CHAPTER-V

RESULTS AND DISCUSSION

On the basis of data presented in the previous chapter the outcomes of present study are being systematically discussed in this chapter. It may be mentioned at the very outset that these discussions have obvious implications for the formulation of policies and pedagogy related with the school education system in India. Despite the obvious constrains of time and resources the present study was conducted in the ambit of the pre-specified research design, has a direct message for the quality concern and for augmenting the competencies of students in the schools. In this chapter the findings of the study are portrayed in three sections.

In the first section the results related with the implementation of self-instructional package of cooperative learning, the findings of the pretest and posttest of subject science and the findings of the observation rating scale used for the assessment of effectiveness of self-instructional modules are discussed.

In the second section results of study related with the impact of self-instructional package of cooperative learning on creative behavior of the students are discoursed. Further in the third section the results of study related with the impact of self-instructional package of cooperative learning on attitude of the students are conferred. The results as deducible from the presentation of findings are indicated here succinctly:

The first and second objectives of this study respectively, were to prepare a self-instructional package of cooperative learning for secondary school students and to validate it. To achieve the objective of the preparation of self-instructional package of cooperative learning for
secondary school students, the researcher followed all the necessary steps (detail is given in the appendix A) and after that to validate the self-instructional package of cooperative learning modules, which were implemented on the students by forming structured cooperative learning groups (SCLG), a pre and post test was conducted and a self-constructed rating scale for the assessment of its effectiveness was administered.

The pretest of subject science was administered on the students before the implementation of self-instructional cooperative learning modules. The range of the marks obtained by the students varied from C.I. 20-30 to 80-90 and 90-100. Most of the students scored between the ranges of 50-60 followed by 60-70. After that, for the duration of twelve weeks the self-instructional cooperative learning modules were implemented on the students and then posttest was administered. The scores obtained by the student's in the post test were found increased significantly and most of the frequencies shifted between 90-110 class intervals. In the class interval of 90-100 the maximum frequencies obtained were found 104, in the class interval of 100–110 frequencies found were 90, followed by 70-80 in which frequencies were 29 and in the C.I. 110-120 the frequencies were 23.

The increase in frequencies of scores appeared to provide positive indication that students were benefited by teaching through cooperative learning method. Their learning gains were found increased significantly in the post test. The use of self-instructional modules of cooperative learning was found very effective and the students were appeared to be able to comprehend the subject deeply. It also appeared to prove that a positive attitude towards self-instructional package of cooperative learning and scholastics area developed among students.

The data obtained appeared to be ascertain that students completed their tasks successfully and helped to other weaker students also in their studies. The researcher analyzed that the scores of students
of every category i.e. girls, boys, average students, rural or urban, physically challenged children etc. increased satisfactorily. In the present study the impact of self-instructional cooperative learning modules was assessed in the terms of increase in learning gains, which was measured by the data in terms of achievement as measured by the pre and posttests of subject science.

Most of the students did well in the post test. The students whose scores were low or the low achievers and average students as they scored in pretest, also have shown good performance in the post test. Simultaneously, the above average and good achievers, became high scorers. Therefore it can be said with a great confidence that there was a positive impact of cooperative learning method on the learning gains or achievement of the students in subject science and the self-instructional modules of cooperative learning were found very effective for the students of secondary schools.

The meta-analyses by Johnson, Maruyma, Johnson, Nelson, and Skon (1981), Slavin (1983), Johnson, Johnson, and Smith (1998), Springer, Stanne, and Donovan (1999), and Smith, Sheppard, Johnson, & Johnson (2005) showed results favoring cooperative learning. Cooperative learning’s usefulness in the classroom to achieve meaningful educational outcomes is well established (Johnson& Johnson, 1999; Johnson, Johnson, & Stanne, 2000; Marzano, Pickering, & Pollock, 2001; Slavin, 1980; Slavin, 2006). The similar research indicated that cooperative learning is an effective instructional strategy supported by a wealth of empirical studies highlighting its effectiveness (Johnson, Johnson, & Stanne, 2000). The results of present study also appeared to approve this fact. It is also true that the home environment of the students was not controlled in this study and its impact was not measured.

