CHAPTER – VI
FINDINGS, CONCLUSIONS, IMPLICATIONS AND SUGGESTIONS FOR FURTHER RESEARCH

6.0 SIGNIFICANCE OF THE STUDY

In every area of research, the findings have certain implications of practical value and in the field of education they have special meaning for all stakeholders from pupils to parents, teachers to teacher educators, guidance workers to policy framers and administrators to innovators and inventors. They enable the people to share and utilize the experience and knowledge of research as guidelines for educational planning and implementation to cause quality improvement in the process of schooling. Thus, based on the analysis of data and interpretation of results, a set of findings and conclusions can be drawn and on the basis of their discussion, a wide range of implications and suggestions need also to be focused on for further research in the field related to a study.

Some of the significant possibilities and provisions in terms of findings of this piece of research may be accepted as follows. They could be divided under different heads and subheads like principal features and merits of cooperative learning methods and traditional learning methods; variables of the study; objectives and hypotheses under study; and variable-wise outcomes.

6.1.1 Pedagogy tried

In order to find out the relative effectiveness of co-operative learning methods and also to compare with the traditional method of teaching, somewhat selected pedagogical methodologies were used by researcher. Initially objectives of the study identified and by keeping them in view, researcher selected the appropriate content in mathematics and prepared herself for the experiment. Three different methods of teaching-learning were used along with appropriate teaching-learning materials. The study contributes to make comparison between two cooperative learning methods which are Student-Teams Achievement Divisions (STAD) and Jigsaw. Simultaneously, it compares the effectiveness of cooperative learning methods and
traditional method of teaching. Effectiveness for the present study is measured in terms of scholastic achievement and enhancement of self-concept of students. At the end of experiment data collected was analyzed and interpreted in relation to the objectives fixed previously. Each and every phase of the experiment conducted was evaluated to identify the scope for further research.

6.1.1.1 Salient Features of the Cooperative Learning Methodology and It’s Pedagogical Bases

1. An activity involving a small group of learners, who work together as a team to solve a problem, complete a task or to accomplish a common goal.
2. Small group cooperative learning provides alternative to both traditional whole-class expository instruction and individual instruction systems.
3. It is a successful teaching 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.
4. Fast learners can assist the slower pupils to achieve and do well. They can learn as well from the slow learner, in return, too.
5. Learners may motivate and challenge each other in a committee setting and yet efforts are harmonized to attain togetherness in an educational endeavour.
6. Group cohesion is necessary so that the goals of cooperative learning are consistently attained. All need to participate actively and achieve maximally.
7. Cooperative learning instructional approaches provide opportunities for a learner to interact with other learners in the class, and thus the approaches maximize the learner’s intrinsic interest in learning.
8. The cooperative learning approaches cater to the needs of students having different mental abilities in organizing students to work together in small group.
9. Cooperative learning is an arrangement in which students work in mixed ability groups and are rewarded on the basis of the success of the group.
10. Each member of a team is responsible not only for learning what is taught but also for helping team mates learn, thus, creating an atmosphere of achievement.
11. Cooperative learning is a relationship in a group of students that requires the following five elements: positive interdependence; individual accountability; interpersonal skills; face-to-face promotive interaction; and group processing.

12. A criteria-referenced assessment and evaluation system is used, the focus is usually on the learning and academic progress of the individual student but may also include the group as whole, the class and the school.

6.1.1.2 Merits of the Cooperative Learning Methods Used

1. Cooperative learning is easy to implement and is not expensive.
2. Cooperative learning improves children’s behaviour, their attendance and increases their liking of school.
3. It encourages group processes, fosters social and academic interaction among students and rewards successful group participation in the learning of school subjects.
4. It produces higher achievement, more positive relationships among students and healthier psychological adjustment than do competitive or individualistic experiences.
5. It improves relationships among students from different ethnic backgrounds.
6. Cooperative learning also increases students’ motivation by providing peer support.
7. It encourages learning the material in a greater depth than they might otherwise have done, and makes them able to think of creative ways to convince the teacher that they have mastered the required material.
8. In cooperative learning teams, low-achieving students can make contributions to a group and experience success, and all students can increase their understanding of ideas by explaining them to others.
9. Cooperative learning successfully fosters and masters interpersonal skills among students that are also needed for the group to accomplish its tasks.
10. It helps to increase students’ retention and enhance students’ satisfaction with their learning experience.
11. It also helps students’ to develop skills in oral communication and students' social skills.
12. It promotes tolerance for individual differences.

