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

After analysis and interpretation of the data the next step is presentation of the findings drawn from the results of the investigation. The main findings of the study in hand can be expressed on the basis of the status of the major hypotheses, as they form the solid base on which the structure of the whole edifice of outcomes would stand. In this chapter, the results are discussed to show how these findings are concurrent with some of the empirical studies already conducted in the field. At places, some of the observations did not concur with the findings of some investigators. In such cases, attempts have been made to fathom plausible reasons for these disagreements. Keeping the major findings in view, the educational implications of the study have been worked out. But these findings and implications do not fit in all the concerns of study. As such some suggestions have been given for the further research. This chapter is, therefore, devoted to focusing the findings, conclusion, discussion of results of the study and for indicating their implications and suggestions for further studies or research. These are presented below in the same sequence. It would, therefore, be apt to reiterate what stands by and what not on the touchstone of research evidence and its authentication or otherwise in the light of similar investigations put up over a period of time.

6.1 FINDINGS OF THE STUDY

1. No significant difference was found in achievement scores of experimental group and control group at pretest score that is, both the groups were found to be similar in respect to their achievement scores.

2. It was found that the subjects exposed to cooperative learning method (TGT) achieved higher on achievement test in comparison to those exposed to traditional method of teaching.
3. It was found that the subjects exposed to cooperative learning method (TGT) achieved significantly higher mean gain score of achievement in comparison to that in the traditional method.

4. No significant difference was found in academic anxiety scores of experimental group and control group at pretest score that is, both the groups were found to be similar in respect to their academic anxiety scores.

5. It was found that the subjects exposed to cooperative learning method (TGT) achieved significantly lower mean score of academic anxiety in comparison to that in the traditional method.

6. It was found that the subjects exposed to cooperative learning method (TGT) achieved significantly lower mean gain score of academic anxiety in comparison to that in the traditional method.

7. No significant difference was found in social competence scores of experimental group and control group at pretest score that is, both the groups were found to be similar in respect to their social competence scores.

8. It was found that the subjects exposed to cooperative learning method (TGT) achieved significantly higher mean score of social competence in comparison to that in the traditional method.

9. It was found that the subjects exposed to cooperative learning method (TGT) achieved significantly higher mean gain score of social competence in comparison to that in the traditional method.

It can be concluded from the above findings that Team Game Tournaments under cooperative learning improved significantly the scores of the students of experimental group as far as their academic achievement, academic anxiety and social competence are concerned.

6.2 CONCLUSION

Cooperative learning is one of the most well researched of all teaching strategies. Forty years of research has shown that when compared to other methods of instruction, cooperative learning is one of the most effective ways for students to

The data findings from this study indicate that the mean scores of academic achievement students in the cooperative learning group at the pretest score were lower than their mean scores at the post-test score and differ significantly, while the mean scores of students in the traditional learning method group at the pretest score were almost the same at posttest score and in some cases slightly different from their pretest mean scores were not significantly differed. This implies that when cooperative learning method (TGT) was used to teach the students, cooperative learning method (TGT) brought about increase in academic achievement, and social competence scores at the post-test score and reduction in students’ score of anxiety which was evidenced in the reduction of their mean scores at the posttest score.

Highly structured cooperative learning allows students to develop their own understanding of key concepts all the while encouraging and assisting others. It may be safely concluded from the above findings that TGT under cooperative learning significantly improves the scores of students of the experimental group in their Achievement. The conclusions of the study expressed in terms of their global importance for educational purposes vis-à-vis also tested the hypotheses of the study.

Academic anxiety has a significant relationship with study behaviour of the students and their academic achievements. In traditional class, where teacher calls upon a student; he/she becomes the focus of attention of the entire class. Any mistakes or incorrect answers become subject to scrutiny by the whole class. Such experiences produce embarrassment and anxiety in many students. In contrast, in a cooperative learning situation, when students work in a group, the focus of attention is diffused among the group members. When an answer is presented to the class, it represents the work of the entire group; therefore no individual can be held up to criticism, hence the score of classroom anxiety is reduced.

Cooperative learning strategies appear to promise positive effects on the students, as reflected in increased social competence and improved social attitudes and behavior. The general principle behind cooperative learning is that the students work together as a team to accomplish a common goal, namely that each student
learns something of value from the cooperative learning activity. As shown in the present study, Cooperative learning enhances social interaction, which is essential to meet the needs of at-risk students. Within the framework of cooperative learning groups, students learn how to interact with their peers and increase involvement with the school community. Positive interactions do not always occur naturally and social skills instruction must precede and concur with the cooperative learning strategies. Social skills encompass communicating, building and maintaining trust, providing leadership and managing conflicts.

