

CHAPTER-II

REVIEW OF RELATED LITERATURE

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2.1 INTRODUCTION

The present investigation aimed at the effectiveness of ICT approach for teaching Social Science of class VII

Introduction, rationale of the study, objectives, hypothesis, along with the delimitation of the study is presented in the chapter 1. The present Chapter is devoted to the review of related literature. The studies reviewed related to ICT approach, and also the studies related to effectiveness of ICT model with traditional method. And, also the studies are presented below.

2.2 REVIED OF RELATED LITERATURE

2.2.1 STUDIES RELATED TO THE ICT APPROACH

Vardhini (1983) conducted an experiment to test the developed multimedia verses instructional strategy for teaching science at secondary level. The experiment was conducted for an academic year to cover 19 units of the subjects chosen for study. Results revealed that (i) Almost all the units indicated average and high level of performance of the total test. (ii) The strategy was found valid against the criterion of scientific attitude in that significantly higher performance was noted for the group in the post test over the pre test. (iii) Validity of the strategy was established from reactions expressed by students for its continuance and also their improvement in science achievement. (iv) Programmed material and discussion sequence were equally effective on the total test. (v) The strategy was found feasible when seen in terms of its reproducibility and the cost management by individuals schools.

Desai (1985) Investigated into efficacy of different instructional media in the teaching of science to the pupil of class 8th in relation to certain variables. The measure findings of the study were (1) The programmed learning approach was more effective than the traditional way of teaching science. (2) The experimental approach was more effective then the traditional way of teaching science. (3) The use of instructional media indicated the possibility of improvement in the methodology of science teaching, raising the standard of science education in secondary school and development of taste and interest in the younger generation for the subject of science.

Kumar (1998) Designed an experimental study to examine the relative effectiveness of three methods of instruction, exposition method and programmed Learning. The results found that (i) the multimedia method was more effective than either the programmed learning method or the expository method. (ii) The programmed learning method was

more effective than the expository method. (iii) Retention in learning by the multimedia method was higher than by the other two methods. (iv) Retention in learning by the programmed learning group and the expository group was equal. (v) There was no interaction between the three methods of instruction and the levels of intelligence.

Thillaka and Pramilla (2000) conducted and experimented quantitative method to examine the influence of computer-based multimedia programme on achievement in maths among high school students and to find out the difference in achievement in maths between high achievers and low achievers from both relative retention of learning in mathematics. A Sample of 62 was collected from IX Class students. It was observed from the results that there is no influence of computer- based multimedia programme on the achievement in mathematics among high school students. (2) There is no significant change in their attitude towards mathematics after learning trigonometry through computer-based multimedia and text-based self-study material. (3) There is no significant difference in achievement of mathematics between high achievers and low achievers for both experimental and control groups. (4) There is no significant difference in the retention of learning in mathematics between the experimental group and control group. Three references were cited in the study.

According to **Daniels (2002)** ICTs have become within a very short time, one of the basic building blocks of modern society. Many countries now regard understanding ICT and mastering the basic skills and concepts of ICT as part of the core of education, alongside reading, writing and numeracy. However, there appears to be a misconception that ICTs generally refers to 'computers and computing related activities'. This is fortunately not the case, although computers and their application play a significant role in modern information management, other technologies and/or systems also comprise of the phenomenon that is commonly regarded as ICTs. **Pelgrum and Law (2003)** state that near the end of the 1980s, the term 'computers' was replaced by 'IT' (information technology) signifying a shift of focus from computing technology to the capacity to store and retrieve information.

4.Hepp, Hinostraza, Laval and Rehbein (2004) claim in their paper "Technology in Schools: Education, ICT and the Knowledge Society" that ICTs have been utilized in education ever since their inception, but they have not always been massively present. Although at that time computers have not been fully integrated in the learning of traditional subject matter, the commonly accepted rhetoric that education systems would need to prepare citizens for lifelong learning in an information society boosted interest in ICTs (**Pelgrum, W.J., Law, N., 2003**).

