CHAPTER I

1.1 Introduction

There are basically three learning situations which can be designed within a classroom- Individualistic learning, Competitive learning and Cooperative learning. In Indian education the individualistic and competitive learning situations are predominantly focused upon. In these situations students are made to learn individually and then subjected to competition within the four walls of the classroom. In such a scenario, somewhere we are focusing only on academic success and not on overall excellence. As of now when the focus is shifting towards child centered education and constructivism, educationists have started taking note of cooperative learning and its inclusion in the transactional process.

Cooperative Learning is a systematic pedagogical strategy in which small teams each with students of different levels of ability, use a variety of learning activities to improve their understanding of a subject. Each member of the team is responsible not only for learning what is taught but also for helping the team learn, thus creating an atmosphere of achievement, Students work through the assignment until all group members successfully understand and complete it. In cooperative learning, it is believed that learning occurs best through reflecting inquiry with others who help the learner negotiate his or her own degree of potential under the best condition. In a cooperative learning setting, students are encouraged to discuss challenging tasks and take part in problem solving activities in well designed heterogeneous teams with the intention of subjecting them to diverse ideas and thus developing in them habits of minds such as objectivity and critical thinking. Cooperative learning makes students not only learn through experience but to feel and internalize different solutions and strategies for facing and tackling problems in a well designed meaningful context set by the teacher who plays the role of an integrative rather than dominating teacher. Cooperative setting helps students feel more valued in comparison with the situation in traditional system of teaching. They have the liberty to form their teams, assign one another roles, assess their partner, and even in some methods of cooperative learning negotiate the course objectives with teachers. Students are provided with different

challenging activities, which encourage them to learn different solutions to the problem at hand via critical thinking in a meaningful and reciprocal interaction. They also have opportunities to feel and enjoy the results of their shared learning in class wide discussion.

All these factors led the researcher to undertake a study on cooperative learning in teaching science as the researcher wanted a first hand experience of the same with students.

1.2 Statement of the Problem

Specifically, the problem of the study can be stated as-

"Effectiveness of Cooperative Learning in Teaching Science in Standard VIII"

1.3 Identification of Variables

Variables are the conditions or characteristics that the experimenter manipulates, controls or observes.

Independent variables are the conditions or the characteristics that the experimenter manipulates and observes in his/her attempts to ascertain their relationship to observe phenomena.

In the present study the **independent variables** identified are-

1. Cooperative Learning
2. Traditional Learning

The dependent variables are the conditions or characteristics that appear, disappear or change as the experimenter introduces, removes or changes independent variables.

Hence in the present experiment the **dependent variable** taken into consideration is-

1. Academic Achievement

1.4 Explanation and Operationalisation of terms

- **Cooperative Learning**

  Cooperative learning is the instructional use of small groups so that students work together to maximize their own and each other's learning as per the definition given by Johnson, Johnson, & Holubec.

- **Traditional Learning**

Traditional Learning is referred to as learning through chalk and talk method or teacher centered method in which individual learning and competitive learning are inherent.

- **Academic Achievement**

For the present study, academic achievement implies effect of cooperative learning strategies on the academic achievement of the students, which is measured in terms of the scores, obtained through post test and delayed post test.

1.5 Objectives of the Study

The following objectives were framed for the study -

2. To study the Science textbook of standard VIII.
3. To prepare lesson plans based on cooperative learning for teaching Science at standard VIII.
4. To implement the cooperative learning based lesson plan for teaching Science in standard VIII.
5. To evaluate the effectiveness of cooperative learning based lesson plan in terms of the academic achievement of students.
6. To study the feedback of students towards cooperative learning.

1.6 Hypotheses

For the present study the following hypotheses were formulated.

1.1 There will be no significant difference between the mean achievement scores in the post test of the experimental group and the control group.

1.2 There will be no significant difference between the mean achievement scores in the delayed post test of the experimental group and the control group.

1.3 There will be no significant difference between the mean achievement scores in the post test and delayed post test of the experimental group.

1.4 There will be no significant difference between the mean achievement scores in the post test and delayed post test of the control group.

1.7 Delimitation of the Study

The present study has been delimited to Central Board of Secondary Education (CBSE) School. The study has also been delimited to only one strategy of cooperative learning i.e. STAD (Student Teams Achievement Division)

1.8 Rationale of the Study

The researcher herself is a student of science and as a student teacher has felt that students face various problems in learning new concepts in Science. Students who are introvert cannot share their doubts with the teachers and this creates hindrance to understand the next concept. Cooperative learning is a new method in which students learn as per their requirement, through group interaction among the students. Cooperative learning helps to share the views and ideas of the students and it also helps to clarify the doubts of the students. Science is the subject in which main focus is given on learning by doing. Learners learn through experiences or experimenting on the new concepts. In the practicals, learners do experiments in groups and they construct their own knowledge. Similar aspect needs to be applied in theory through Cooperative Learning, so that learners acquire content mastery or excellence over the subjects rather than just rote memorization of content. Through cooperative learning, students develop self confidence and their self esteem may be increased. Cooperative learning is beneficial for all students i.e. average learner, slow learner and for the gifted learner.

