

CHAPTER – III

REVIEW OF RELATED LITERATURE

3.1 Introduction

The review of related literature gives the researcher an understanding of the research methodology which refers to the ways the study is to be conducted. The advantage of the review of the related literature is also to provide insight into the statistical methods through which validity of results is to be established. The final and important specific reason for reviewing the related literature is to know about the recommendation by previous researcher listed in the studies for further research, which also helps avoid unintentional duplication of well established findings.

The researcher reviewed studies related to cooperative learning across different grades, levels and subjects. In order to present the studies reviewed for the present research in a comprehensive and systematic way, the studies have been broadly categorised under following headings:

- Studies related to Academic and Social Outcome
- Studies related to Social and Psychological Outcome
- Studies related to Academic, Social and Psychological Outcome

3.2 Studies related to Academic and Social Outcome

Patel Kalpesh (2012) studied the Effectiveness of Group Work Activity in Teaching English at Secondary level. The main objectives of the study were:

- To compose Group Work Activity from the selected unit of Standard 9th English textbook.
- To compare between the mean scores of Post Test of the students of Control Group and Experimental Group.
- To know an opinion of the students of Experimental Group about Group Work Activity.

The researcher applied convenient sampling procedure. The sample consisted of 9th standard students of Shree Sajod Sarvajanic High school, Ankleshvar. The tools used for the study were Achievement Test and Feedback Form. Data were analysed by using t-test and the major findings of the study were:

- Mean scores of Experimental Group was more than the scores of Control Group. It demonstrated the Experimental Group learnt better through Group Work Activity.
- The Feedback from students also suggested that the students found class more interacting, challenging, joyful and easy.

Unnikrishnan Amita (2011) carried out a study on Enhancing Communication Skills in English through Cooperative Learning among the Students of Standard VI. The main objective of the study was to study the process of Enhancement of the Listening, Speaking, Reading and Writing skills in English through Cooperative Learning. The major findings of the study were:

- The students were found to have improved drastically in writing skill as compared to other skills.
- While working in group, the sample students were found to be more enthusiastic, willing to work and hence performed better. They, in the process, developed good bonding with their group members as well as others and positive attitudes towards all.

Cline Lisa (2007) studied the impact of cooperative learning structures on fifth grade's mathematical achievement. The study investigated the impacts of Kagan cooperative learning structure on the mathematical achievement of fifth grade students' due to alarming decreases in mathematical scores on state tests over the past several years. The finding from this study indicated a significant difference in the mathematical achievement in the fifth grade students who participated in the Kagan cooperative learning structure when compared to the mathematical achievement of the students' who did not participate in Kagan structure.

- The expanded use of Kagan's cooperative learning structures could bring about increased Math achievement not only for students at Taylor Ranch

School where experiment was conducted but if expanded in use, improved math scores all over. Increased use of Kagan cooperative learning structures may bring about outcomes including greater employability and social skills in order to prepare students for real world situation.

Madrid L.D., Canas M. and Medina M.O. (2007) studied the effect of team competition versus team cooperation in class wide peer tutoring: Sixteen Hispanic Spanish /English bilingual children belonging to grade three and identified as academic at risk on the basis of a history of poor academic performance in spelling and low scores on the Metropolitan Achievement tests were selected for the study. They were assigned to three instructional inventions:

- a) Competitive peer tutoring
- b) Cooperative team peer tutoring
- c) Standard teacher led instruction.

The objective of the study was to compare the effect of a competitive team peer tutoring procedure with the effect of a cooperative team peer tutoring procedure on Hispanic bilingual children. The standard teacher led procedure served as the control condition.

