

CHAPTER TWO

Review of Related Literature

2.0.0 INTRODUCTION:

In the first chapter a detailed discussion about the aim and objectives of teaching arithmetic, how can we arouse and maintain interest in teaching arithmetic and uses of alternative instructional material are done. This discussion hinted at the effectiveness of alternative instructional material. Need of the effectiveness of alternative of alternative instructional material on arithmetic achievement which is the focal point of this study. A comprehensive review of research literature was under taken to explore the effectiveness theoretical framework about this effectiveness emerges.

While reviewing the research literature, through the concentration was on the studies investigating effectiveness of material on arithmetic achievement and involving variables such as gender, locale and Intelligence level were also included

The essential aspect of a research project is the review of related literature before taking up the research project. It helps the researcher in many ways in conducting study with insight. Review of related literature is must for any research, as it helps like a map by which a scholar can identify the track or route to the destination.

Any research whatever the scale will involve reading about their area of interest gathering evidences to support or refuse their arguments and finally drawing their conclusion on the basis of available evidences.

Review helps the researcher to delimit and define problem avoiding duplicating well-established findings. It gives the researcher an insight into the problem and methodology. There fore the purpose of the reviewing of literature is to build up the context and background of hypothesis.

Different types of instructional and supplementary material have been developed in different subject area such as social studies, languages, science, mathematics etc. The review of related literature of material developed in mathematics and its effect on different variables are included. As the present study in the subject area of Mathematics following are the few studies carried out in the area.

2.1.0 REVIEW OF RELATED RESEARCH LITRATURE

1. Das, R.C. and Barua,A.P.(1968) . Effect of Remedial Teaching in Arithmetic, a Study with Grade IV Pupils.

For the purpose of diagnosis of individual differences F.J. Schonell's "Diagnosis arithmetic tests" were adopted. There were although 604 sums. Pre test posttest experimental control group designed was followed. in each group there were 30 pupils. T-test was applied to compare test wise and total average achievement of both the groups.

The major conclusion of the study was that remedial teaching had definitely improved significantly the achievements in arithmetic.

2. Shah, J.C. (1981). To Develop and try out Programmed Material in Mathematics for Students of Class V.

The main objectives were:

- To develop programmed material on various units of the mathematics syllabus of class V.
- To try out the same on children of class V from the selected schools.

The findings of the study were:

- Programmed material on the selected units was effective
- The reaction of the students and the teachers was favorable.

3. Vyas,C.S.(1983). Development of Symbol Picture Logic Programmed(SPLP) and to Study its Effect on Mathematics Achievement- A System Approach.

Objectives:

- To develop a SPLP on the basis of the fundamental of symbolic logic.
- To study the effectiveness of the SPLP on the achievement in mathematics.
- To identify the effect of the SPLP in the context of variables like intelligence and syllogistic reasoning ability.

- To find the effectiveness of the SPLP in the context of other variables like parent education, sex and the choice of mathematics course at the S.S.C. level.

Methodology:

The SPLP was developed keeping in mind the basic element of logic to be included in mind the basic element of logic to be included in set programmed and the basic connectives in symbol picture logic, the equivalent group technique was adopted. The tool was used to measure Intelligence K.G. Desai. Intelligence test to find the effect of SPLP in relation to achievement, Parent's education and sex.

Major Findings:

- The students of the experimental group who were given a treatment of the SPLP showed better achievement in mathematics than the control group students.
 - The students with high intelligence benefited more by the SPLP by better achievement in mathematics than those who possessed low intelligence.
 - The students possessing high reasoning ability benefited more by the SPLP by better achievement in mathematics than those who possessed low reasoning ability.
 - There was no interaction between treatment and intelligence.
 - There was no interaction between treatment and syllogistic reasoning ability.
 - There was no interaction effect of intelligence and syllogistic reasoning ability of the students.
 - There was no interaction among the programmed, intelligence, and syllogistic reasoning ability. This showed that the achievement in mathematics was independent of these three variables.
 - The students of the experiment group possessing high intelligence and high reasoning did better in achievement in mathematics.
- 4. Wagh, S.K. (1991). Development of a Multi-media Instructional System for Remedial Measure in Fractional Numbers. Ph.D.**

Objectives:

- To develop a multi-media instructional system for remedial measures in fractional numbers, according to the multi media instructional system for developing computation skills.
- To compare the results of this approach to those of the traditional approach of remedial teaching and thus to find the difficulty levels of skills experienced by the students in fractional numbers.