6.1.1.3 Traditional Pedagogy Used- Its Salient Features and Merits

Traditional method of teaching encourages one-way communication; therefore, the teacher must make a conscious effort to become aware of student problems and student understanding of content without verbal feedback. It places students in a passive rather than an active role, which hinders learning. This method requires the instructor to have or to learn effective writing and speaking skills and also requires a considerable amount of unguided student time outside of the classroom to enable understanding and long-term retention of content. Along with all these features it also reflects some kind of merits that this pedagogical setting gives the instructor the chance to expose students to unpublished or not readily available material and allows the instructor to precisely determine the aims, content, organization, pace and direction of a presentation. Traditional pedagogy can be used to arouse interest in a subject and can complement and clarify text material. It complements certain individual learning preferences. Some students depend upon the structure provided by highly teacher-centered methods. In crowded classroom circumstances it equally facilitates large-class communication. Traditional teaching is concerned with the teacher being the controller of the learning environment. Power and responsibility are held by the teachers and they play the role of instructor (in the form of lectures) and decision maker (in regard to curriculum content and specific outcomes). They regard students as having 'knowledge holes' that need to be filled with information. In short, the traditional teacher views that it is the teacher that causes learning to occur (Novak, 1998).

6.1.1.4 Comparative/Interactive Mingling of Cooperative Learning and Traditional Techniques

Our on-going traditional classroom teaching is totally teacher dominated and content centered. Here, the teachers are regarded as repositories of subject knowledge and their role is simply to pour into the open, empty and willing minds of students their vast reservoir of knowledge. They do not trust that their students would learn on their own. They think that they must tell them what to learn and provide all the
structure for the learning to take place. This learning structure is highly individualistic. It encourages individual and competitive learning in place of group and co-operative learning. Here, the students are tempted to learn more and more in order to gain good grade, divisions, certificates and appreciations by excelling their own peers. Cooperative learning says no to such practices. It is a learner-centered strategy in which the students get opportunities to learn by themselves in a small group in a co-operative or a non-cooperative environment by forming a number of teams, each consisting of a small number of students of different levels of ability for the understanding of a subject. They share all information among themselves and help one another for having the required knowledge, understanding and application of one or the other aspects of the content material, or course units included in their syllabus. It seems quite contrary to the practice of traditional teaching-learning in our current educational system.

This approach emphasizes a variety of different types of methods that shifts the role of the instructors from givers of information to facilitating student learning. Traditionally instructors focused on what they did, and not on what the students are learning. This emphasis on what instructors do often leads to students who are passive learners and who do not take responsibility for their own learning. Educators call this traditional method or “instructor-centered teaching.” In contrast, cooperative learning method, “learner-centered teaching” occurs when instructors focus on student learning. Learner-centered teaching places the emphasis on the person who is doing the learning (Weimer, 2002).

The Indian classrooms are highly heterogeneous in nature. In the classroom, the students have different abilities. Some can master the subject quickly and some take more time to attain mastery. But the teacher tailors his instruction to the whole group without taking note of the heterogeneity of the group. Cooperative learning may best be defined as small heterogeneously mixed working groups of learners learning collaborative/social skills while working towards a common academic goal or task. The teacher's role in cooperative learning changes from being in front of the learners doing most of the talking (and most of the work) to becoming a facilitator who guides the learner learning both in academic as well as the social realms. In some
of the cooperative learning strategies like STAD and Jigsaw II, content is to be shared with students with the use of traditional techniques and later on, teaching-learning process put forward in small group settings in an instructional session to make the complex things easier.