After studying in structured cooperative learning groups students did well in the post test of subject science. Cooperative learning method
provided to the children opportunities for hands on experiments, group discussions and to construct their own knowledge, themselves. Their understanding of the subject appeared to increase effectively because of the use of cooperative learning modules. The concepts became clearer to them. They magnificently started to think and discuss also about the various applications of principles of science and their applications in life.

The cooperative learning method found helpful in developing and bridging a link between theory and practice. The activities created situations to connect principles of science with real life. The marks obtained by all the 60 experimental groups (60x5=300 students) were found increased significantly in the post test. This also appeared to help in the development of positive attitude among students towards cooperative learning technique and academics.

To achieve the second objective of the study a Likert type five point rating scale was administered on the students to assess the effectiveness of self-instructional package of cooperative learning. The rating scale was administered on the students of the experimental group and on the students of control group at the completion of programme. The scores obtained were compared and analyzed by F-Ratio and the value obtained was 74.59, which was observed as highly significant. It appeared to prove that the students found it very effective and useful for them. The findings approved that the objective of the study was appear to achieved and the research hypothesis (H2) was verified.

Students felt that, the cooperative learning method of teaching helped them in learning the concepts easily. Students found it very motivational, which provided them opportunities for innovation, provided hands on experiences and helped in relating learning with life. The data of rating scale put forward the view point that the self-instructional modules of cooperative learning appeared to be very beneficial for all the
categories of students on which the same were implemented and in developing a positive attitude among them.

The first null hypothesis of the study postulated that there is no significant difference between the development of creative behaviour among secondary school students by learning through traditional instructional method and a new self-structured cooperative learning instructional method. To analyze the hypothesis, the data obtained by the self-constructed combined verbal & non-verbal creativity test of experimental and control groups was calculated and compared by the use of F-Ratio. The F-value obtained for this data was 88.94 at 0.05 level. The value obtained was found statistically extremely significant and the research hypothesis (H1) was verified.

The findings of the present study suggested that the use of self-instructional modules of cooperative learning was found beneficial for the students and a positive impact of cooperative learning method on the development of creative behaviour in the students of class VIIIth of secondary schools was observed. After the implementation of modules of science through cooperative learning technique a change in the creative behavior and divergent thinking ability appeared in the students. This fact was seems to establish that the students started to think in an innovative manner and tried to develop new and innovative ideas when different tasks were given to them.

To assess the impact of self-instructional package of cooperative learning on the creative behavior of students the researcher also has been used standardized Verbal & Non-Verbal creativity Tests of Baqer Mehdi on the students. The data obtained from both the tests was calculated and compared by the use of F-Ratio. The values obtained were 91.64 and 84.62 respectively at 0.05 level of significance. The results obtained from both the tests were found highly significant and the research Hypothesis (H1) was verified. This may be attributed to the fact significantly that there
was a constructive impact of self-instructional package of cooperative learning on the development of creative behaviour in the students of class VIIIth of secondary schools of U.P.

**Discussion:**

**Impact on Creative Behavior:**

The researcher analyzed the impact of self-instructional cooperative learning modules on the creative behavior of the students. The opportunities provided to the children to work together, to share ideas, to think in an innovative manner helped in the development of creative potential and a tendency of divergent thinking among them regardless of gender and other differences. No such study seems to have been undertaken earlier to measure the impact of cooperative learning on the creative behavior of the students and could support to the present study.

The researcher observed that on giving different tasks to the children in a group they shared their ideas with each other and were found benefitted from each other. Average ranking students also started to do well after spending more time with other members of structured cooperative learning group. After working in a group and by completing the given tasks students appeared to started thinking in an innovative manner and were evincing the ability to express them effectively.

Both cognitive and emotional, personality factors contribute to the development of creative behavior in the student. Cooperative learning method seems to have helped in the development of both these aspects of the personality of the students. Self-instructional Cooperative learning modules provided opportunities to the students for the development of attributes of originality of thoughts, flexibility and expression of ideas, open mindedness and abstract thinking. The implementation of modules through cooperative learning method also helped in the development of
artistic creativity, literary creativity, vocational creativity as well as scientific creativity among students. The researcher analyzed that the overall creative potential of the students appeared to have increased by the use of cooperative learning method.