In the ideal classroom all the three learning patterns i.e. Competitive, Individualistic and Cooperative learning should be appropriately used. All students should learn how to work cooperatively with others, compete for fun and enjoyment and work on their own. No aspect of teaching is more important than the appropriate use of different learning patterns. But, unfortunately, most students perceive school as a predominantly competitive enterprise as for the past half a century, competitive and individualistic learning patterns have dominated our education system. Competitive and individualistic learning situations instill in learners such value systems which form a part of the hidden curriculum beneath the surface of school life i.e. when students are exposed to such learning, they unknowingly, indirectly, involuntarily

acquire such values which are not a part of real school curriculum to be followed for the all round development of the students.

Whenever students are engaged in competitive efforts, they learn the value of commitment to getting more than others. In such type of learning, success depends on beating, defeating and getting more than other people. What is important is winning, not mastery or excellence. Students think that others are a threat to one's success. The values which students inherently learn when they are exposed to individualistic experiences are commitment to one's own self interest. For such type of students success depends on one's own efforts. The pleasure of succeeding is personal and relevant to only oneself.

In contrast to these, the values inherently taught by cooperative efforts are commitment to own and other's success and well being as well as to the common good. Success depends on joint efforts to achieve mutual goals. Facilitating, promoting and encouraging the success of others is a natural way of life. They think of the potential of others as a contributor to one's success.

Cooperative learning has all the essential ingredients that can bring about a qualitative change in education because it is based on the new paradigm of teaching which considers that knowledge is constructed, discovered, transformed and extended by students. Education is a personal transaction among students and between teachers and students as they work together and that teacher's efforts are aimed at developing students' competencies and talents. It assumes teaching to be a complex application of theory and research. Hence, it equally takes into consideration the cognitive as well as the affective domains of learning. It lays emphasis on the mastery of knowledge, comprehension, application, analysis, synthesis and evaluation of materials under cognitive domain as well as takes into account all the five major categories of affective domain which include the manner in which we deal with things emotionally, such as feelings, values, appreciation, enthusiasm, motivation and attitudes.

The importance of cooperative learning goes much beyond maximizing outcomes such as achievement, a positive attitude towards subject areas and the ability to think critically. These are worthwhile outcomes. The elements of cooperative learning viz. teamwork through positive interdependence, communication, effective coordination,

and division of labour by exhibiting individual accountability are keystones which characterize most real life setting. The same is true about our school as school is considered to be a miniature society. It is time for schools to reflect the reality of adult life. Incorporating cooperative learning experiences in the classroom will both reinforce the skills necessary to cope with future courses and provide students with the qualifications that will make them employable.

As the Chinese proverb suggests:

"When I hear I forget. When I see I remember. When I do I learn"

Adults and children learn by "doing" and it makes sense that instructors need to offer opportunities for students to participate in cooperative learning tasks.

So in the present study, the researcher has tried to prepare and implement cooperative learning to make the teaching learning process more effective and tried to check the effectiveness of the cooperative learning in Science teaching at grade VIII.

1.9 Scheme of Chapterization

The dissertation has been divided into six chapters. The scheme of chapterization is as follows.

Chapter 1 - Introduction

The chapter begins with an introductory note and states the problem with the explanation of the key terms. It also states the objectives of the study undertaken, hypotheses framed and rationale of the study as perceived by the researcher.

Chapter 2 - Conceptual Framework

This chapter focuses on the conceptual framework or theoretical background of the study undertaken.

Chapter 3 – Review of Related Literature

This chapter begins with the objectives with which review of related literature is done and then presents the different studies reviewed for the present work.

Chapter 4 – Methodology

The chapter focuses on the methodology adopted for the present study. It describes in detail the research design selected for the present study, the tools used and the procedure adopted for the data collection as well as data analysis.

Chapter 5 – Data Analysis Interpretation and Discussion

In this chapter the data collected through the experiment have been analyzed and presented in tabular as well as graphical forms. Interpretations based on findings have been presented and discussed in the light of the present study.

Chapter 6 – Findings, Suggestions, Implications 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. The chapter ends with reflective notes by the researcher on the research.