The finding showed differences in correct spelling responses that resulted from two team peer tutoring procedure and the teacher led instruction procedure. The mean percentage gain scores for competitive team peer tutoring increased from 13 per cent during pre test to 80.2 per cent during post tests. The mean percentage gain scores for cooperative team peer tutoring increased from 12 per cent to 92.8 per cent during post tests. During standard teacher led instruction session, the mean percentage gain scores increased from 14 percent during pre tests to 36.2 per cent during post tests. Data for the mean correct post test scores for each instructional invention across 15 week showed that the standard teacher led condition resulted in the lowest level of mean correct responses. The weekly post tests means for correct responses for the competitive peer tutoring condition were 80 per cent, 75 per cent, 80 per cent, 82 per cent, and 84 per cent, weekly post test scores for correct responding for the

cooperative peer tutoring condition was the highest of all the three instructional conditions; 90 per cent, 89 per cent, 95 per cent, 94 per cent and 96 per cent.

Liao Hui Chuan (2005) studied the effects of cooperative learning on motivation, learning strategy utilization and grammar achievement of English language learners in Taiwan. Three specific research questions guided the study. The first looked at effects of cooperative learning on motivation, the second one on out of class strategy use and the third on grammar achievement. Additional exploratory questions examined these results across sub group within each class as well as the relationships between the dependent variables.

Cooperative learning was found to have large positive effects on motivation and strategy use, and medium to large to large positive effects on grammar achievement.

Overall, the finding indicated a consistent pattern in favour of cooperative learning over whole class instruction in teaching the Taiwanese learners English grammar. The results of the exploratory questions indicated that cooperative learning facilitated motivation and strategy use of learners across all sub-groups, but more so with those performing higher and lower levels. Grammar achievement of learner at higher and lower levels was affected [positively. Additional analyse also indicated cooperative learning positively affected learning at higher cognitive level.

Fenwick Sharyyn Elaine (2003) studied the effects of cooperative concurrence seeking on students' academic achievement and attitude towards factor of classroom social support.

The study investigated the effectiveness of structured, creative controversy as an instructional strategy to enhance learning. It compared the relative impact on two cooperative learning procedures on students' achievement and students' attitudes towards the social support factor of controversy, cooperation and peer academic support, the value of intellectual argument behaviour, academic self-esteem and motivation. The independent variable consists of two conditions, firstly cooperative creative controversy, where students' extensively examined both sides of an issue. Students' team then move towards consensus (Experiment). Secondly cooperative concurrence seeking, where students had to choose a position concerning the focus

issue, then were encouraged to inhibit discussion of opposing views avoid disagreement, and group harmony (comparison). The fundamental questions which drove this study were:-

- Does the cooperative creative controversy teaching technique produce measurable learning gains when compared with more traditional cooperative concurrence seeking approach?
- How do these two procedures affect students' attitudes towards these teaching styles, their peers and themselves?
- Are gender or grade level differences apparent in students' responses to participating in this technique?

The results for question one suggested that there was no significant difference in subject mastery rates between conditions at the conclusion of the study as measured by the treatment post-test. Although the delayed post-test administered four weeks after the study, did not indicate a significant difference between conditions, the result suggested a significant difference in the how much information students' remembered. Students' in the creative controversy group remembered more of what they learned than those in the occurrence seeking group.

The result for question two indicated that the creative controversy group had a more positive attitude towards controversy than did the concurrence seeking group, but there was no significant difference in attitudes towards other factors of social support.

The results for question three suggested no significant difference in academic achievement among grade level or between boys and girls. However, there was significant difference in attitudes towards some factors of social support.

A study by **Chang, Chun-Yang and Mao, Song-Ling (1999)** investigated the effect of Cooperative learning instruction versus traditional teaching methods on students' Earth Science cognitive development in secondary schools. A total of 770 ninth-grade students enrolled in 2 section of a required Earth Science course participated in this non-equivalent control group quasi-experiment. The control group (n=10) received a traditional approach, while the experimental group (n=10) used cooperative strategies. Result of the study revealed that;

- No significant differences were found between the experimental group and control groups when overall achievement, knowledge level and comprehension level test items were considered; and
- Students who worked cooperatively performed significantly better than students who worked alone on the application level items

The finding suggested that cooperative learning strategies favoured students' Earth Science performance at higher but not lower levels of cognitive domains in the secondary schools.