The results of the study, interpreted in the context of global perspectives of education expected by world organization like UNESCO over the years, are also significantly relevant. UNESCO’s to landmark contributions to the cause of education namely, Edgar Faure’s Report, LEARNING TO BE, The World of Education. Today and tomorrow (1972) and Jaques Delors Report, ‘Learning : the Treasurer Within (1996), Paving the road map for education in the 21st century, provide a robust philosophy of life long cooperative learning to meticulously meet the emerging challenges of a new world order through the process of education. In a nut shell, the results of the study in hand are in agreement favourably with the UNESCO’s thought process on educational development for the 21st century. The results of the study thus have seminal importance for education, its progress and strategies.

The findings do prove the superiority of the cooperative learning method over the traditional classroom teaching processes, which indeed has been the growing demand of the fast changing educational scenario today, making schooling a playful endeavor for all practical purposes of sustainable development and joyful learning, especially at the school level. The results of the study, however, do not, in any way, discard or undermine the importance of individualized learning techniques, nor was it the objective of the study, but it only shows that the method of cooperative learning is much more crucial to the inculcation of values of cooperative living and healthy cooperation rather than the dry bones of sheer 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.

6.3 DISCUSSION OF RESULTS

The present study was conducted to find out the effect of cooperative learning and traditional learning method on 9th class students in relation to their academic achievements, academic anxiety and social competence.

Findings of the study clearly indicated that cooperative learning method can be perceived as a big change for education and there is lot of scope for research in this field. They can actually help in uplifting the quality of one education, so educationists need to develop more sophisticated understandings of the conditions, circumstances, means and mechanisms through cooperative learning can be closely connected to the young learners and teacher educators as well. One study of nearly 500 undergraduate engineering students from six diverse institutions indicated that cooperative learning produced “statistically significant and substantially greater gains in student learning than those associated with more traditional instructional methods.” Even with differences in pre-course characteristics and learning advantages, levels of understanding and retention still increased in the cooperative learning settings (Terenzini et al., 2001). For decades there have been hundreds of studies, which ultimately have come to the same basic conclusion, post-secondary students learn more, are better able to remember and then transfer their knowledge when taught with the cooperative learning model than other instructional methods (Cooper et al., 1990, Goodsell et al., 1992). Nesbit and Rogers (1997) describe the benefits of integrating cooperative learning with science, reading, and writing instruction. Using several of the different cooperative learning models, the researcher found that each method was successful in helping students work together in science to solve problems while using the tools of reading and writing. They suggested, however, that teachers begin with the Kagan structural approach before attempting the more complicated models of cooperative learning.

Luckher, Rosenfield, Sikes and Aronson (1976) found that as compared to traditional classrooms, Jigsaw improved academic achievement on a social studies
lesson. Likewise, Johnson, Marugama, Johnson, Nelson & Skon (1981) concluded that cooperative learning experiences tend to promote student achievement more than they do under the traditional setting. Perreault (1983) made an investigation on the study to experimentally comparing cooperative learning to non-cooperative learning with regard to their effects on cognitive achievement at the knowledge, comprehension and application levels of Bloom's Taxonomy with grade industrial art classes and found significant treatment effects in favour of cooperative learning for enhancement of achievement of the students.

Okebukola and Ogunniyi (1984) supported the effects of Cooperative, learning vis-à-vis Competitive and Individualistic interaction patterns on students’ achievement and -their level of acquisition of practical skills, showing clearly increased effects of cooperation on student achievement. So did Watson, Scott B, (1988) on the effects of the cooperative learning technique on the achievement of high school students with the main findings that there is an additive effect in using the components of cooperative learning, and that heterogeneous grouping and group incentives appear necessary to maximize students' achievement.

Similarly, Hall, Lee Elhs (1988), working on the effects of cooperative learning on achievement via vote analysis, and meta-analysis of the effects of cooperative goal structures on academic achievement, revealed as a major finding that the effect of cooperative learning on achievement differed in regard to the length of study, grade level and subject, while Bonaporte, E.P.C. (1989) comparing the effects of two forms of classroom organisation, that is, Cooperative-Mastery Learning (STAD) and Competitive-Mastery Learning on the mathematical achievement and self-concept of students, revealed superiority of the Cooperative Mastery Learning (STAD) form of classroom organisation over the Competitive-Mastery Learning a sufficient indication that the act of combining Cooperative Learning procedures with Mastery Learning procedures results in enhancing mathematical performance and self-concept of students.

