CHAPTER- I

INTRODUCTION

1.1.The National policy on education (1986) in para 1.10 clearly states " In the Indian way of thinking, a human being is a positive asset and a precious national resource which needs to be cherished nurtured and developed with tenderness and care, coupled with dynamism. Each individual growth presents a different range of problems and requirements at every stage of education in this complex and dynamic growth process needs to be planned meticulously and executed with great sensitivity" (P-2).

Singh,(1998) stated that a child, being an adult in the making is a precious national resource which needs to be moulded and nurtured in order to make him/her functional component of the scientifically concious emerging society of India. To achieve this the child has to be introduced to the scientific culture right from the elementary stage (P-3).

According to Diwan (1997) the progress of our nation depends to a very great extent on the quality of human resources. Only by buliding up this rich cognitive capital can we forge ahead as a nation to meet the challenges, of the coming thousand years. The thrust shall have to be on launching a crusade for quality, on improving the internal efficiency of the system, making the teaching learning process more purposive joyful and child centered galvanise the promoters of quality and achieve synergistic momentum towards the goal of quality elementary education for all (P.36-38).

Baghel, N. (1998) education is the most important invention of mankind. It is a continous process. It beings at birth and end at his death. It is a process in which every individual is helped to develop his talents, powers, interests and ambitions. Education should aim at developing the innate potentialities and unique indiv idual ity of each child according to his nature, therefore every attempt is made at all levels of education to match with the capability of the learner and for that suitable curriculum are framed (P.4)

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Mathematics is considered as one of the important subjects in primary school curriculum. Mathematics has practical value in life. We can neither know things correctly nor can we have practical utility of calculation, unless we have the knowledge of mathematics. Apart from the personal life, mathematics has an importance in social life as well. It occupies an important place in curriculum and in society. In our day to day life, every person, whether he is a coolie or tailor, a carpenter, a mason, a clerk or an intellectual has to apply mathematics for his livelihood as well as for coming out to exact results and conclusions . It not only helps people to adjust their income and expenditure but it also helps them to know things in the proper way. Every subject gets a place in the curriculum on the basis of its utlity in life and education. This is true of mathematics as well. Mathematics opccupies an important place in the curriculum because it has a utility in life, contributes to different branches of knowledge, contributed a lot to arts and crafts, a lot of utility in the study of sciences.

According to ten year school curriculum (1975) mathematics has helped men to quantify ideas to be precise and to utilise spatial concepts in his day to day living. Its place in the sciences and in practical arts form the informational and computational stand points. In a society, which is rapidly transforming itself into an industrial and technological society, mathematical literacy is essential for every citizen. The objectives of the mathematics as per this curriculum were (a) To cultivate mathematical way of thinking among students i.e. in terms of carrying our experiments with numbers and geometric forms making hypotheses, verifying them with further observation and experiments, generalizing them, trying to find profits and making abstractions etc, (b)The students should be able to quantify their experience of the world around them and to understand the process of applying mathematics to real life problems (P-16-17).

Earlier the stress was given on quantitative development of education but now a days all educationists and education policy maker are more concerned regarding the qual itative develpoment of education. To av hieve this goal, national policy on education (1986) in para 5.6. clearly states " A warm, welcoming and encouraging approach, in which all concerned share a solicitude for the needs of the child, is the best motivation for the child to attend schools and

learn, a child centered and actively based processess of learning should be adopted at the primary stage. Child centered education is concerned with various teaching learning stratagies which makes learning environment interesting and joyful. From the on going search of child centered learning stratagey, cooperative learning stratagey may be one of the effective contributes towards the enhancement of the quality of education.

Sharma (1998) says that cooperative learning may be as old as civilization itself. Sociologists and anthropologists generally agree that language and society must have developed from cooperative endeavous of early man. In cooperative context in which relations are on going (such as work, families and school). The integrative apporach to negotiation results in the most constructive outcomes. Cooperative learning currently is one of the most recommended teaching method. In one state at least, it has been mandated (California state Department of education, 1985). When implemented correctly, cooperative learning results in many benefits to students, including increased academic achievement greater self esteem, improved face relations and greater acceptance of childern who have been mainstreamed into regular classroom.

Slavin, (1983) has said that cooperative learning methods using small groups of students contribute significantly to students achievement at all grade levels in different subject areas and in different geographical locations. Cooperative learning methods also increases accpetance and understanding among educable mentally retarded students, physically handicapped students and their non paried classmates (492-495).

Johnson etal (1984) stressed on four basic elements which must be included for small group learning to be truely included for small group learning to be truely included for small group learning to be truely cooperative. The first is positive interdependence, students within the group must truely, be dependent on one another . Second aspect is face to face interaction. The interactions and verbal interchange among students that are promoted by postitive interdependence have the greatest effect on educationl outcomes,. The third element is individual accountability in which all students within the group are re-

sponsible for learning the materials and the fourth components is the appropriate use of interpersonal skills in the group. These skills must be taught, students must be given time for analysing how well their groups are functioning, cooperative groups work for improving academic learning (P.2-7).