6.1.1.5 Superiority Parameters of CL and Traditional Approach

When the focus becomes student learning, school attain higher rates of student retention and have better prepared civilized individuals with social skills than those students who are more traditionally trained. The functions of the content in cooperative learning include building a strong knowledge foundation and to develop learning skills and learner self-awareness. The roles of the instructor are facilitative rather than didactic. The responsibility for learning shifts from the instructor to the students in cooperative learning setting where instructor creates learning environments that motivate students to accept responsibility for learning. The processes and purposes of assessment shift from only assigning grades to include constructive feedback and to assist with improvement. Cooperative learning uses assessment as a part of the learning process. The balance of power shifts so that the instructor shares some decisions about the course with the students such that the instructor and the students collaborate on course policies and procedures. Students promote each other’s success in teams rather than individual success. Equal opportunity for success, a feature of cooperative learning, ensures that high, average and low achievers are equally challenged to do their best and that the contributions of all team members are equally valued but it is not possible in traditional approach

6.1.2 Variables Tested

Different variables were tested in recent research studies such as achievement, attitude, self-esteem, cognitive skills, behaviour modifications, self-concept etc. in different subjects like Languages and Humanities, Social Sciences, Sciences and technology, Physical and environmental sciences, Mathematics etc. In the present comparative study of the cooperative learning vis-à-vis traditional approach, the methods of instruction or teaching in the form of cooperative learning strategies involving Student-Teams Achievement Divisions (STAD) and Jigsaw methods were
used as independent variables to see their effect on the achievement of students in Mathematics, and their self-concepts.

6.1.3 Objectives/Hypotheses Tested

The results drawn during this study support that:

6.1.3.1 At the end of experimental treatment, the group of students taught mathematics through Student-Teams Achievement Divisions and Jigsaw methods under cooperative learning scored significantly higher mean on the academic achievement test than the group of students taught through traditional methods. It suggested that Students-Teams Achievement Divisions (STAD) and Jigsaw methods under cooperative learning contribute towards raising the academic achievement of students in Mathematics in comparison to traditional methods.

6.1.3.2 The group of students taught Mathematics through STAD and Jigsaw methods under the cooperative learning shows a significantly higher mean gain score on the academic achievement test than the group of students taught through traditional method at the end of experimental treatment.

6.1.3.3 At the end of experimental treatment, there existed a significant difference between STAD and Jigsaw methods on the Academic Achievement of students. Jigsaw showed a significant higher on achievement than the Students-Teams Achievement Divisions (STAD) method under cooperative learning.

6.1.3.4 At the end of experimental treatment the group of students taught Mathematics through STAD and Jigsaw under cooperative learning method attained a significantly higher mean score on the test of self-concept than the group of students taught through traditional methods. It suggests that STAD and Jigsaw methods under cooperative learning contribute towards raising the self-concept of students in Mathematics.

6.1.3.5 The mean gain scores of both the experimental groups, the group of students taught mathematics through STAD and Jigsaw under cooperative learning
method were also found to have attained significantly higher on the test of self-concept than the group of students taught through traditional method called as control group.

6.1.3.6 At the post-experimental stage, there existed no significant difference between Students-Teams Achievement Divisions (STAD) and Jigsaw methods under cooperative learning in developing self-concept of students. It suggested that STAD and Jigsaw are equally effective in developing self-concept among students, even though Jigsaw appeared to be much too higher in mean scores than the mean score of STAD which may be due to an error of minor consequence.

6.2 CONCLUSION

The popular cooperative learning approaches cater to the needs of students having different mental abilities in organizing students to work together in small group which has been “an ancient practice in education throughout the world” (Slavin, 1995). Cooperative learning instructional approaches provide opportunities for a learner to interact with other learners in the class, and thus the approaches maximize the learner’s intrinsic interest in learning. Children improved behaviour and attendance and increased liking of school are some of the benefits of co-operative learning (Slavin, 1987). Although much of the research on cooperative learning has been done with older students, cooperative learning strategies are effective with younger children in pre-school centres and primary classrooms as well, in addition, cooperative learning promotes students’ motivation, encourages group processes, fosters social and academic interaction among students and rewards successful group participation in the learning of school subjects.

Finally, if we are to accept the proposition that Cooperative Learning has a far broader intention than simply a set of strategies to use in a classroom, there is a need to examine the public purpose of education and to congregate research and argument as to how this needs to be articulated in future.

In this context, the observations made by the UNESCO International Commission on Education for the twentyfirst century (1996) are quite relevant. It
discussed the need to advance towards a ‘Learning Society’. The Truth is that every aspect of life, at both the individual and social level, offer opportunities for both learning and doing….Better still, school should impart both the desire for, and pleasure in, learning, the ability to learn how to learn, and intellectual curiosity. One might even imagine a society in which each individual would be in turn both teacher and learner” (UNESCO, 1996).

