CHAPTER II

REVIEW OF RELATED LITERATURE

Review of related literature in the concerned field is of great significance in locating the research problems. The importance of related literature cannot be denied in any research. It is an important aspect of a research project which works as a guide post, not only with regard to the work done in the field, but also to perceive the gaps in the concerned field of research. It helps in understanding the potentialities of the problem in hand. Besides this, survey of related literature means to locate, to read and to evaluate the past as well as current literature of research concerned with the planned investigation. The time spent in such a survey is invariably a wise investment (Koul 2001).

The survey of related literature plays a vital role in the field of research. It is like a lighthouse in the sea, which guides the path of the sailing ships. Without reviewing the related literature, it is very difficult to select a problem. It is critical aspect in the planning of a new study. Reviewing the related literature is a time consuming process but is very essential. It is a crucial aspect of the planning of the study and the time spent in such a survey invariable is a wise investment. The review of related literature is an exacting task calling for a
deep insight and clear prospective of overall field. It promises a greater understanding of the problem and ensures the avoidance of unnecessary duplication at the same time, it also provides comparative data on the basis of which to evaluate and interpret the significance of one’s findings. Study of the related literature implies locating, reading and evaluating reports of research as well as reports of casual observations and opinions that are related to the individual’s planned research project. The record material in the form of monograph, books containing the description, explanation and criticism of the subject under investigation is also important. The orientation provided survey of related literature is helpful in making a straightforward statement of need for the investigation avoiding two extremes of an apologetic attitude and exaggerated claims.

For any worthwhile investigation, a review of related studies in the field of investigation is of great help to the investigator. These studies show the investigator how much work has been done in the field and what still remains to be done, which saves from duplicating the work and crowns with the credit of making original contribution to the world of knowledge. Review of the related literature helps in defining and delimiting the problem, in rejecting sterile approaches and in developing insight, which leads to improvement in research design.
A literature review can be just a simple summary of the sources, but it usually has an organized pattern combines both summary and synthesis. A summary is a recap of the important information of the source, but a synthesis is a re-organization or reshuffling of that information. It might give new interpretation of old material or combine new with old interpretation. Or it might trace the intellectual progression of the field, including major debates. And depending on the situation the literature review may evaluate the sources and advises the reader on the most pertinent or relevant.

Every piece of ongoing research needs to be connected with the work already done, to attain an overall relevance and purpose. The review of literature thus becomes a link between the research proposed and the studies already done. It tells the reader about aspect that have been already established or conducted by other authors, and also gives a chance to the reader to appreciate the evidence that has already been collected by previous research, and thus project the current research work in the proper perspective.

“Practically all human knowledge can be found in the books and libraries. Unlike other animals that must start a new with each generation, man builds upon the accumulated and recorded knowledge of the past” (Best, 1992).
Tuckmen (1978) has enumerated the following purpose of the review:

- Discovering important variable.
- Distinguish ‘what has been done’ from what needs to be done.
- Synthesizing the available studies to have perspective.
- Determine meaning, relevance of the study and relationship with the study and its deviation from the available studies.

Recognizing the advantages of related studies, the investigator tried to examine the related literature on the topic. The present review by no means is complete. Due to lack of resources and time it was not possible for the researcher to get access to the entire published and unpublished researchers in this field. An attempt was made to study the literature concerned with the investigation in hand.

The review of related literature provides some insight regarding strong point and limitation of the previous studies. It enables the investigator to improve his investigation. One should avoid the temptation to present the literature as an opportunity to the individual of gaining insight into the method and approach employed in earlier investigation.
As a matter of fact, familiarly with the literature in any problem area helps the students to discover what is already known, what others have attempted to find out, what methods to attract, have been promising and disappointing and what problems remain to be solved.

Reviewing the related literature is a time consuming process, but is very essential. The accumulated knowledge is to be erected on the basis of it. The importance of related literature can’t be denied in any research work. It works as a guide post not only with regard to the quantum of work done in the field but also enables us to perceive the gap in the concerned field of research. The similar or related studies carried out by researcher at various levels are called review of related literature.

According to Best (1977), “The research for reference material is time consuming but fruitful phase of investigation. A familiarity with the literature on any problem area helps to discover. What is already known, what others have attempted to find out, what method of attempt have been promising or disappointing and what problem remain to be solved.” In other words the related literature is worth for an effective piece of research.
2.1 Related Studies

Recently, many Indian Schools have equipped their classrooms with audio-visual systems that allow display of videocassettes, paper documents, internet pages, and interaction with commonly used software such as Microsoft Office. These classrooms are called “smart classrooms,” multimedia lecture halls, or electronic classrooms. Their purpose is to create new opportunities in teaching and learning by integrating computer, multimedia, and network technologies. There is not much work done about smart classroom and its affects. Few studies were done in few countries which are discussed here under.