1.2 Present situation

It is well known that now the traditional methods of teaching takes place. Methods and techniques of teaching as customarily used by regular teachers are rooted in verbal teaching at its best using the blackboard. Traditional teaching is characterised by imparting of knowledge through statements, dictation talk and a few at all demonstration.

The existing system has failed to solve the problem of participation and achievement due to several reasons. Some of the major reasons for this anomalous state have been:

#Pupils acts as a passive learners or listeners or receptors of knowledge.
#40 to 50 students are jam packed into a room called classroom.
#The teacher talks for most ofthe time, say 70 to 90% of the time.
#Pupil seldom get opportunity to initiate questions.
rote memorisation is emphasized by the teacher.
only a few people from each grade has the limited opportunity to participate. actively.
Due to pressure of time, the teachers asks pupils reply to the questions in the form of one or two words or a small sentence . It obstructs their appropriate learning, creativity & thought.

1.3 Need and importance of the study

To overcome drawbacks of the present day school system, a new approach is needed for overll development of learner. New approaches to learning are needed for qualitative improvement in education system. Research on various approaches to learning has been conducted in the west, but such experiments in

India are very few. In view of the advantages of some new approaches to learning it is essential that new learning approaches should be investigated in India also.

There are various approaches to learning, such as per tutoring individual learning or independent learning mastery learning, cooperative learning etc. which have been experiment in the west. Cooperative learning is one of the approaches to learning which has produced significantly good results when tried on handicapped and non-handicapped students in the integrated education setting(Johnson and Johnson).

Cooperative learning strategies are characterised ny active participation of the learner and include problem solving, inquiry approach and learning by doing. In this approach, instead of adopting a centralised teaching role, learning in groups, involving face to face interaction between pupils-pupils, pupils-teachers is more educative. It may helps in increasing the learning of the pupils. Slavin, Guskey and Johnson and Johnson have carried out extensive research on cooperative learning.

There is an urgent need for experimenting with different learning approaches in order to see their effectiveness in comparison with traditional method of learning. Cooperative learning is one of the learning approaches. That has been experimentd in west, but used of cooperative learning in Indian school is rare.

In view of the fact that with large number of students and on account of failure of tradition a learning approach in developing needed competencies in students, efforts must be made to experiment with new learning approaches. Cooperative learning provides for greater freedom in learning and students are encouraged to learn through mutual cooperation.

Planning teaching learning in small groups provides a potential learning environment. It has the advantages such as the following :

People who generally remain quiet amd inactive in the whole class teaching talk and participate in small groups.

#Theycan be initiated into their own learning style and thinking aloud.

#They can develop confidence in themseleve as learners.

#They can develop awareness to compare with each other and improve.

#The pupil get more opportunities to reinforce their previous concepts. The Pupils learn to organise their own experience and thoughts.

On the basis of above advantages of cooperative learning., its need & importance in the present context is obvious.

1.4 Statement of the Problem

The present study was undertaken keeping in veiw the effect of cooperative learning in mathematics with respect to conventional method of teaching and stated as follows:

"Effectiveness of cooperative learning in teaching mathematics tothe student of Class VII."

1.5 Objectives of the Study

The article 45 of the Indian constitution categorically states that all childern in the range of 6-14 years should be given free and compulsory education, however this goal has not been achieved despite completion of 50 years of Independence. Their may be various reason for not achieving the goal of "education for all".

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Among other reasons, the traditional mehtods of teaching, where the whole teaching process is dominated by the teacher, can be questioned. The mani objectives of the study were:

#To study theeffectiveness of cooperative learning in mathematics as compared with traditional methods of teaching.

#To investigate the effectiveness of cooperative learning in mathematics on boys and girls of class VII.

1.6.Hypotheses of the study

Due to all these failures of traditional methods of teaching there has to be an effort to carry out research on various learning approaches that has bee practised so far.

The hypotheses of the study were as follows :

1)H0- Cooperative learning and traditional teaching methods have the same effect on the learning of students.

H1- Cooperative learning and Traditional teaching methods have different on the learning of mathematics.

2)H0- Cooperative learning has the same effect on boys and girst of class VII.

H1- Cooperative learning have different effect on boys and girls of class VII.

1.7 Definitions of Key Terms

#Cooperative learning:

Guskey(1990) cooperative learning is an instructional format in which students work in small hetrogeneous groups of two to six students on learning tasks assigning by theteacher. Within each groups students

engage in a variety of learning activities that require collaboration and mutual support.

#Effectiveness:

Effectiveness in this study may be defined as resulting state or con dition as a consequence of using cooperative learning approach.

 # Traditional teaching methods:

Methods and techniques of teaching as customarily used by regular teachers.