“Not only must it adapt to changes in the nature of work but it must also constitute a continuous process of forming whole human beings – their knowledge and aptitudes, as well as their critical faculty and ability to act. It should enable people to develop awareness to them and encourage them to play their social role at work and in the community” (ibid). Education is a deeper, more profound, undertaking than the hope, in the political entities that are schools serving a purpose in a democratic society.

In order to address the present educational practices, it is important to examine latest UNESCO document (1996) titled ‘Learning- The Treasure Within’ which spells out education along Four Fundamental Pillars of Education– Learning to Know, Learning to Do, Learning to Be, Learning to Live Together. The investigator thought it well to develop new dimension of the study in the light of four fundamentals pillars of learning suggested by UNESCO. If cooperative learning could be used well in the educational system then it addresses each of these four elements.

The Commission further observes, “Formal education systems tend to emphasize the acquisition of knowledge to the detriment of other types of learning; but it is vital now to conceive education in a more encompassing fashion. Such a vision should inform and guide further educational reforms and policy, in relation both to contents and to methods’ (ibid). It, therefore recommend, Four pillars of learning as the principal focus of schooling which is achieved best though cooperative learning.

It may be safely concluded from the above findings that Student-Teams Achievement Divisions and Jigsaw methods under cooperative learning improves the scores of students of the respective experimental groups in their Academic
Achievement and Self-Concept. It can be drawn that the methods of cooperative learning like STAD and Jigsaw prove more meaningful and effective than the conventional methods of teaching and learning. At the end of experimental treatment the effects may be relatively small, and even then it reflects significant differences on the measure of academic achievement and self-concept which indicated that students in cooperative learning strategies like Student-Teams Achievement Division and Jigsaw out-performed those in the traditional methods of teaching.

This study is focused on the use of cooperative learning methods in the area of academic achievement and self-concept at the elementary school stage and is delimited to the seventh grade level; further, the major emphasis is given to compare the effectiveness of the STAD and Jigsaw methods themselves, and with the traditional teaching methods. Thus, the fundamental variables of this study includes:

(a) Learning method especially cooperative learning methods such as Student-Teams Achievement Divisions (STAD) and Jigsaw;
(b) Learning outcomes in terms of Academic Achievement; and
(c) Self-Concept stands for awareness of oneself as a human being and the importance or significance of oneself’s role in life.

The present study retained five hypotheses out of the six namely:

- **H₁**, at the end of experimental treatment the group of students taught mathematics through Student-Teams Achievement Divisions (STAD) and Jigsaw methods under cooperative learning scores significantly higher mean on the academic achievement test than the group of students taught through traditional methods;
- **H₂**, at the end of experimental treatment the group of students taught mathematics through STAD and Jigsaw under the cooperative learning shows a significantly higher mean gain score on the academic achievement test than the group of students taught through traditional method;
- **H₃**, there exists significant difference between STAD and Jigsaw methods on academic achievement of students;
• H₄, at the end of experimental treatment the group of students taught mathematics through STAD and Jigsaw under cooperative learning method attains a significantly higher mean score on the test of Self-Concept than the group of students taught through traditional method; and

• H₅, at the end of experimental treatment the group of students taught mathematics through STAD and Jigsaw under cooperative learning methods shows a significantly higher mean gain scores on the test of Self-Concept than the group of students taught through traditional method, which proves effectiveness of cooperative learning methods like STAD and Jigsaw over the traditional classroom teaching methods and processes.

It further shows that (H₃) Jigsaw was found better than STAD to improve academic achievement in mathematics. It also revealed a few corollaries of H₂ which are as follows:

- that both Jigsaw and STAD proved to be more significantly effective in raising the academic achievement of students than the traditional method;
- that Jigsaw proved to be more effective than the STAD in raising the academic achievement of students;
- that the Jigsaw proved to be the more effective than the traditional method in raising the academic achievement of students; and
- that the STAD proved to be more effective than the traditional method in raising the academic achievement of students.