Beeland (2001) conducted a study to determine the impact of smart board technology on student engagement. He accepted that learning to occur; student had to be engaged in the process. The results of the study indicates that the use of the smart board increase engagement which positively impacted visual, auditory and tactile learning. As the above review indicates, there is an abundance of research that supports the use of technology as an instructional tool. These finding support the premise that the technology led to an improved learning environment. However, research work is limited regarding the impact of smart board technology on the achievement. In the light of above review, it has been
concluded that there is a positive relationship between effect of smart class and achievement of student.

Scott (2002) in his study “Socialization in the virtual hallway: Instant messaging in the asynchronous Web-based distance education classroom”, examined the differences in communication between students who used Instant Messenger (IM) services and those who did not, in the same way asynchronous distance education Web-based course. It was found that students who used IM services found it easier to communicate, felt a stronger sense of community, and had more venues for informal and social communication about not only class material, but also information about the school and their common degree program. In traditional classroom buildings, the common spaces such as hallways provide the venue for this informal communication; IM services can enhance the distance education environment by providing the “virtual hallways” for students and instructors to meet.

Debra and Fraser (2002) investigated parents and students’ perceptions of the classroom learning environment and its influence on student outcomes. Two modified versions of ‘What Is Happening In This Class’ (WIHIC) questionnaire were developed for parents and two questionnaire were developed for the students. Qualitative interviews and observations were used to augment the richness of the quantitative findings. The students’ sample consisted of 520 students aged 9 to 11
years from 22 classes in three schools. The parent’s sample of 120 represented the responding parents from one school. Follow-up interviews were help with 10 parents and their children. The findings of the investigation showed that students and parents preferred a more favorable learning environment than they actually perceived and parents’ evaluation of the actual learning were somewhat less favorable than those of students. It was also found that positive, but low relationship existed between students outcomes and students’ and parents’ participations of the learning environment.

British Educational Communications and Technology Agency in research study has listed the advantages of interactive whiteboards in the smart classrooms for students as; enhanced motivation, improved participation and cooperation, more attractive presentations, ease of use for younger children since there is no requirement for a keyboard, easier handling of complex concepts with the help of clearer, more effective and dynamic presentations, and the appeal to students with their different learning styles (Becta, 2003-2004)

Moreover, there are some evidences which indicate that the use of interactive whiteboards can increase student achievement.
Zittle (2004) explored the effects of whiteboard lessons on the geometry learning of Native American elementary students by comparing pre- to post-test gains between 53 students whose teachers used interactive whiteboards with 39 students whose teachers did not. He found statistically significant differences between the groups with the interactive white board group obtaining an average gain score of 20.76 and the control group averaging a gain of 11.48.

Wall et al (2005) in their study, aimed to gather the opinions of primary school pupils about interactive whiteboards in the smart classrooms, and identify the effects of these tools on teaching and learning. The students listed benefits such as; easier comprehension, higher concentration, improved student participation, more effective presentation of information, use of games, aiding memory, and facilitating and provoking thought.

Beauchamp and Perkinson (2005) stated that when the teacher had used all interactive whiteboard related applications, student interest increased. Other limitations of interactive whiteboards included technical difficulties, software problems and high costs.

Smith et al. (2005) explored that Interactive Whiteboards in the smart classrooms multimedia and multi-sensory capacity contribute a range of advantages for learning process.
Multimedia and multi-sensory presentations can provide a persistent learning. They also believe that the presentation of stimulating visual images contributes to improve students’ recall capacity.

In a literature survey, Smith, Higgins, Wall and Miller (2005) summarized the benefits of interactive whiteboards as flexibility and multiple facets, effectiveness in multimedia use, support for the lesson plan, diversity of resources, development of information and communication technology skills, and more interaction and student participation in classes. A study conducted in 172 classrooms in 97 primary schools across England between 2004 and 2006 yielded both qualitative and quantitative data. The results revealed that students from classes with interactive whiteboards were 5 months ahead of their peers in mathematics, 7.5 months in science, and 2.5 months in literacy. The conclusions included the fact that interactive whiteboards were particularly useful in teaching of abstract, difficult and complex topic.

Beauchamp and Perkinson (2005) reported that teachers should see the interactive whiteboard as a tool for using technology in the classroom and for developing new teaching and learning activities.

Gage (2006) reported that an Interactive Whiteboard (IWB) in classroom is seen as a tool that can assist primary school
teachers to improve their ingeniousness and presentations better subject. She also added that teachers require reconsidering their pedagogy and adapting teaching process while they use Interactive Whiteboards and Information Communication Technology in the classroom.

Dhindsa & Emran (2006) compared pre to post-test gains between college classes taught six organic chemistry lessons either with or without interactive whiteboards in classroom. The authors found statistically significant gains for students taught using interactive whiteboards.

Smith, Hardman and Higgins (2006) observed classes that did and did not use interactive in the classroom for 2 years, and concluded that topics were covered more quickly in classes with interactive whiteboards and that less time was allocated to group work in these classes. Further, the fact that less time was spent on quality communication and discussions was viewed as a negative aspect. Their general conclusion at the end of the study was that interactive whiteboards in the classroom are a useful tool for presentation but not sufficient to realize radical changes in traditional classroom instruction on its own. In addition, student enthusiasm in using interactive whiteboards diminished in the second year.