Slavin's (1990) review of more than 70 high quality studies found that in most of these studies, the measured effects of cooperative learning on student achievement
vis-à-vis those of traditionally taught control groups on the same objectives were significantly greater in cooperative learning groups than in control classes. Alien Eugene (1990), studying the effects of cooperative learning in the 149 traditional classroom on student achievement and attitude, too, indicated that the experimental group improved more than the control group academically.

The present study has clearly brought out the potential of the use of cooperative learning method in high schools to improve the quality of elementary education and to promote learning on the part of the children. It is believed that the quality of learning methods improve the learning as well as motivate the children. But as the study has pointed out this may not happen unless equal attention is paid to keep the sets in working order under the rouged conditions.

Cooperative learning has been defined as groups of students working together to complete a common task (Johnson, Johnson, & Holubec, 2002). Numerous studies have measured the success of cooperative learning as an instructional method regarding social skills development and student achievement across all levels, from primary grades through college. The general consensus is that cooperative learning can, and usually does, result in positive student outcomes in all areas (Johnson & Johnson, 1990; Kagan & Kagan, 2009; Marzano, Pickering, & Pollock, 2001; Slavin, 1996).

During the study it was observed that there is a need of strengthening cooperative learning method as this method is very useful to enhance the academic achievements of the students. The finding of the present study is in consonance with Sumitra (1994) who showed that the students who were taught social science through cooperative learning showed significant improvement in their achievement in social science than the students who received instruction through traditional method. This suggests that cooperative learning contributes towards raising the achievement of students. Johnson, Johnson and Holubec (1994) held that cooperative learning activities might be used to teach specific content, ensure active cognitive processing of information, and provide long-term support for various achievers. Ponnusamy and Sudarsan (2001) also observed that cooperative learning contributes a lot to improve
the academic performance of the students in VII and VIII standards in learning mathematics. Kaul (2010), Behera and Pattanaik (2010) showed that there is a significant difference between the results of experimental and control groups. Learning together technique of cooperative learning method is more effective than traditional teaching methods regarding academic achievements of students in mathematics. Gupta and Pasrija (2011) in their study, ‘Cooperative Learning Versus Traditional Learning Effect on Achievement in Mathematics’ found that experimental group performed better than control group on post-test showing the obvious dominance of co-operative strategy (STAD) over Conventional Method of teaching. Significant difference was found between mean retention scores of the two groups (E and C) favouring the cooperative learning strategy. The findings of the present study are also supported by Mehar and Sekhri (2012) who investigated the effect of co-operative learning strategy on achievement in mathematics in relation to self-esteem. Co-operative learning strategy was found more effective than the conventional teaching strategy in enhancing the academic achievements of students. However, the findings suggest that co-operative learning strategy can prove to be a better strategy for teaching mathematics at secondary school stage.

The purpose of the present study was also to see effect of cooperative learning method and traditional learning method on academic anxiety of the students. It was found that students taught through cooperative learning method were able to reduce their academic anxiety as compared to the students taught through traditional learning method. The present finding of this study is also in consonance with the findings of Pushpanjali and Satyaprakasha (2010) who pointed out that Cooperative Learning is a broad phrase for an effective approach to education and was effective in significantly reducing the anxiety.

Worde (2003) also examined students’ perspectives on foreign language anxiety. The researcher stated that a sense of community is a factor that students believed to be helpful in reducing anxiety. In other words, they feel less anxious when working with partners and in small groups. So, working in cooperative learning environment is believed to reduce anxiety (Kagan, 1994). Take an example of Nakahashi’s study (2007), which used structured cooperative learning activities to
reduce language anxiety of first-year students in Akita University by providing a non-threatening, supportive environment to language learning development. The outcomes showed that while the students’ learning anxiety was lowered, their language learning achievement scores improved significantly. **Gokce & Derin (2007)** investigated the effects of cooperative learning in form of peer feedback, on the writing anxiety of Turkish prospective teachers of English. Results of the quantitative data showed that students in the cooperative learning group experienced significantly less writing anxiety than the students in the teacher-centered group. This indicates that students in the cooperative learning group showed a significantly higher decrease in writing anxiety level than their colleagues in the teacher-centered group.