For the sustainable growth and development of every society and nation creative thinkers are required. Creative people are like an invaluable asset for any nation. The researcher strongly feels that it is very necessary to develop creative behavior among our children through effective education. The implementation of self-instructional modules through cooperative learning method in this study seems to have helped in creating the situations for learning by doing and in enhancement of the active participation of students in the process of learning as well as in the development of creative behavior among the students.

It may also be mentioned that the power of imagination is a very important factor for the development of creativity in the children. The basic factor behind the power of imagination is effective perception of senses. The power of imagination also increases memory of the children. Imagination acts as a stimulus for the memory traces of the brain. A strong power of imagination also influences the mental health of the children. It strengthens the self-satisfaction and social development of the children. While working in structured cooperative learning groups (SCLG) students got such opportunities through which their power of imagination seems to have increased effectively. The results of creativity tests used in this study appeared to provide positive hints in this regard.

The findings of present study of the development of creative behaviour in the students are also supported by a study done by George Land in 1968 on a sample of 1600 children who were enrolled in a Head Start Program, USA. He administered the same creativity test on the children, which he devised for NASA to help in selecting innovative engineers and scientists. The results of the test regarding the creative
behavior were obtained as 98% on the children of age 5, 30% at the age of 10, 12% at the age of 15 (children were same) and only 2% in adults. This study brought out the fact that creativity can be taught to the children. In the childhood they appeared more creative in the comparison of on being older. Similarly another study of Ginamarie Scott, Lyle E. Laritz and Michael D. Mumford published in Mumford creativity research journal (2004) proved that creativity skills can be taught to children.

Another study done by Louis R. Mobley in 1956 proved that the success of IBM was based on the fact that they taught creative skills to the executive’s inspite of giving them managerial training.

The findings of this study were also proposed that on getting opportunities for the enhancement of creative skills an effective creative potential could developed among students. The three basic components of creative potential are assumed as- divergent thinking, motivation and expertise in the concerned area. Children could learn to be creative by experimenting, exploring, questioning, making assumptions, using power of imagination, synthesizing information through the capacity of perception and analysis of senses. It appeared to have proved that cooperative learning teaching method helped in the enhancement of creative skills in the students.

Results and discussion of Observation Schedule of Creative Behavior

The researcher used a self-constructed observation schedule to assess creative behavior of the students and with the help of teachers and principal of the schools, assessed the creative behaviour of all the 60 experimental SCL groups in the beginning of the implementation of cooperative learning modules, in the middle phase and in the last phase of the programme. The assessment was done by giving grades which were, defined as A+ = Excellent, A= Very Good, B= Satisfactory, C= Needs
Improvement. Assessment of all the 60 SCL groups was done and the description of various aspects included in the observation schedule of group no. 10 (only one group) is presented as follows:

**Impact of Cooperative learning method on different attributes:**

**Originality in Thoughts**

The researcher observed that due to working in SCLGs the students started to give more new ideas during discussions. All the group members in the beginning were hesitating and were not very much ready to take part in any discussion but slowly, change in their thoughts started to appear, they started to share ideas and gave brilliant ideas time to time. They received new experiences, thought critically on various aspects and appeared to produce unique views at the time of discussions. Their teachers also reported for the same.

**Divergent Thinking Capacity**

The group activities provided opportunities to students to think in divergent manner. Students started to think in different directions on various aspects. Sometimes the thoughts were found not useful but slowly the more guided ideas started to come out. Students started to think wildly without boundaries and barriers. The degree of flexibility and imagination power was observed enhanced in the students. The researcher also observed that at this stage students were full of energy and on getting proper guidance and motivation that energy had been channelized and utilized by the students in constructive work.
Capacity to do something new with confidence

The students felt themselves more confident in doing something new and to find some unique solutions of the problems. After every activity discussion was done with the students by researcher and the teachers of the school and it was observed that the conditions were very supportive for them and children felt them more confident in taking part in activities, in discussions and in completing the roles assigned to them. They appeared to establish cause and effect relationship with respect to various basic concepts of science.

Development of Aesthetic Sense

Students became able to visualize the situations and phenomena’s. In the cooperative learning group students got such opportunities which helped in developing aesthetic sense among students. It is also true that children already have such attribute of aesthetic sense in them genetically but cooperative learning helped in enhancing their capability. A positive and effective change in the intellectual, logical, societal and kinesthetic abilities of the students appeared. They appeared to have a propensity to be good at conversation, persuasion and facilitated to others by appreciation and cooperation. A feeling of admiration of the surroundings appeared to be fortifying in them.