Hüsamettin and Durmaz et.al (2006) conducted study On "Effects Of Computer Based Learning On Students' Attitudes And Achievements Towards Analytical Chemistry". The aim of this study was to compare the effects of computer-based learning and traditional method on students' attitudes and achievement towards analytical chemistry. Students

from Chemistry Education Department at Dokuz Eylul University (D.E.U) were selected randomly and divided into three groups; two experimental (Eg- 1 and Eg-2) and a control (Cg). In teaching analytical chemistry topics, two different computer based methods - new analytical 83 chemistry learning software called HEHAsit (Method A) and a Microsoft Excel program (Method B)- were prepared by us and applied to Eg-1 and Eg-2, respectively. Whereas the last group (Cg) was taught by the traditional method (Method C). In the comparison of the effects of the three methods, we developed an attitude questionnaire and an achievement test related to Analytical chemistry, and applied to students in all three groups. Students' attitudes towards computers were also tested by a computer attitude test developed by us. Measures -Analytical Chemistry Attitudes Scale (ACAS) is applied for measuring the interest and attitudes of students toward analytical chemistry. Each item in scale did not include more than one idea. ACAS included 25 positive and 25 negative questions. This scale was applied to 142 students. A descriptive analysis was conducted for each variable and correlation tests were performed among variables. After the evaluation, questions 1, 2, 35 and 38 were ignored because their correlation numbers were negative and/or near zero. Cronbach α -reliability coefficient was 0.97 and validity coefficient was 0.95 after removing low-correlation questions for ACAS. Finally ACAS was used as a pretest and posttest. Computer Attitudes Scale (CAS) is applied for measuring the interest and attitudes of students to computer. Each item in scale was not included more than one idea. CAS was included 60 questions, 30 positive and 30 negative. This scale was applied to 142 students. Correlation test were used to analyze the data. After the evaluation, questions 1, 9, 14, 32, 38, 44 and 52 were canceled because their correlation numbers were negative and/or near zero. Cronbach α -reliability coefficient was 0.93 and validity coefficient was 0,90 after removing low-correlation questions for CAS. Analytical Chemistry Achievement Exam (ACAEE): The purpose of this test was to measure the achievement of students. 9 questions included in the test. Three questions had long answers; six questions had short answers. One of the short answer questions was multiple- choice, one was true false, 4 questions were completing (filling in blank) test. As a result of the study, significant differences between control group and both experimental groups and between experimental groups on computer attitudes and analytical chemistry attitudes were found. Furthermore, analytical chemistry achievement in experimental groups was significantly higher from the control group. The data were analyzed using SPSS statistics program. Paired samples t-test was used to investigate significant differences between pre- and post- test in the groups and one-way ANOVA was used to fix significant differences between groups. p values were considered in order to understand significant differences between groups and in the groups. In this study, students' attitudes toward analytical chemistry and achievement on analytical chemistry (acid-base titration) depending on computer-based learning, and traditional teaching methods compared. The computer program that used in computer-based method was presented on <http://www.enderyilmaz.com>. SPSS program was used to analyze the data. Although significant and positive changes were found on students' attitudes toward

analytical chemistry in method A and B, the results show no significant differences in Cg students' attitudes toward analytical chemistry in traditional teaching method. These results show similarities with previous studies (Kulik & Kulik, 1991; Yates, 2000a, 2000b; Richard & Foust, 2001; Yalçınap, 1993). The results of analytical chemistry test presented students who were thought by method A and method B, were more successful than the students who were thought by method C. Students' interest and attention can easily attract with multimedia applications in computer. In addition, knowledge is not forgotten because number of using sense organs is increased in learning process. It can be concluded that computer based education is more effective than traditional methods on students' attitude towards analytical chemistry. As a result of the study, significant differences between control group and both experimental groups and between experimental groups on computer attitudes and analytical chemistry attitudes were found. Furthermore, analytical chemistry achievement in experimental groups was significantly higher from the control group.

Nachimathu and Vijayakumari (2007) did research on "Modern ICT trends in teaching technology". They pointed out most of the teacher educators are not able to use the media technologies due to lack of training. He suggested that the teachers have to be equipped with the skills and abilities from time to time to handle the latest technology as the quality and competence of teachers affect instruction with a strong impact on student learning.

Nimavathi and Gnanadevan (2008) did a research to examine on "Effectiveness of Multimedia programme in teaching science". Results were found that multimedia programme prepared by the researcher is more effective for the achievement in science of ninth standard students. The students learning through multimedia programme are found to be better than the students learning through the conventional method of teaching.