Major- Findings:

- In fractional numbers and their operations, students were found to commit common error in basic process, cross- multiplication, the terms used , and in mixed operations in addition, subtraction, multiplication and division.
- The facilities, resources and raw material, for the instructional material were available but were not used in schools.
- A multi-media instructional system (MIS) was designed and constructed.
- The traditional instructional system (TIS) and MIS remedial approaches both helped students in improving their performance on all the six computational skills in fractional numbers.
- The skill-wise and overall differences between the means of gains of boys and girls from the control group and experimental group were found to be non – significant.

5. Nalayini,S. (1991). Effectiveness of Using Number Games to Teach Arithmetic at Primary Level.

Objectives:

- To find the number game on primary school children in doing mathematical operations.
- To study the relationship between their family background including the economic and educational level of the parents.

Major Findings

An eight comparisons, five comparisons showed significant improvement due to the supplementation of ordinary teaching by number games. In the other three comparisons, though the difference was not significant, the means of the experimental group were higher than the control group mean.

- It was also found that neither the educational level nor the economical status of parents influenced the arithmetic growth score of the pupils.
- Thus, it was concluded that number games motivated children to develop the comparison skills.

6. Bhagwat, sunita A. (1992). To Prepare a Package of Divergent Production Type Problems in Mathematics and to Study the Effectiveness of the Package Against level of Intelligence and Sex Differences for Standard VIII Students in Pune City. Ph.D. Education.

Objectives:

- To prepare different production type problems on the standard VIII mathematics syllabus in Maharashtra state.
- To test the effectiveness of the package against the level of intelligence for standard VIII students.
- To test the effectiveness of the package against the sex differences of standard VIII students.

Methodology:

An incidental sample of 50 students (25 boys and 25 girls) was chosen for pilot study. A similar procedure was followed for the main study Sample was divided into two groups of 50 each on the basis of level of intelligence. The tools used to collect data included, a standardized test measuring creativity in mathematics, Raven's Progressive Matrices, a package of divergent production type problems prepared by the researcher. The experiment was concluded using the Pre-test, Post-test group design. The data we analyzed by using correlated 't' test and analysis of co-variance.

Major Findings:

- There was a significant increase in the posttest scores in the case of both girls and boys.
- Taking into consideration the three levels of intelligence, it was found that there was a significant increase in the posttest scores in the case of both boys and girls.

7. Bhatia, Kusum. (1992). **Identification and Remedy of Difficulties in Learning Fractional with programmed instructional material.**

Objectives:

- To develop programmed instructional material on fractional number for students of class V.
- To use programmed instructional material as a remedial material.
- To test the effectiveness of programmed instructional material in classroom teaching for the students of class 5.
- To test the significance difference between the traditional method of teaching and teaching through programmed instructional material.

Major Findings:

- Teaching and learning through programmed instruction could definitely help both students and teachers.
- Students receiving the programmed instruction material did better in posttest as compared to the other group.
- The programmed instructional material worked effectively as a remedial tool.
- Programmed instructional material not only helped the students to learn better but also helped the teacher to know how the students learn better.

8. Prabha , Rashmi. (1992) . **An investigation into the Effectiveness of Programmed. Mathematics in Relation to some Social-Academic Variables.**

Objectives:

- To compare learning through programmed text in mathematics and through traditional teaching
- To see whether the mothers education , fathers education, parental professions ,parental income and caste effect the achievement through programmed text

Major Findings:

- The programmed text group performed significantly better than the traditional method group
- Mothers education , fathers education, parental professions ,parental income and caste significantly effect achievement in mathematics.
- The father's Profession not significantly effect achievement in mathematics.