Apart from achievement, studies have also started focusing on assessment procedures during cooperative learning as it has to be handled appropriately and differently based on the objectives of the education at different levels.

Muthiah N. (1994) conducted a study of the Effectiveness of Cooperative Learning Strategy in enhancing achievement in Mathematics and social interaction of High School students in Coimbatore. The objectives of the study were;

- To investigate the effectiveness of Cooperative Learning approach in developing positive attitudes of students towards the teaching-learning process.
- To study the effectiveness of Cooperative Learning approach in enhancing the achievement of students in learning Mathematics.
- To analyse the effectiveness of Cooperative Learning in developing positive attitudes of teachers towards the teaching-learning process in the classroom.
- To explore the effectiveness of variables such as location of schools, gender and standard of students in terms of achievement and attitudes towards teaching-learning process.
- To study the effect of variables such as location of school and gender on the attitude of teacher towards the teaching-learning process through cooperative learning.
- To explore the relationship between the achievement and attitudes of the students as a result of cooperative learning.

- To analyse the effect of the variables on the attitudes of students and teachers in terms of different components of cooperative learning.
- To study the perceptions of students teachers and heads of institutes about the implementation of cooperative learning.
- To investigate the social interaction of the students on the basis of their social status.

The investigator applied stratified random sampling procedure. Sample consisted of 200 boys, 178 girls of class IX and X and 40 teachers who were directly involved with the cooperative learning experiment. The tools used for collecting the data were; Pupils perception teaching-learning inventory (PPTI) Students achievement test, Teacher attitude towards teaching-learning scale (TATS), Sociometrics test was also administered to students of 10 randomly selected schools, Focused interview with teacher and on the spot observation of cooperative learning sessions was also arranged on a random basis. The data were analysed with the help of t-test and correlation.

Finding of the study were;

- The application of the cooperative learning in the classroom contributes to positive attitude among students towards teaching learning process in the classroom.
- Awareness of the cooperative learning strategy indeed influence better attitude among students.
- Location of the schools did not make an impact on the attitude of students. All the students had positive attitude towards cooperative learning irrespective of urban or rural localities.
- Girls had more positive attitude than boys towards cooperative learning.
- The X standard students have more positive attitude than IX standard students.
- Application of the cooperative learning strategy certainly improves the positive attitudes of the teachers towards teaching-learning process in the classroom.
- The withdrawal of cooperative learning approach did not show a decline in the attitude of teachers.

- Female teacher have more positive attitudes towards cooperative learning than male teachers.

3.3 Studies related to Social and Psychological Outcome

Huang Grace Hui- Chen (2006) conducted a study on fostering active learning in a Teacher Training programme through Informal Forum. This instructional strategy is grounded in constructivism. The Informal Forum learning activity consists of three phases- Preparing students for the Forum, Staging the classroom forum and reflecting on the Forum activity. The researcher used JIGSAW cooperative learning activity in the study. The benefits of this instructional strategy which come to the limelight were:-

- The communication style is reciprocal among participants than teacher directed which increases the quality of student responses significantly.
- The intense discussion improves student's abilities to think, plan and take action.
- It allows students to develop ownership, initiative and autonomy of their learning.
- It leads students to read beyond the text book itself to be prepared for unpredictable questions.
- It allows self expression and good opportunity for public speaking.
- It instils in learners deeper level of understanding as they reach application level of understanding and which in turn enhances their retention power.

