CHAPTER VII

MAJOR OBSERVATIONS, CONCLUSIONS AND SUGGESTIONS

7.1 Introduction.
7.2 Major observations.
7.3 Conclusions of the study.
7.4 Educational implications and suggestions.
7.5 Suggestions for further research.
CHAPTER - VII

MAJOR OBSERVATIONS, CONCLUSIONS AND SUGGESTIONS

7.1 Introduction

Effective and fruitful research in any field should end in serving the needs of the society. In case of education, the true research should aim at helping either the teacher or the pupil in dissemination of knowledge or its learning. The main focus of an instructional system is to bring about desirable changes in the behaviour of the learner. Traditional teachers make use of particular mode for presenting the content which seems to be best suited to them. Innovative teachers always look for educational technology to increase the effectiveness of teaching. The practising teachers in educational institutions who have not undergone any professional training and are not familiar with educational technology believe in the traditional way of teaching. Unfortunately the research findings are not disseminated properly, most of the teachers are not familiar with any of the new instructional systems developed. Hence, teachers do not develop any confidence or faith in the modern instructional system. Their feeling is that the knowledge imparted at teachers training colleges can not be implemented practically. In other words, it can be admitted that educational researches have failed to convince these type of teachers. It is the duty of the researchers to convey the
effectiveness of the new instructional system through their valid research findings. In this chapter the investigator has noted the major observations, conclusions drawn on the basis of statistical analysis and suggestions. It is hoped that results of the present study will be helpful to the practising teachers and educational planners in their planning.

The present study was an experiment to decide the effectiveness of different instructional media. Here, the investigator developed three instructional media and their efficacy have been investigated in terms of achievement. These three media were developed for two units of algebra of class IX. First instructional media was Visual projection. Second instructional media was Activities and experiment. Third instructional media was Programmed learning material. Efficacy of each of these media was compared with one another and also with Traditional method of teaching.

During this process of investigation, the investigator made certain observations which are described at length in the following lines.

7.2 Major observations

It was observed that pupils of the schools, selected for the present investigation, were not
acquainted with standardized tests. This shows that they were not administered this type of tests in the past. As such, they were found anxious and feeling fear of examination. Of course, the present investigator had tried to convince them that it was not a test or examination, but it was for the research purpose only.

There were 369 pupils in the eight classes of two schools. When JIM scale was administered only 352 pupils were available and when test of reasoning ability was administered 354 pupils were available, remaining pupils were not present during the process of administration.

It was further observed that pupils were very much curious to know their scores on the standardized tests.

In case of JIM scale, pupils thought that out of the four alternatives given, one was correct. So, they were quite eager to know the correct response, though the explanation was given to them that they have to write their choice. Out of 352, only three pupils scored between 150-159 i.e. the highest range. Mean score for this test was 109.69. Maximum obtainable score for this test was 200. This shows that the performance on JIM scale was almost average.
In case of test of reasoning ability most of the pupils were not able to respond to sub tests number fifth and sixth, based on factual reasoning and numerical reasoning respectively. Only eight pupils, out of 354 from both the schools, were able to score between 70-79 i.e. the highest score range. Maximum obtainable score for the test was 95, and the mean score obtained was 46.7. This shows that pupils were average on the test of reasoning ability also.

Instead of randomization, the present investigator matched the groups on two standardized tests. It was observed that principals and pupils of both the schools were highly cooperative to the investigator. They welcome making any changes according to the need of the experiment. Investigator faced certain difficulties during sampling procedure, as matching the group is very complex procedure. In order to make groups as equivalent as possible, one has to match on more than one variable because of the composite human traits. The investigator administered two standardized tests to all the eight classes and then decided to select pupils from certain range. Mean, S.D. and $Q_1$, $Q_3$ for the scores on both the tests were computed. Finally, pupils were selected from the range $X - 1 \sigma$ and $X + 1 \sigma$. Thus, in this range 248 pupils were available from JIM scale and 255 pupils were available from test of reasoning ability.
reshape the instructional process. The following conclusions were drawn on the basis of analysis of available data.

(1) The instructional media I, namely Visual projection and the instructional media II, namely Activities and experiment are equally effective for unit I.