Capacity of Elaboration

The researcher observed that students on getting opportunities of discussions and to give their ideas on all the related aspects started to give proper description of the concepts. They started to explain and elaborate the aspects accurately and effectively. They started to identify and develop relationship between the previous knowledge with the new concepts learnt by them. Higher mental abilities such as critical thinking,
evaluative ability and analytical thinking appeared to develop among students, due to which they became able to elaborate and elucidate their experiences and conceptual knowledge effectively.

**Sensitivity to problems of peers and Society**

On working in the SCLG students became able to comprehend about the problems, they faced during the experiments; they started to link these with everyday life and also thought to find out the solutions of the problems. They had been started to value harmony. During the cooperative learning group activities they learnt about the dynamics of social relationships. They started to acknowledge the importance of harmonious social interaction for the developmental progress of their own and others. Sensitivity towards the needs of others, for the respect of others feelings and social awareness appeared to develop among students.

**Relevance of Thinking**

The researcher observed that the students on working in the SCLGs were hesitating in giving ideas in the beginning but slowly on spending more time with each other they started to give new ideas, which were more relevant, more accurate and effective. Better understanding of concepts and effective observations helped in making their thought trends more relevant. They started to conceptualize and reflect in a positive way. Experimentation and real life experiences, as they received during cooperative learning group activities appeared to have helped in making their views more relevant.

**Usability of Ideas**

Students started to give useful ideas to solve different problems while working in SCLGs. Students understood different aspects deeply and tried to give useful solutions. The capacity of productive thinking
increased among students during the implementation of self-instructional modules through cooperative learning. Students started to give very useful suggestions during the discussions. Students were encouraged to let ideas flow freely, building on and improving from previous ideas. The power of analytical thinking appeared to increase among them which gave rise to the tendency of exploration, imagination and to put forward the useful repercussions.

**Capacity of Improvisation**

Students on getting opportunities in SCLGs started to give ideas to make their own designs of the models and apparatuses, which were used by them during the experiments included in the modules. The researcher also motivated to the students to make improvised apparatuses with the use of waste material they can get at home, in spare time. They appeared to turn into dynamic learners and started to conceptualize the events through experiment and experiences and to reflect in an innovative manner.

**Logical Reasoning capacity**

In the SCLGs students got opportunities for inductive reasoning, observation, analysis and synthesis, imagination, comparison and perception, all this helped in developing a capacity of logical reasoning in them. As thinking is a complex process, major emphasis was given on the development of higher order thinking skills like recall of information, basic concept formation, critical thinking and creative idea formation and these encouraged the ability to reason in the students. The researcher and the teachers of the school observed that students started to ask more questions in the classroom and appeared to think logically after the implementation of self-instructional modules through cooperative learning technique.
Flexibility of Thoughts

The capacity of flexibility of thoughts improved in the students on getting opportunities because students worked in a multidimensional way. They appeared to become open-minded and their thought trends became wider. This approach appeared to bring flexibility in their views. Both the factors of flexibility i.e. spontaneous and adaptive, found increased among students. They appeared to become very flexible in their approach and were found ready to adjust in different or even inconvenient circumstances. They also seem to start using their practical knowledge and were found exhilarated to focus on emotions, experiences, their observations and needs on the basis of the fact that they can make decisions and can arrive at meaningful conclusion.

Proactive behavior

The practical, hands-on and dynamic behavior appeared to increase among students because of the use of self-instructional modules on cooperative learning among students. They learnt the concepts by doing and participating in variety of activities and constructed their own knowledge as well as they learnt the applications of various basic concepts of subject science. They seem to become tolerant for personal criticism and for learning from their mistakes for improving in future. The opportunities they got for learning by doing appeared to make them open minded, not to give up easily and to make them more determined for their own learning and for the learning of whole group. They appeared to behave as forward looking persons and abled to handle the challenging situations successfully.
**Capacity of Abstract Thinking**

The students got opportunities to think, to do discussions, to do observations and to draw out inferences on their own during the implementation of self-instructional modules of co-operative learning. They started to give quick reply on various aspects as well as an imminent approach of getting solutions appeared to be developing in the students. The sense perception appeared to help in the development of abstract ideas among them. Their capacity of writing on their own and to develop new things appeared to increase due to the implementation of self-instructional modules of cooperative learning. Abstract conceptualization based on discussions, questions concerning why and what appeared to become easy for them and they actively took part in the construction of their own knowledge on the basis of experiences and feelings they obtained during the execution of self-instructional cooperative learning modules.