Walker Lorren (2006) combined principles of cooperative learning where older students at risk of dropping out are recruited to teach violence prevention to younger learners. The goal of the programme was to assist the secondary students' learn problem solving and conflict resolution skills while providing a positive model through cross age peer tutoring. The violence prevention through cooperative learning programme conducted by the researcher was based on annotated bibliography "Literature for children and Young Adults: Examining Issues of violence and conflict resolution". Through cooperative learning programme, secondary level students were recruited by the researcher to read to elementary classrooms and to facilitate

discussion with the younger students on the themes of the books. Although an in depth evaluation of the outcome of the programme was not conducted, qualitative data shows positive results. The consensus of the group was that their self confidence increased and they gain a feeling of success and self worth.

Junge Sharon K, Manglallan sue and Raskauskas Juliana (2003) conducted a study on building life skill through after school participation in experiential and cooperative learning. The primary purpose of the study was to examine the development of life skill within a sample of Kindergarten through sixth grade students enrolled in 4-H after school programmes which utilize experiential and cooperative learning activities and provide interaction with competent adults. The secondary purpose of the study was to examine whether the 4-H after school's ability to develop life skill within children differs by age/ grade, ethnicity or gender. To examine a primary purpose a paired sample t-test was used to compare the sample means for the retrospective pre test and post test. A significant difference was found between the means for the entire sample. This indicated that students do report an improvement in their life skill over the course of their participation in the programme.

The second purpose was explored using separate repeated measure ANOVA analysis for age, grade, gender and ethnicity. The result indicated that children in lower grades second lower on all of the individual life skills. Gender effects were revealed with females scoring higher on over all life skill totals. Ethnic differences were also found on some of the life skills.

Mchale Mark (2002) conducted a study on cooperative learning in an elementary physical education programme. The focus of the study was two fifth and sixth grade classes and their physical education teacher. The teacher used "Learning Teams" as a cooperative learning structure. Students in small group were assigned to various roles such as recorder, trainer, encourager, checker and coach for an eight lesson volley ball unit. Within each group, the assigned roles changed regularly. Groups were encouraged to take responsibilities for reciprocal instruction by modelling for and teaching others. The classroom teachers used similar cooperative learning groups, so that students became familiar with the format. Students were given written task sheets

explaining the skills that once completed were checked by other group members and or the teacher.

The main data sources for the study were interviews with physical educator and students, and non participant observation of all lessons. The findings were grounded in a specific context, that is, themes emerging from the data were based on day to day events that occurred at schools. Theme emerged from four major categories; goals of the lessons, cooperative learning roles, benefits of cooperative learning and the implementation of cooperative learning.

Results of the study revealed that lesson goals were similar for the teacher and the students, as both were looking to develop motor skills and cooperative skills consisted with other studied cited by the author. The cooperative learning roles were an integral part of the teacher's use of cooperative learning. The students realised that the benefits of cooperative learning included getting the lesser skilled students more involved and working as a team to achieve their goal. Lesser skilled students stated that they felt more important because they had a specific job to perform and because they were contributing to a team effort. The implementation of cooperative learning allowed the teacher to shift some of the responsibility for learning from the teacher to the students. Students enjoyed having the responsibility of leading their peers in practicing skills and employing strategies in game situations. This type of learning has been studied extensively and is a valued concept in educational reform. It is important for educators, to realise that students are central to educational process and can provide valuable insights into the curriculum. This study proved that cooperative learning can be powerful instructional format to help students attain both motor skills and social goals in physical education. Cooperative learning has not only academic achievement to its credit but it also has social benefits as it not only focuses on cognitive outcomes, it also gives due emphasis and importance to affective outcome as well.

Quinn Mary Magee (2002) examined the effectiveness of using a structured cooperative learning approach to increase appropriate behaviour in young boys who were identified as being at risk for the development of antisocial behaviour pattern students received a sixth week cooperative intervention using positive peer role

models to teach interpersonal problem solving skill through the combined use of cognitive and behavioural techniques. The study was conducted at rural school. It consisted of 26 structures cooperative learning lessons designed to teach all students interpersonal problem solving strategies, the lesson focused on the use of active communication skills, anger management and the cognitive and behavioural skills necessary to effectively solved interpersonal problems. The finding of the study supported the hypothesis that the intervention significantly increased the rate of the academic engaged time which is an important pre requisite to the attainment of the social skills and other academic skills. Teaching children to work together in structured cooperative learning groups can increased the academic engagement of antisocial boys to level that are within normal limits due to which they are less likely to be off task, disruptive and antisocial.

