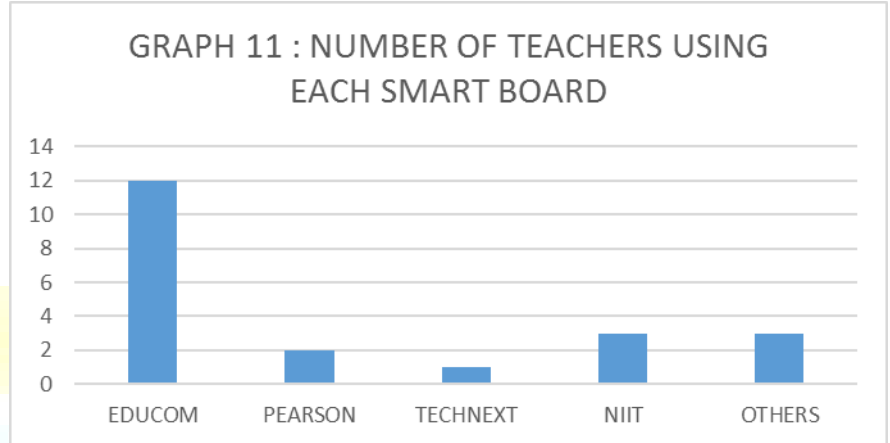


TABLE 11

EDUCOM	12
PEARSON	2
TECHNEXT	1
NIIT	3
OTHERS	3



## ANALYSIS

### *Sample size*

The 10 schools from the Greater Noida region has been studied with a total of 26 teachers from these schools at level i.e PRT, TGT, and PGT computer subject in private schools using smartboard technology in their schools.

### *Observations*

It has been observed from the graphs that most of the schools, 50 % of the schools studied has Educom as smart board provider. It is the oldest and the first provider in Greater Noida for the smart board technology. Somerville was the first school to implement this technology in their school. The newer schools or the old schools which are installing this system recently are looking for other players. Its also relevant from the graphs and researcher's observation that new companies are providing content for the Computer subject now but Educom does not have any content for middle school and higher school. They have some content available for the junior school.

It's been also observed that most of the teachers use smartboard for the class room these days. Teachers mostly use smart boards twice a week not more than that. Also teachers are using a lots of extra content like their own PPT, videos and live demonstration of the topic using smart board. Most of the teachers are not using smartboards for conducting FA activities, those who are using it, they use it as display board or monitor. Most of the TGT teachers are being interviewed or have filled questionnaire. Majority of the teachers are averagely satisfied with the content provided but they none the less agrees that today's teaching is not possible without smartboards. They have become an inseparable part of our class room teachings now.

For open ended questions, i.e about the difficulty faced and suggestions, content analysis is as follows:

- The slow speed of hardware or its getting hanged up is the biggest challenge teachers face.
- Most of the teachers suggested that latest and up to date content should be provided and board should be connected to the internet.

## SUMMARY AND CONCLUSION

In this thesis researcher has explained the concept of smartboard technology and other operational definitions. She has also discussed the relevant studies to date related for the research topic in “Review of literature section”. Then the CBSE syllabus guidelines for Computer have been given for the reference. After that the research problem and questions are mentioned. Methodology used for research, sample size and analysing methods are also discussed. Then visual analysis is provided with help of graphs and content analysis is done by the researcher herself. These are the main conclusions drawn from the research:

- Smart boards are used by almost all Computer teachers at PRT, TGT and PGT levels.
- In Greater Noida region most schools have Educom as smartboard technology provider.
- New players are now entering the market such as NIIT, TechMarks and Pearson.
- Educom does not have any content for the computer subject at TGT and PGT levels.
- New companies are providing the content for the subject as per CBSE syllabus also extra content such as worksheets are provided.
- Most teachers use the board twice a week in class for teaching the subject.
- They are also using their own content such as PPTS, videos and live demos.
- A few teachers use smartboard for conduction FA activities.
- Difficulties faced are mainly regarding the unavailability of content related to the subject or updating of the content.
- Most suggestions are for adding latest content and also software to the board.
- Overall satisfaction level of computer teachers is average for the usability of smartboards to them.

### *Future scope and Limitations of the study*

The study has been conducted with the utmost sincerity and honesty by the researcher but none the less some points can be covered or improved upon in the research. Following points can be carried upon or covered in the future endeavors:

- Study is limited to ten schools in the region, there are nearly twenty schools with the smartboard technologies in Greater Noida.
- Only private schools are covered for the study as no government school has this technology available here.
- The indepth study for the content provided at each level of teaching such as PRT, TGT and PGT can be done.
- More extensive studies can be done taking in consideration educational qualifications or experience of the teachers.
- Feedback from students and parents can also be added to add more relevance to the effectiveness of smartboards in classroom teaching.

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