**Vijaya (2012)** in his study of Cooperative Learning and its Impact among First Year Engineering Students in Tamil Nadu found that the students’ overall language anxiety significantly decreased after taught through cooperative learning method. In addition, they obtained higher language proficiency scores for the post-test than the pre-test after learning through this approach. The survey also revealed that students also had a favourable attitude towards cooperative learning. An equally compelling argument can be made for CL on the basis of the effect it can have on reducing students’ anxiety (**Stodolsky 1985**) by creating a relaxed, tension free classroom environment. However this study found that the subjects exposed to cooperative learning method (TGT) achieved significantly lower mean gain score of academic anxiety in comparison to that in the traditional method is in disagreement with the findings of **White (1997)** who investigated the effects of cooperative learning method and group activities on the secondary school students’ mathematics Anxiety Rating Scale. The pretest and posttest scores indicated that both the control and experimental groups began and ended the study with the same level of mathematics anxiety.

The findings of the present study also reveal a significant and positive relationship between cooperative learning method and social competence of the students. It was observed that mean gain scores of social competence were found more in experimental group as compared to control group and both group differ significantly. Though, not so much researches have been done in the field of
cooperative learning in relation to social competence of the students. But few studies also supported the findings of present study. The research supporting cooperative learning is boundless. Researchers list numerous positive outcomes associated with this innovative style of teaching. The most researched and anticipated benefit of cooperative learning is higher academic achievement and social skills development (Johnson & Johnson, 1999; Kagan, 1994; Leiken & Zaslavsky, 1997; Ma, 1996; Siegel, 2005; Slavin, 1999; Toumasis, 2004). Tied to increased academic achievement is the development and growth of higher level thinking skills, more frequent transfer of learned concepts to new situations, and more time-on-task (Johnson & Johnson). This academic progress is especially noticeable among minority and low-achieving students (Kagan 1994; Leiken & Zaslavsky, 1997; Ma, 1996).

In addition to promoting social skills, cooperative learning also enhances personal competencies of self-reflection and accurate self-assessment. By working closely with others students, learners can evaluate their own strengths and weaknesses, utilizing the diversity of the group to accomplish their mutual goal. By considering how well the group worked together, the effectiveness of social skills used as well as the creation of goals for further growth, cooperative learning encourages students to become reflective practitioners and strive for continuous improvement (Williams, 2007). Similarly, Muth (1997) found that cooperative learning could be used effectively during mathematics instruction to increase student comprehension of word problems, as well as to help them develop problem-solving skills. In the article “Using Cooperative Learning to Improve Reading and Writing in Mathematical Problem Solving,” she provides examples of how to implement cooperative learning in the mathematics classroom. Based on her experiences, Muth concludes that cooperative learning can improve reading and writing, as well as interpersonal skills, during mathematics instruction, particularly when students are working on problem-solving strategies.

In the light of above discussion it may be concluded that cooperative learning method has a significant impact on academic achievements, academic anxiety and social competence among students. The results of the study conclusively prove that
use of cooperative learning method is more effective than the traditional teaching method, because it helps the slow learners also to perform at par with the normal learners.

6.4 EDUCATIONAL IMPLICATIONS

The present research clearly shows that changing from a traditional competitive classroom to a cooperative one does not slow down student achievements; but significantly improves achievement as it is evident from the findings of the study. Cooperative learning is a powerful learning approach for helping all students to attain content standards and develop the academic achievements needed for succeeding in multicultural world.

In the present study, cooperative learning strategy (TGT) was found more effective than conventional method of teaching with respect to students achievement in Hindi Grammar reducing academic anxiety and enhancing social competence. Cooperative learning strategies prove practical and more expectable to students. Thus a positive effect on students' achievement in Hindi Grammar was found to be there to suggest the usefulness of cooperative learning for improving students’ achievement.

Group rewards are used in the present study, which is essential for the effectiveness of cooperative learning. Group rewards are based on the individual learning of all group members. This point takes strength from motivational theory of cooperative learning, which is great implication in the field of teaching. Students should be given some incentive or reinforcement in terms of praise, encouragement and prices to bring rapid progress in achievement.

There may remain many unanswered questions in a piece of research, but the main to be commended here its to say that cooperative learning proves to be more tangible in its effectiveness on achievement. Cooperative learning proves to be practical and widely acceptable to students. When students are not able to understand teacher's explanation, group members are able to explain in simpler words that are more easily understood. In this way, it improves students’ perception about learning and decreases the feeling of alienation. Also students attain comparably on achievement which shows that cooperative learning reduces individual differences and enables all types of students to perform better.
It suggests that time-on-task is an important preconditioned for learning, most of the major cooperative learning methods, specially the students Teams Games Tournament, would have positive effects on time-on-task or on teacher ratings of students behaviour in class.