**Fluency of thinking**

The tendency of giving variety of new responses in a flawless way appeared to increase among students due to working in the SCL groups. The views expressed by the students were also found very relevant and appropriate. The cooperative learning method appeared to bring the change in thinking patterns of the students, made them more confident and helped in the enhancement of power of fluency of thinking. An ability to analyze information and experiences in an objective manner found emerged in them. The tendency of generating new ideas and development of a strong perspective appeared in the students.

In the following section the result of second null hypothesis is discussed. The second null hypothesis of the study postulated that there is no significant difference between the development of attitude among secondary school students by learning through traditional instructional
method and a new self-structured cooperative learning instructional method. To analyze the hypothesis, the data obtained by the self-constructed rating scale of attitude was calculated and compared by the use of F-Ratio. A highly significant value 29.46 was obtained at 0.05 level. It appeared to prove that there was an impact of cooperative learning method on the development of positive attitude in the students of class VIIIth of secondary schools.

Discussion:

Impact on Attitude

The impact of self-instructional cooperative learning modules was measured in the terms of attitude of the students. The researcher observed a positive change in the attitude of the students towards each and every aspect of their life. They appeared to commence to think positively, about success of each and every member, the learning became more interesting for them; they started to help each other in their studies and other activities. Cooperative learning method significantly affected to the awareness, behavior, motivational level, opinion, preferences, desire, interest and intention of the students a lot. The consequences of pre-posttest of science, learning gains and rating scale used for the assessment of self-instructional package supported to the impact on positive attitude among students.

The other researches (e.g., Johnson, Maruyma, Johnson, Nelson, & Skon, 1981; Slavin, 1983) found gains not only in achievement as a result of cooperative learning, but also in other areas such as motivation, self-worth, satisfaction with school, positive gender and race relations, general feelings of worth and approval by others.

In this study also the researcher found that the students of all the categories were equally benefited by the self-instructional cooperative
learning modules. A positive attitude developed in the students and the tendencies of social adjustment, cooperation, trust on each other, to help others, to express their views, motivation, curiosity, to ask questions, healthy discussions, to take initiatives, leadership quality, objectivity, capacity of decision making, observation, concentration, participation developed almost equally among children of experimental group. The findings are supported by various studies which are done in the various parts of the world.

The results of the present study of the development of positive attitude in the students are supported by a study done by Griffin Kathy R (2008), ‘Use of cooperative learning and computer assisted instruction to investigate mathematics achievement scores, students’ attitude towards cooperative learning and confidence in subject matter’ also supported that the use of cooperative learning technique changed the student’s attitude towards their confidence in the subject matter and their attitude towards working in cooperative groups positively. In the above mentioned study the subject mathematics was considered while in the present study subject science was taken in to consideration.

The results of the present study of the development of positive attitude in the students are also supported by a study done by Effandi Zakaria, Lu Chung Chin and Md. Yusoff Daud (2010), “The Effects of Cooperative Learning on Students’ Mathematics Achievement and Attitude towards Mathematics,” showed that cooperative learning method improve students’ achievement in mathematics and attitude towards mathematics. The researchers concluded that cooperative learning is an effective approach, which mathematics teachers need to incorporate in their teaching. The attitude of the students became positive toward the subject as well as the peers. In this study also the subject mathematics was considered while in the present study the impact was studied by the use of self-instructional modules of subject science.
The results of the present study in relation with the use of self-instructional modules of cooperative learning on the secondary school students are supported by a study done by Aggabao (2002) aimed at Developing Individualized Self Instructional Modules on Selected Topics in Basic Mathematics for Instructional use at the Teachers College in Isabela State University. After making use of the experimental method, it was concluded that the students as well as teachers have a positive attitude towards the use of self-instructional materials as a mode of instructions in Basic Mathematics. In this study the subject mathematics was considered and it was said by the researcher with confidence that the self-instructional modules were found very useful for the teachers and students both. While in the present study subject science was taken into consideration and after the implementation of self-instructional modules of cooperative learning it appeared to prove that the modules were found very valuable and useful for the students on which they were administered.

