

CHAPTER – 1

INTRODUCTION

“Nothing is constant in the world but change...”

Heraclitus of Ephesus (c.535 – 475BC)

1.1 INTRODUCTION

Mathematics and Science have always been important areas of the study for students both in elementary and secondary schools. As the 21st century closer, citizens of the whole world, have a greater need of high quality mathematics and science. Mathematics plays a major role in the development of the civilization if we remove mathematics from daily life then the civilization comes to a standstill. In this world of today nobody can live without mathematics for a single day. It is intimately involved in every moment of everyone's life.

Mathematics is a subject which is feared by many students and even their parents. It is a common seen during the parents – teachers meeting in schools, when parents express their helplessness to guide their child for practice or revision of geometric concepts at home. Sometimes the students are done well in arithmetic or in algebra but they face many difficulties to understand the concept of geometry for eg:-How to calculate surface of? difficulties to differentiate 2 dim and 3 dim figures. How to derive the equation of finding the area and volume of cylinder, cone, cuboids etc. In schools, if students face problems in understanding a particular concept then these inadequately understood concepts become blocks in understanding other concepts. In fact, it can become one of the major reasons for phobia or dislike of the mathematics.

According to Steen(1989) mathematics does not only empower people with the capacity to control their lives but also provides science a firm foundation for effective theories, and also guarantees society a vigorous economy. Therefore, special attention is being paid to Mathematics and Science because these two subjects play a vital role in the development of any country. Plato a famous thinker in the seventh book of his masterpiece, The Republic stressed on the study of Mathematics. Abdul Kalam, who was the 11th president of India from 2002 to 2007, a renowned scientist and engineer, insisted that mathematics and science are useful in the real world. Mathematics and

Science create the basis of our modern world and as long as our present generation continues to focus on Mathematics , we can benefit the world.

Rapid scientific and technological developments along with changes in the structure of the society influence the educational system in general and instructional method in particular. Such a trend brings about new attempts and needs in terms of the teaching learning processes. Among these new attempts is the use of computers in instructional endeavour as they are considered as effective communication and individual learning tools.

The integration of technology in education is a growing phenomenon. A tremendous amount of time and money has been devoted to making technology accessible to students with the promise of increased student achievement. Computers are used as teaching tools and a means for creating work product. A closer look at the connection between students' use of technology and the resultant learning is needed. Parallel to the development of these devices, which represent the most important components of the information and communication technologies, science education in general and physics instruction in particular do make use of such tools to improve learning practice.

When the Indian education system is examined, it is observed that face-to-face instruction is the most commonly used instruction practice. This system is mostly based on a teacher centred learning atmosphere where the focus of the instructional activities is learning. Thus the student can have problems in assigning meaning to information, understanding the content as a whole, locating new information in their schema and transforming this information to knowledge. Concept used in the physics class room are mostly abstract making the information hard to grasp, which make the class quite boring and difficult.

In order to remove the barrier streaming from the abundance of abstract knowledge several cognitive strategy are assumed. Many of them seem ineffective to sustain higher level of teaching experience. In this respect Computer Assisted Programme can be considered as a fruitful endeavour to integrate science and technology and improve the quality of learning experiences.

1.2 STATEMENT OF THE PROBLEM

The problem under study could be stated as:

“Effectiveness of Computer Assisted Programme for Students of Std-IX in Mathematics”

This study is an experimental study. This attempt is to develop and check the effect of Computer Assisted Teaching Programme in the teaching of Mathematics is supposed to be different from other researchers conducted in this university as per knowledge of the researcher.

1.3 HYPOTHESES

H₀₁: There will be no significant difference in mean achievement scores of Control and Experimental Group on post – test.

H₀₂: There will be no significant difference between frequency expected and Observed frequency on equal probability hypothesis.

1.4 OBJECTIVES OF THE STUDY

There are two types of objectives one is Task objectives and other is Research objectives.

♦ Task Objectives:

- (i) To plan the Computer Assisted Programme to teach concept of Geometry to the students of Std – IX.
- (ii) To prepare the Computer Assisted Programme to teach concept to Geometry of the students of Std –IX.
- (iii) To implement the Computer Assisted Programme to teach concept of Geometry to the students of Std –IX.

♦ Research Objectives :

- (i) To study the reaction of students towards developed programme.

- (ii) To evaluate the effectiveness of the programme by comparing the mean scores of post – test between Experimental and Control Group.

1.5 RATIONALE OF THE STUDY

The researcher has selected this topic because she has studied mathematics till P G Level. She has come across many students who have faced various problems in learning new concepts in mathematics. Students who are introvert cannot share their doubts with the teachers and this creates hindrance to understand the next concept. Computer Assisted Programme (CAP) is a technique in which students learn as per their understanding, through discussion between teacher and students. CAP through learning helps to share the views and ideas of the students and it also helps to clarify the doubts of the students. Mathematics is the subjects in which main focus is given on learning by doing. Learners learn through experiences or experimenting on the new concepts. In the classroom, learners do solve the problems and they construct their own knowledge. Similar aspect needs to be applied in theory through subjects develop self-confidence and their self-esteem may be increased. CAP is beneficial for all students i.e. average learner, slow learner and for the gifted students also. So, the researcher wants to do research study to know the effectiveness of the CAP.

1.6 VARIABLE OF THE STUDY

Independent Variable – Computer Assisted Programme (CAP)

Dependent Variable – Achievement Score

1.7 OPERATIONALIZATION OF THE TERMS

(i) Effectiveness :

For the present study, Effectiveness refers to bringing out of the result intended. Here effectiveness means the effect of Computer Assisted Programme on the achievement of the students of std – 9 in Mathematics.

(ii) Computer Assisted Programme (CAP) :

For the present study, Computer Assisted Programme is a teaching programme recorded on a C.D which is constructed using Power Point

Presentation. This can be presented through computer. The CAP is prepared on selected Chapter – 15 Surface Area And Volume of Mathematics for the students of std – 9.

1.8 DELIMITATIONS OF THE STUDY

The present study is delimited as follows:

1. The study is delimited to English Medium students only.
2. The study is delimited to GSEB students only
3. The study is delimited to concept of Surface Area and Volume in Mathematics.

1.9 SCHEME OF CHAPTERIZATION

The dissertation has been divided into five chapters. The scheme of chapterization is as follows:-

Chapter – 1: Introduction The chapter begins with an introductory note and states the problem of the study with the objectives of the study undertaken, hypotheses framed and rationale of the study as perceived by researcher.

Chapter – 2: Conceptual Framework and Review of related Literature This chapter is divided into two parts, First part focuses on the conceptual framework or theoretical background of the study and Second part begins with stating the objectives with which review of related literature is done and then presents the different studies reviewed for the present work.

Chapter – 3: Research Methodology This chapter focuses on the methodology adopted in the present study. It describes in detail about the research design selected for the presents study, the tools used and the procedure adopted for data collection as well as data analysis.

Chapter – 4: Data Analysis and Interpretation In this chapter the collected data has been analyzed and presented in a tabular form. Interpretation based on the findings have been presented and discussed in the light of the present study undertaken.

Chapter – 5: Findings, Implication, Suggestion and Conclusion The last chapter of the dissertation deals with the conclusions drawn from the present study. It also presents some suggestions for the future studies that can be undertaken in the field.

1.10 CONCLUSION

This chapter mentions all important concepts to the research. The researcher gave short information about the research problem and other main points like problem, hypotheses, delimitation, variables, explanation of terms, objectives, rationale and chapterization.

The next chapter is about Conceptual Framework and Review of Related Literature.