The rejection of the hypothesis H₆, shows that there existed no significant difference between STAD and Jigsaw methods in developing Self-Concept of students. H₆ stands partially retained on the basis of better mean scores in favour of Jigsaw over STAD and partially rejected on ‘t’ scores. It does not show however, any controversy in the above results. It clearly indicates, on the other hand, similar significant effectiveness of STAD and Jigsaw in raising the Self-Concept of students. The results of the study do not, in any way, discard or undermine these techniques, nor was it the objective of the study, but it only shows that methods of cooperative learning as STAD and Jigsaw are quite crucial to the inculcation of values like living
together, mutual sharing and understanding, and healthy cooperation rather than stark competition that narrows down the process of education to self-directed individualized learning. Quite significantly, both healthy cooperation as well as healthy competition complement and supplement each other in making the learning process tangible to sustainable human development. Therefore, both of them are obligatory in their own right to an effective schooling. They favourably compare in their effectiveness with different methods of cooperative learning vis-à-vis the conventional teaching methods and programmes.

Indeed it has been the growing demand of the fast changing educational scenario today, making schooling a playful endeavour for all practical and methodological purposes of sustainable development and joyful learning, especially at the elementary school level.

6.3 EDUCATIONAL IMPLICATIONS

The present research offers many an implication for parents, teachers, guidance workers and all educational stakeholders and even administrators. Parents need to identify the latent talents and potentialities of their wards being their first mentors of the child in her most impressionable period of development as an infant and early childhood before putting the child in the four walls of the formal schools; and also to actively participate and cooperate with school teachers for wholesome and sustainable development of the child as a joint and shared responsibility of the parents and school authorities. They should inspire the children to develop self-confidence and self-concept better which, in turn, would lead to better academic achievement. Teachers in the classroom confront with different potentialities, attitudes, aptitudes, propensities and academic abilities of the students coming from the different areas, class, caste and economic status. It is responsibility of teachers and the school system especially to provide congenial environment for meaningful development of every child in terms of various life skills like building self-confidence, self-respect, interpersonal skills and social relationships etc. as part of the schooling process, besides imparting the knowledge and skills of learning the academic context as well as the incumbent practices.
The present study clearly shows that changing from a traditional competitive classroom to cooperative settings does not diminish student’s achievement; in fact, it significantly improves their academic achievement in mathematics as also their self-concept in a cooperative learning environment. In that way, cooperative learning improves student perception about learning and decrease the feeling of alienation also that groups of students taught through STAD, Jigsaw methods of cooperative learning and shows higher gain scores on academic achievement and self-concept in comparison to traditional method of teaching, which conveys that cooperative learning reduced individual differences, enhances self-concepts and enables all type of students to perform better. It highlights the comparative merits of the cooperative learning methods vis-à-vis traditional classroom teaching, on the one hand and their intra-merits on the other. It does not counter any method but only seeks an ambitious amalgam of all methods and techniques of teaching in the school to promote educational excellence all round development of children put to their charge. Teachers, Teachers educators and indeed the system as such need to be fully awake about their role models and duties per se. An insight into pedagogy both traditional as well as the emergent, developed over a period of time- goes a long way in boosting the spectrum of schooling in a wholesome and holistic way. Hence, the need for innovative pedagogies all the while.

In the present study, groups were intimately rewarded based on their members’ learning and also students were expected and made individually accountable for their academic performance. Thus, a positive effect on students’ self-concept and academic achievement in Mathematics was found to be there to suggest the usefulness and effectiveness of cooperative learning for improving their academic achievement and also their self-concept. Any study of multifaceted programme leaves many questions unanswered and this one seems to be no exception. Perhaps the most evident question revolved around the relative impact of each of the methods, that is, STAD and Jigsaw under cooperative learning in producing the various effects on achievement and students’ self-concepts. It was found that cooperative learning methods like STAD and Jigsaw proved to be more tangible in its effectiveness on achievement and self-concepts between students and peers as also with teachers than
the traditional classroom approach which has remained by and large teacher-oriented than students-initiated, in any way, since its inception in the hoary past in human history. Despite its being too old and on its last legs, as some people do believe under the heavy weight of imminent ICT, the fact still remains that the sinews of the traditional pedagogy are so strong that no new pedagogical technology whatsoever can overthrow or ignore it to be successful in itself. No pedagogy can ever exist sans teacher-taught interaction and close-knit relationship between them. Cooperative learning proves to be practical and widely acceptable to students. When students are not able to understand teacher’s explanation, group members including peers are able to explain and communicate in simpler words that are more easily understood.

The merits of a few other sundry cooperative learning inputs and their implications for educational purposes could be gauged on the basis of observations like the following.