Krishnaveni and Meenakumari (2010) focused on "Usage of ICT for information administration in higher education institutions". Results revealed that a comprehensive set of functional areas of information administration. It was found that current level of usage indicated a clear integration of ICT for managerial or information based administration in higher education institutions. Enhancing the usage of ICT on these functional areas and especially for general administration will enable enhancement of overall information administration in higher education institutions of global environment. It is serving as a base for education planers to deploy technology based administration in higher education institutions.

Rajakumaran, Soureche and Viswanathan (2010) examined a study to assess the "Role of ICT in teaching and learning Mathematics". It was found that ICT enable the students to manipulate diagrams dynamically and it encouraged them to visualize the geometry as they generate their own mental images. It is also enhanced opportunity for students to be introduced to interesting problems and associated mathematical subject matter much earlier than before possible.

2.2.3 Barriers and Supporting Features of ICT

Iran Shah, (2005) did a study on “ICT awareness, use and need of secondary and higher secondary teachers of English medium schools of vadodara city”. 12 secondary and 10 higher secondary schools were selected using stratified random sampling technique. Further 60 secondary and 50 higher secondary teachers were selected @ 5 teachers from each selected school. A total of 90 teachers out of 110 responded. It was found that a low degree of ICT awareness, use and need of secondary and higher secondary teachers. The variables related to ICT awareness of teachers were teaching experience, age and total salary. The variables related with the ICT use of teachers were total salary and computer training. The variables related with the ICT need of teachers were the degree program which they attended at the university level.

Jonathan (2005) carried out a study on to examine the interplay of institutional forces behind higher ICT education in India. This study was observed three main empirical findings that is 1. Technology related higher education in India is clearly focused on the global economy and it is worthwhile to note –the American led global economy. There is a tremendous reverence for western specifically American standards and forms of knowledge. 2. An exception of this reverence that stands out is that Indian curriculum is overwhelmingly technical, to the detriment of the social sciences which clearly have second class status. 3. The footprint of industry is quite large, reflected in the attitudes of academics and in the formal curriculum development process.

Khalid Abdullah (2009) conducted a study on “Barriers to the successful integration of ICT in teaching and learning environments”. The study found that teachers have a strong desire for the integration of ICT into education but that they encountered many barriers to it. The major barriers were lack of confidence, lack of competence, and lack of access to resources. Since confidence, competence and accessibility have been found to be critical components for technology integration in schools, ICT resources including software and hardware, effective professional development, sufficient time, and technical support need to be provided for teachers.

Prabir, Sahu and Afzal (2011) studied on “Right to Education: effective use of ICT for reaching out to socially and economically weaker sections in India”. This study revealed that most of the enrollment in the coming several decades will be in developing countries and India will contribute a significant proportion of that expansion. India by enacting right to education act, 2009 has set out on an ambitious path to provide free and compulsory education to all children in the 6 to 14 age groups. As a result the number of students enrolled in elementary schools in far flung villages would definitely see a quantum jump. Challenges of funding, availability of qualified teachers, and building a sustainable academic culture and school infrastructure are significant and real. Providing access to the free education for the children of downtrodden peoples like tribal lower castes, and dalits is a complex issue in India wherein the fragmentation in the society along religious, ethnic

and linguistic lines is deep rooted. In addition, rampant poverty which is the root cause of child labour leaves no time for the affected children to undertake formal schooling. We also explore the ways in which the strengths of ICT can be averaged in achievement of the goal.

2.3 CONCLUSION OF REVIEW OF RELATED LITERATURE:

By studying to above researches gets clear that the studies have been conducted in the field of ICT especially at higher level in a broad sense. There are many researches which have been conducted to see the effect of different teaching methodology on the achievement of the students. Hence above mentioned researcher were the bases for the present study. All the researches which had been conducted in field multimedia had shown positive impact on student Achievement and Retention student enjoy the learning environment which will enhance the student's capabilities and ability to perform the tasks. The gape which I had found after the review of those studies as mentioned in my report was that very few studied were conducted in elementary level therefore I had decided to see the effect of multimedia on VII class. In this chapter many review have been given which are directly and indirectly related to present study.