Stephen et.al. (2007) in their study “Smart Classroom: Enhancing Collaborative Learning Using Pervasive Computing
Technology" propounded that Smart Classroom facilitates collaborative learning among college students. Students in such an environment form small groups to solve a specific problem or develop a group project. In a Smart Classroom, each student has situation-aware Personal Digital Assistants.”

Brown (2007) in his study revealed that “One of the catch phrases tossed about today is “smart classrooms.” These classrooms can make a remarkable difference in how teachers teach and learners learn. What technological components these classrooms actually contain will be a constantly evolving inventory because of the exponential growth of this industry. Conversely, this concept is not about learning to use technology. It’s about using technology to learn. In these environments, information and communication technology becomes integral to the teaching and learning experience in the sense that it helps to define the very nature of the experience, which could not happen without it. So there are tangible and positive effects on teaching and learning.”

Higgins et al. (2007) studied one of the most compelling studies that showed a negligible effect of Interactive Whiteboard (IWB) on achievement was after a two year study, the results indicated that, no significant difference was found in test scores between school using Interactive Whiteboards (IWBs), and schools not using IWBs. In addition, London
schools in the secondary classes whiteboard Expansion Project, where teacher were using the Interactive Whiteboards (IWBs) in various ways, reported no impact on pupil performance in the first year in which department were fully conversant with the technology.

Sevindik (2009) had studied the effect of smart classroom in his research on the topic “Future’s learning environments in health education: The effects of smart classroom on the academic achievements of the students at health college”. The aim of this study was to find out the effectiveness of smart classrooms on the academic achievement of the nursing students. The sample of the research included 66 Health College students in Elazığ. The sampling group was randomly chosen from second year students of Nursing and Midwife Education. The research was carried out with experimental approach. The experimental group included nursing students and the control group, midwife students. Pre-test and post-test including questions regarding “internal diseases’ course were applied to both groups. t-test and percentage were used as statistical procedures for data analysis. The findings showed that lectures given through smart classroom significantly increases the academic achievements of the students. It is, therefore, reasonable to state that smart classroom applications are effective environments that can be used as an alternative and a supplement to face to face
educational environments in the institutions where health education is given.

Marzano (2009) revealed that, students who were instructed using smart board technology showed a substantial increase in the scores over student who received the same instruction without use of interactive technology. Adding various peripheral devices such as the interactive technology further increased the performance of students instructed with the smart board technology.

Torff and Tirotta (2010) in their study in Rowan-Salisbury School District in North Carolina discussed in their findings of 17 point increase in student achievement for those students were using interactive whiteboards in smart classrooms compared to those students that were not. The results of the Marzano Research Study indicated that the average percentile increase in academic achievement between the class that used the interactive board and the class that did not use the board was 17. The 17-percentile point increase is representative of a true change in student achievement and student learning. This is a phenomenal gain in achievement. Furthermore, if the teacher had been using the technology for at least two years, had 10 or more years of teaching experience, had received sufficient training to feel confident in the use of the board and used it as much as 75 percent of the instructional time, the gain in academic
achievement between the class with the board and the class without the board was an average 29-percentile gain in scores.

Singh (2011) studied the effectiveness of smart classrooms on the academic achievement of fourth grade students. The sample for the study comprised of 120 class four students. Out of which 64 students were from the K.C Public School where the Educomp smart classes were incorporated and 56 students were from D.A.V Public School without these Smart classrooms. The research was carried out with experimental approach. The findings showed that lectures given through smart classroom significantly increases the academic achievements of the students.

2.2 An Overview of Related literature

The studies above shown the positive effect on the achievement and learning on the sample tested with the use of smart class or interactive boards. Study of Beeland (2001) supports the use of technology as an instructional tool. Wall et. al. (2005) in their study enlisted students benefits such as easier comprehension, higher concentration, improved student’s participation, more effective presentation of information, use of games, aiding memory, and facilitating and provoking thoughts. Dhindsa & Imran (2006) found statistically significant gains for students taught using
interactive white boards in compare to the students taught without the use of interactive board.

Studies conducted by the above researchers reveals about the effect of various teaching methods on the students’ performance in different disciplines. Taken together, these studies indicated an overall advantage for the smart classroom. It was found from most of the studies that the teaching process would be more effective by using different methods rather than the conventional methods. But all the methods of teaching may not create same impact on the results of the student’s achievement. For these reasons, it was difficult to draw conclusions. This body of research did not offer clear-cut confirmation of the utility of smart classroom, yet neither did it suggest that they were detrimental in commerce achievement. Perhaps the inconclusiveness of the records were there because the investigations that were conducted were not following an agreed-upon agenda.

In the light of above discussion about the studies done so far it was evident that not much work had been done to establish the efficacy of teaching in smart classroom in our country. So the investigator took up the present topic for present investigation.