CHAPTER – III

EMERGENCE OF THE PROBLEM
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The previous two chapters introduced the variables involved in the study viz. Cooperative learning, attitudes, achievement, social skills and cognitive style. Also review of related literature was presented in Chapter II. This chapter deals with the need of the study, statement of the problem, objectives, hypotheses and delimitations of the study.

3.1 NEED OF THE STUDY

Everyone has an individual learning style. Our interests and genetic make-up determine what we can learn, how well we may learn and how well we can apply what has been learned. Some people excel at analytical tasks, while others are more concrete in nature.

Not everyone has the innate abilities to perform the given tasks efficiently. Consequently, all methods of instruction do not align with the learning capabilities of each individual learner. Either we must devote time to each learner individually or rely on other means to assist each learner to progress which is not possible as it requires more human resources than are available to schools. Consequently, teachers have to rely on large group instruction in which number of students experience problems in understanding of concepts, questions and answers, problem solving, experiments and projects. So there is a need of team of individuals to pull together to get tasks accomplished (Flowers and Ritz, 1994). Also research on student through processes is
Emerging of the Problem

based on the belief that teaching is mediated by student thought processes and that teachers influence student achievement, not directly, but by causing students to think and behave in certain ways (Wittrock, 1986).

Cooperative learning is one of the teaching learning strategies which is not expensive, makes learning easier and more enjoyable for the student. It is an easy technique to implement in the classroom, particularly in a block scheduled time table. The rationale for using cooperative learning techniques is that the principles on which they are grounded are important not only for helping people to work together better, but also for recognizing everyone's gifts and strengths. Still, questions continue to surface about students' performance in small group settings. It seems that not all students receive the same benefits from participation in heterogeneous cooperative learning groups.

Since the first research study in 1898, nearly 600 experimental studies and over 100 correlational studies have been conducted. Experimental research has shown that cooperative learning techniques tend to: (Johnson and Johnson, 2001)

- promote student learning and academic achievement
- increase student retention
- enhance student satisfaction with their learning experience
- help students develop skills in oral communication
- develop students' social skills
- promote student self-esteem
- increase liking of school, and
- tolerance for individual differences.
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The great majority of studies find equal benefits for all types of students. The research indicates that high achievers gain from cooperative learning (relative to high achievers in traditional classes) just as much as do low and average achievers (Slavin, 1995). But individual differences are always there.

Mathematics is considered to be an exceptionally difficult subject by various students. The pass percentage of middle and high school examination in this subject is low in comparison to other subjects of the school curriculum. This backwardness in subject is may be due to lack of interest and wrong methods of learning.

In cooperative learning settings, group of students of mixed abilities help each other to learn by discussing the things which include self-effort and understanding the material in greater depth.

Cooperative interdependence in classroom settings is the basis of many interventions designed to improve both academic achievement and social relations in schools and as such has been a primary focus in educational and social psychological literature for more than three decades.

The investigator believes that it is natural tendency of children to grow and learn through social interaction and that understanding cooperative interactions within school contents will not only help children achieve educational goals but also create more long term benefits for human kind.

Through number of studies have been conducted abroad with students at middle level regarding mathematics achievement
but fewer have focused on India on individual differences like cognitive styles and development of social skills among students. Our purpose in this study was to help bridge this gap in the research literature by investigating the effects of cooperative learning on students’ attitudes, achievement and social skills in the mathematics classroom of seventh class students with different cognitive styles.

3.2 STATEMENT OF THE PROBLEM

EFFECT OF COOPERATIVE LEARNING ON ATTITUDES ACHIEVEMENT AND SOCIAL SKILLS OF SEVENTH GRADERS WITH DIFFERENT COGNITIVE STYLES

3.3 OBJECTIVES OF THE STUDY

1. To develop instructional material based on cooperative learning for teaching class VII students.

2. To study the effectiveness of instructional treatments (cooperative learning and conventional group learning) for field-independent and field-dependent students with respect to their attitudes towards mathematics.

3. To compare the mean gain on achievement scores in mathematics of the students taught through different instructional treatments (cooperative learning and conventional group learning).

4. To study the effectiveness of the two instructional treatments for the field-independent and field-dependent students.

5. To study the effectiveness of the two instructional treatments for field-independent and field-dependent group
of students at knowledge, comprehension and application categories of objectives.

6. To compare the retention scores of students exposed to different instructional treatments.

7. To study the effectiveness of the two instructional treatments for field-independent and field-dependent group of students with respect to retention.

8. To study the effects of two instructional treatments for field-independent and field-dependent groups at knowledge, comprehension and application categories of objectives on retention scores.

9. To study the attitudes of students towards cooperative learning.

10. To study the effects of two instructional treatments for field-independent and field-dependent group of students with respect to social skill scores.

3.4 HYPOTHESES

Hypotheses for analysis of mean difference scores on attitudes towards mathematics.

H_1_ The two instructional treatments yield comparable mean difference scores on attitudes towards mathematics.

H_2_ There is no significant difference in mean difference in mean difference scores of attitudes towards mathematics of field-independent and field-dependent group of students.

H_3_ There is no significant interaction between instructional treatments and types of cognitive style.
Hypotheses for analysis of gain scores on achievement in mathematics

H₄ The two instructional treatments yield comparable mean gains on achievement scores in mathematics.

H₅ There is no significant difference in mean gains on achievement scores field-independent and field-dependent group of students.

H₆ Comparable mean gains on achievement scores are yielded by students at knowledge, comprehension and application categories of objectives.

H₇ There is no significant interaction between instructional treatments and types of cognitive style.

H₈ There is no significant interaction between instructional treatments and categories of objectives.

H₉ There is no significant interaction between types of cognitive style and categories of objectives.

H₁₀ The two instructional treatments attain comparable mean gain on achievement scores with both types of cognitive style at knowledge, comprehension and application categories of objectives.

Hypotheses for analysis of retention scores

H₁₁ Retention is independent of instructional treatments.

H₁₂ Retention is independent of types of cognitive style.

H₁₃ Retention is independent of categories of objectives.
H\textsubscript{14} Field-independent and field-dependent students retain comparably when exposed to different instructional treatments.

H\textsubscript{15} Students when exposed to different instructional treatments retain comparably at knowledge, comprehension and application categories of objectives.

H\textsubscript{16} Field-independent and field-dependent students retain comparably at knowledge, comprehension and application categories of objectives.

H\textsubscript{17} Field-independent and field-dependent students retain comparably at knowledge, comprehension and application categories when exposed to different instructional treatments.

**Hypothesis for analysis of scores on attitudes towards cooperative learning**

H\textsubscript{18} Field-independent and field-dependent group of students exposed to cooperative learning exhibit comparable attitudes towards cooperative learning.

**Hypotheses for analysis of mean difference scores on social skills**

H\textsubscript{19} The two instructional treatments yield comparable mean difference scores on social skills.

H\textsubscript{20} Field-independent and field-dependent group of students yield comparable mean difference scores on social skills.

H\textsubscript{21} There is no significant interaction between instructional treatments and types of cognitive style.
3.5 DELIMITATIONS

- The study was conducted on class VII students of two schools of Chandigarh, Government Model Senior Secondary School, Sector 19-C and Government Model Senior Secondary School, Sector 10-A Chandigarh.

- The study was conducted only on mathematics syllabus of class VII as prescribed by N.C.E.R.T., New Delhi, 2003

- Only ten chapters were selected for instructional treatment.

- The experiment was limited to 60 days of the academic session.