Cooperative learning can be used as a supplement to large group classroom teaching. It is easier to monitor 5 or 6 students in groups than 55 or 60 individuals in class. Cooperative learning suggests a new role of 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: (i) help each other and learn from each other; (ii) participate in discussions; (iii) facilitate each others' learning; (iv) engage in problem solving in a free democratic way.

Teams Games Tournament (TGT) under cooperative learning method can prove very effective to make society cohesive and integrated whole by eradicating caste, race, religion and other such barriers because one of the major conclusions of this study is that the students taught through cooperative learning develop greater intergroup relations crossing the caste/race/religious barriers. Castists and racial/religious fundamentalism is eating in to the vital of our society and dragging the nation towards the peril of disintegration. The desired social change can be feasible by widely using Teams Games Tournament under Cooperative Learning method at school and college level in the country.

The teacher should closely monitor the involvement of all kinds students especially the achieving students in their learning activities. Teachers need to structure the lessons and curriculum cooperatively. The study has important implications for teacher education. Given the current widespread use of cooperative learning at all levels, it is imperative that pre service teachers understand how to structure and monitor meaningful learning experiences for students. Cooperative learning sessions would include games, recreational activities like solving puzzles and riddles, holding group discussions on some general topic related to current affairs to create more interest among students. Ultimately, the participants of cooperative learning sessions or the members of the group begin to take control of their own
learning. The present study has an important implication for teacher education, Pre-service and In-service teachers should understand how to structure and monitor meaningful experience for students. Important skills such as critical thinking, creative problem solving and the synthesis of knowledge can easily be accomplished through cooperative group activities in the inclusive classroom.

Cooperative learning assigns a new role to the teachers. It is the teacher to convert the passive listeners in the class in to active members and achievers by implementing cooperative learning in perfect way. While constructing the curriculum, all learning experiences including cooperative learning behaviours should be added so that students can be more benefited and enjoy the learning. A conducive environment with no threat of competition will allow the child to blossom and achieve his full potential in a relaxed atmosphere.

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 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.

The results and conclusions reached during the course of this study clearly highlight the effectiveness of cooperative learning in raising the students’ academic achievements. The results also showed the effectiveness of cooperative learning on reducing the academic anxiety and raising social competence among students. These findings certainly have a number of important implications for teachers, teacher-educators, curriculum makers and planners and for the society at large.

6.5 **SUGGESTIONS FOR FURTHER STUDY**

(1). The present study can be replicated to explore how cooperative learning affects the various abilities of students such as cognitive, emotional and motivational dimensions.
(2) The present study was conducted on 9th class students only. For generalizations of the findings, the study could be extended to students of other educational levels- primary, secondary and higher education.

(3) The study may be conducted using other methodology, population and settings.

(4) There is need to compare cooperative learning with other methods of instructions at different grade levels.

(5) Such a study can be conducted using sample groups and schools with different socio-economic status.

(6) Test standardized by other authors for the same variables may also be used for the study.

(7) Studies on cooperative learning strategies should be conducted for the entire year or for long period to determine if student achievement is increased with additional experiences in using cooperative learning.

(8) The present study has been conducted on teaching Hindi Grammar only. Further research is needed in other areas of school curriculum which consists of a number of subjects such as Science, Maths etc.

(9) The study can be repeated on a large sample for validation and for a longer duration to examine the effects on non-cognitive variable like Physics, Chemistry, mathematical skills or some personality variable which take more time to bring about a change.

(10) Research is needed to compare other methods of cooperative learning in various subjects i.e. upto what extent one method is superior to others.

(11) There is need to study the integrated effect of cooperative learning with other institutional treatments.

(12) Research is needed to study the effect of cooperative learning on special groups of children such as the gifted, learning disabled and other mildly handicapped students.

(13) A co-operative learning model can be evolved for the elementary school learners for catering to the Four Pillars of Education based on the findings of this study.
Different school systems are characterized by different standards of excellence in student morale. It will be a useful research Endeavour to compare different school systems such as Navodaya & Central, and Public & Ordinary in respect of the variables used in this study.

The investigator concludes the study with the hope that the findings would help improve optimum utilization of classroom morale of high school students to a great extent. It is also hoped that the studies suggested here would be carried out by others. Research must continue to provide the practical, theoretical and intellectual underpinnings to enable educations to achieve this potential.