Neyshabour R. R (2001) conducted a study on effect of individual and cooperative leaning in computer education on performance at knowledge, skill and application categories in relation to cognitive styles. One of the objectives of the study was:

“To study the effects of cooperative and individual learning on students’ performance in computer education”

To study the effect of said mode of learning and cognitive style on performance in Computer Education at knowledge, application and skill categories, of educational objectives. The research was experimental in nature. The duration of treatment was two weeks. The researcher organised the workshop. Researcher also developed lesson plans. The sample comprised 124 students (both boys and girls) of class X of the age ranging between 15-17 years from ten high schools of urban setting of Ghaemshar, Iran. The sample was selected with the help of random sampling method. Group Embedded Figure Test (GEFT) by Herman A. Witkin et.al Performance Test (split half reliability coefficient = 0.72) Check List on Computer Skill (split half reliability coefficient = 0.92) developed by researcher were used for data collection. The data were analysed using two way ANOVA techniques

The findings of study were:

- There was no difference between the knowledge mean scores yielded through cooperative and individual learning modes. Both the modes of learning were found equally effective.
- There existed difference between the application mean scores of the field dependent and field independent groups. Field independent students' scores higher than the field dependent students on application category of performance.
- There was no difference between the skill mean scores yielded through individual and cooperative learning mode beyond contribution of change. Both the mode was found equally effective.
- There was no difference between the total performance mean scores yielded through individual and cooperative learning modes were found equally effective for total performance.

3.4 Studies related to Academic, Social and Psychological Outcome

Sadananthan M., Deepa R. (2012) conducted a study on attitudes of secondary school teachers towards cooperative learning. Objectives of the study were:

- To find out the attitude of secondary school teachers towards cooperative learning.
- To compare the attitude of secondary school teachers towards cooperative learning with respect to
 - o Age
 - o Sex
 - o Locality
 - o Teaching experiences
 - o Educational qualification
 - o Subject handed
 - o Type of management of school

Researcher used survey method and sample was selected by stratified random sampling technique. Sample of the study was comprised of 180 secondary school

teachers from 20 schools in Kanya Kumari District of Tamil Nadu. Researcher had used Cooperative Learning Attitude Scale and Personal Information Schedule for data collection.

The study revealed that 45.6 % of teachers had favourable attitudes towards cooperative learning. They preferred cooperative teaching learning approach in their classroom. Though this trend provides a positive attitude on their readiness to implement cooperative learning approach, teachers need training in cooperative teaching learning approach. Age, sex, locality, subject of teaching, type of school and teaching experiences had strong influence on the attitude towards cooperative learning. Educational qualification of teachers had no influence on their attitude towards cooperative learning.

Pushpanjali B.S, Satyaprakash C.V (2010) conducted a study on effects of cooperative learning on achievement motivation and anxiety. The research was experimental in nature. The sample was selected by the cluster random sampling method which comprised of students of class VI, a mean age of 11 years from three high schools of Bangalore of Karnataka. Achievement Values and Anxiety Inventory (AVAI) and Sinha's Anxiety Scale developed by Sinha in 1966 was used as a tool for the data collection data were analysed by Mean, Standard Deviation and by t- test. Major findings of the study were:

- Cooperative learning strategy was superior to conventional method in significantly promoting achievement motivation
- Cooperative learning strategy was effective in significantly reducing the anxiety.