   The instructional media I, namely Visual projection is superior to the instructional media II, namely Activities and experiment for unit II.

(2) The instructional media I, namely Visual projection is superior to the instructional media III, namely, Programmed learning material for unit I, while they are equally effective for unit II.

(3) The instructional media II, namely, Activities and experiment is superior to the instructional media III, namely Programmed learning material for unit I, but they are equally effective for unit II.

(4) The instructional media I, namely, Visual projection is superior to the Traditional method of teaching for unit I and unit II.

(5) The instructional media II namely Activities and experiment and Traditional method of teaching are equally effective for both the units - unit I and unit II.
The instructional media III, namely Programmed learning material and the Traditional method of teaching are equally effective for unit I and unit II.

The results inferred clearly indicate that the instructional media I, namely Visual projection is comparatively more effective than any other instructional media like Activities and experiment or even Programmed learning material, for teaching of mathematics. Programmed learning material and Traditional method of teaching are equally effective for both the units, which contradicts some of the researches previously conducted by Sharma (1966), Shah (1969), SIE (1970), Suthar (1980), and Pandey (1982), however the results obtained support the findings of Kulkarni and Yadav (1966) and Chen-Linc Kulik (1982).

It is also found in the present study, especially for unit I, that the low achieving pupils are comparatively more benefitted by Programmed learning material than the high achievers and the average achieving pupils. The high achievers are found performing well even in Traditional method of teaching mathematics. The first part of this finding suggests that further researches are needed to find out the reasons for that. In the same way it is also observed, in case of unit II, that the low achieving
different units. It is to be noted here that development of even slides is less expensive and comparatively easy.

NCERT, state institute of education and departments of extension services should provide certain facilities to design and use instructional media. There should be separate cell which continuously works for media innovations. This cell can locate a group of very creative teachers and find out what and how they teach. Based upon their methods and procedures instructional media can be developed.

Moreover, teachers training colleges should introduce a new subject namely, educational technology with major emphasis on instructional process and media innovation.

7.5 Suggestions for further research

Research in any branch of human knowledge is never a closed book. There is always a need for finding solutions to new problems and testing the results of the older problems. From the retrospection of the present study the investigator felt that further researches are necessary in order to add and shed new light to the work already done. The present study leaves much scope for further researches, as it intended to investigate the efficacy of selected instructional media. The investigator, on the basis of his experience during research, findings of the study, as
well as his study of literature, would like to offer suggestions as follows.

(1) The present study was confined to only two units of algebra of standard IX. Further similar studies may be taken up for other units of algebra of standard IX, as well as other units of arithmetic and geometry.

(2) The present study needs to be replicated on different samples of pupils.

(3) The present study was confined to only three instructional media, viz. (i) Visual Projection, (ii) Activities and experiment and (iii) Programmed learning material. Similar studies may be taken up using other instructional media, such as, multi-media packages, Video-vision and radio vision.

(4) The present study was confined to the formal classroom setting. Similar study can be taken up for non formal education programmes.

(5) The present study was confined to the pupils of grade IX of secondary school. Similar studies can be taken up for higher secondary and primary classes also.

(6) A study can be taken up to inquire about the attitudes of teachers towards different instructional media.
(7) A study based on cost benefit analysis of different instructional system should be taken up to have a comparative picture of the instructional media with respect to time, cost and outcomes.

(8) Visual projection along with audio-tape can be prepared and tried out for various school subjects.

(9) Various instructional media can be prepared and their efficacy can be investigated in relation to certain variables like sex, intelligence, grade level, reading comprehension and creativity.

(10) Effectiveness of different instructional media for inservice training can be studied.

(11) Programmed learning material used in the study, is restricted to linear style only. For a wider application of programmed learning material, programmes of branching style should be developed and its efficacy should be investigated.

There could be many more problems to study in the area under reference. The present investigator has just attempted to point out certain possible researches in the form of suggestions and it can not be said that the list is complete.

The investigator expresses the hope that the present investigation would be an humble addition to the
body of knowledge in the field of media technology. Investigator also hopes that it would provide inspiration to the researchers who wish to probe further.