- Cooperative learning methods like STAD and Jigsaw have shown different ways of instructional arrangement which can be used to foster active student learning, which shows an important dimension of mathematics learning. Students can be given tasks to discuss, solve problem and accomplish quizzes, riddles and puzzles.
- Cooperative learning teachers/facilitators, instead of dealing with so many students simultaneously in the class; deal with small groups of students and group facilitators; that saves a lot of time and energy to devote to planning and initiating cooperative learning projects and programmer.
- Cooperative learning suggests a new role for the teacher. A teacher, accustomed to being the sole source of information for teaching the passive learners in the classroom has to change to be a facilitator in the learning process to actively encourage the student to:
  - Help each other and learn from each other.
  - Participate in discussions.
  - Facilitate each others’ learning.
  - Engage in problem solving in a free democratic way.
• Structure the lessons and curriculum cooperatively.

- The study suggests that teachers can use cooperative learning activities to provide students with opportunities to practice newly introduced or to review skills and concepts.

- Sometimes students explain things to each other better than a teacher can do to an entire class of students. This usually results in better retention of the learnt material.

- The study shows that students make connections between the concrete and abstract level of instruction through peer integration and carefully designed activities.

- The study has important implications for teacher education. Given the current wide-spread use of cooperative learning at various levels, it is imperative that pre-service teachers understand how to structure and monitor meaningful learning experiences for students.

- The present study suggests that mathematics is conceptually dense having its own language. Cooperative learning can be used to promote classroom discourse and oral language development of concepts, connotations and symbols. In cooperative learning activity, mathematics vocabulary and symbolic understanding can be facilitated with peer interactions.

- The study shows that students today seem to have a much shorter attention span than they did years ago. With cooperative learning used on regular basis, they are less likely to become restless or misbehave during a teacher-directed part of a lesson since they know they will have time in groups.

- The study tells that teacher should design activities to promote mathematics understanding by having students practice, manipulate reason and solve problem. For example, learn algebraic formulae and apply them to solve equation together helping each other in mathematical constructions, solve word problems related to daily life etc.

- The study shows that shy students are more likely to ask and answer question in a group setting. The same is true for low-skills students.
The study interprets that today’s job market is looking for people with good interpersonal skills, high self-concepts and problem solving skills. Regular participation in cooperative learning activities can help them develop these skills. Important skills such as critical thinking, creative problem solving and the synthesis of knowledge can easily be accomplished through cooperative group activities an inclusive cooperative learning classroom.

Meaningful content in cooperative lessons is critical for the success of all students. For students to succeed within their groups, careful consideration regarding group heterogeneity must be in conjunction with roles that ensure active and equal participation.

Students in heterogeneous classroom team try to solve complex cognitive tasks and the progress of the lower achieving students does not occur at the expense of the higher achievers or vice versa. So, cooperative learning is recommended for fostering students’ reasoning and communication.

6.4 SUGGESTIONS FOR FURTHER RESEARCH

No research can say any final word on a problem because it is very difficult for a researcher to touch all the complex aspects of a problem that demands probing. In light of findings and conclusions of the study, the following few suggestions for further research in this area of study may not be out of place. Some of these can be enumerated as:

The present study examined only the academic achievement and self-concept of students in Mathematics. Further studies may be conducted to investigate the effectiveness of cooperative learning for other dependent variables, such as attitude towards subjects, self-esteem, peer relation, social skills and academic motivation for different subjects.

The studies can also be conducted to compare the different cooperative learning methods with other methods of instructions at different grade levels.

Similar studies can also be conducted in other subjects like languages, Social Science, etc.

There is a need to explore the relation of cooperative learning with other emotional and motivational variables.
A study can also be conducted to compare and explore how cooperative learning methods affect the students of various abilities on cognitive, emotional and motivational dimensions; as well as on cognitive and non-cognitive dimensions of the high achievers, average and low achievers.

The study can be repeated to compare the effectiveness of various strategies under cooperative learning in different situations like – rural, urban, male, female students and mixed genders at different levels, which may be elementary, secondary, higher secondary or university level of education.

A study needs to be undertaken on a larger sample, and for a longer duration to examine the effects so that results can be confirmed better on non-cognitive variable like social skills or some other personality variable which take more time to bring about a change.

A comparative study is needed to analyze the effect of different cooperative learning methods on special groups of children such as the gifted, the learning disabled and other handicapped students in cognitive and non-cognitive domains.