Nagar Nandita (2009) conducted study on Evolving strategies for enhancing Cooperative learning in teacher education. The main objectives of the study were

- To prepare and implement cooperative learning lessons based on different cooperative learning strategies
- To find out the effectiveness of cooperative learning strategies in reference to academic achievement, self-esteem, interpersonal relations, individual and group cooperative work, trust behaviour, collaborative skills and classroom environment

- To enhance cooperative learning in teacher trainees.

The investigator applied random sampling procedure. Sample consisted of all 48 teacher trainees chosen for the study from the Christian Training College, Lucknow. The sample consisted of 28 males and 20 females out of which 10 males and 14 females were Christian students and the remaining 18 males and 6 females were non-Christian students. The tools used for the study were;

1. Students profile form
2. Classroom environment checklist
3. Rosenberg's self-esteem scale
4. Interpersonal relations assessment technique
5. Examination of trust behaviour
6. Individual and group cooperative work checklist
7. Social skill observation form
8. Group processing form
9. Achievement test for different strategies
10. Feedback form

Data analysis was done by ANOVA, ANCOVA and by percentage method. The major findings of the study were;

- The achievement level of the teacher trainees was found to be remarkably high when they were tested after strategy I, strategy II and strategy III.
- The retention rate of the teacher trainees was found to be improved when they were re tested for their performance.
- The individual and group cooperative work of the teacher trainees showed remarkable improvements.
- It was observed that oral communication skills of teacher trainees showed impressive improvement.
- Teacher trainees exhibited more responsibilities for learning.
- The student teacher interaction and familiarity increased.
- The feeling of cooperative and equality amongst teacher trainees was enhanced to a great strength.

- The competition between the teacher trainees decreased rapidly when cooperative learning strategies was implemented.
- Teacher trainees should positive attitude towards subject matter.
- The teacher trainees exhibited more trusting and trustworthy behaviour.
- The self-esteem of the teacher trainees was enhanced after the implementation of the intervention programme.
- It was observed that anxiety of the students in class and towards test got significantly reduced.
- A recognisable improvement in the self-confidence of teacher trainees was observed.

Cheng Yi Chia (2007) studied the effectiveness of reciprocal peer tutoring on students' achievement, motivation and attitudes: The purpose of the study was to investigate the effects of reciprocal peer tutoring on students' achievement, motivation and attitudes of 105 undergraduate students at a Western University in United State.

The result suggested that the reciprocal peer tutoring and non reciprocal peer tutoring groups did not differ on student achievement and student motivation. Although no significant difference was found for the treatment effect on students achievement, the reciprocal peer tutoring counterparts on total assignment scores as well as all five assignments. Finding concerning students attitude revealed what students like most about reciprocal peer groups and the comfort that reciprocal peer tutoring provided and knowledge sharing. With regard to self and peer evaluation, students evaluated themselves and their peers highly and over three- fourth of them had positive attitudes towards reciprocal peer tutoring. Additionally, the interviews provided suggestions to improve reciprocal peer tutoring, that included designing cooperative projects, allowing students to pick own groups, and facilitating group cooperation.

3.5 Implications of the Review of Related Literature

While reviewing the literature it was found that numbers of studies were conducted in the different areas of education at different levels by cooperative learning approach all over the world but in India the researcher could come across only few studies. Although there have been studies in teaching English language through group work,

the researcher came across few studies incorporating group work in teaching Science. Although now gradually Cooperative Learning is gaining grounds and people have started experimenting with it. This was one of the reasons the researcher felt the need of understanding research in this particular field as lot can be done in this area. Cooperative learning has not only academic achievement to its credit but it also has social benefits as it not only focuses on cognitive outcomes, it also given due emphasis and importance to affective outcome as well. Cooperative learning is a powerful instructional format that helps students to attain academic skill, motor skills and social goals of education. In present study also researcher tries to implement cooperative learning in Indian classroom to improve the efficiency of teaching. In this study researcher has tried to check the effectiveness of cooperative learning programme in terms of academic achievement level of students.