The results of another study, done by Van Dat Tran, published in May 2014 “The Effects of Cooperative Learning on the Academic Achievement and Knowledge Retention.” showed that after approximately 8 weeks students who were instructed using cooperative learning achieved significantly higher scores on the achievement and knowledge retention posttests than the students who were instructed using lecture-based teaching. The study supports the effectiveness of cooperative learning on Academic Achievement and Knowledge Retention of the students and also to the results of present study.

The researcher herself and with the help of teachers of the schools assessed the change in attitude of all the 60 groups in the beginning of the implementation of cooperative learning modules, in the middle and in the last phase by the use of an assessment observation schedule. The assessment was done by giving grades which were specified as, Grades = A+ = Excellent, A= Very Good, B= Satisfactory, C= Needs Improvement.
Assessment of all the 60 SCL groups was done and the description of various attributes assessed through the observation schedule of group no. 10 (only one group) is presented as follows:

**Impact of Cooperative learning method on different attributes of students:**

**Group Cohesiveness**

The researcher observed that in the very first week of the implementation of cooperative learning modules almost all the students were not adjusting more with each other, but slowly the situation started to change. As they started to spend more time with each other, more intimacy appeared to be developed among them. Approximately in the mid of the schedule a change in the behavior of the students started to appear which continued till the last of the programme in a very positive way. Group cohesion is a multi-faceted process, but it’s all four main components viz interpersonal relations, task or work related trust and relations, unity and controlled emotions were gradually appeared to be developed in the students. All the members of group were found more inclined to participate readily in every activity and to reside with the group. They were tried their best to be in unity while working towards the goal and taken care to satisfy the emotional needs of all the members of the group. At the later stages stronger task commitment and well build interpersonal relations were appeared among the group members. The cooperative learning technique seems to have brought a positive change in the students.

**Team Spirit in the group**

In the present study the researcher observed that after working together for a longer duration a better understanding and tendency of team spirit developed in the students. This helped them during
discussions, in correcting to each other and to do new tasks with more enthusiasm with each other. A good group performance appeared to increase the team spirit among the group members.

The findings of the present study are supported by one important study conducted by Usha Borkar & Madhura Kesarka, Cooperative Learning Strategy and Group Cohesiveness, S.N.D.T. Women’s University in June 2012. It proved that one factor contributing to teamwork is group cohesiveness. In this study the experimental group was subjected to intervention using a Training Package on Cooperative Learning Strategy of fifty hours duration and Posttest was administered to both the groups after completion of the intervention. The results of posttest of both the groups were compared to determine the effect on group cohesiveness. It was found that group cohesiveness increased in the experimental group which gave rise to the team spirit.

**Interest in Subject Science of the members**

The researcher observed that due to the implementation of cooperative learning module of subject science and due to getting opportunities, to do different activities in a group, to take part in brainstorming discussions, the interest of student’s increases in subject science. The result of posttest also supported to this fact. The subject teachers of the school also reported the same.

Students became more curious, were asking variety of questions and were appeared eager to do more work. They were enjoying their work and were ready to accept new challenges, this study appear to provide positive hints in this regard.
Clarity of concepts /Conceptual Knowledge

“Rote memorization” confines students to the textbooks and do not get any opportunity to go beyond. This makes the students not to think of anything else for developing “Knowledge”. During learning through self–instructional package of cooperative learning, instead of simply receiving information verbally and visually, students received, participated and actively did all the actives. It increased the understanding of concepts in a deeper way and made them able to apply their knowledge in the real life situations. The scores of the posttest supported to this fact.

Interests and Abilities in other fields

The researcher observed that due to the implementation of cooperative learning module of subject science and due to getting opportunities, to do different activities in a group, to take part in brainstorming discussions, the interest of student’s increases in subject science. The interest and abilities of the student’s also found increased in the scholastic as well as the co- scholastic areas. The result of posttest also supported to this fact. The subject teachers of the school also reported the same. Students became more curious, were asking variety of questions and were appeared eager to do more work. They were enjoying their work and were ready to accept new challenges. Students of the experimental group started to participate in all type of activities more frequently and willingly. A positive attitude was appeared towards different subjects; co-curricular activities, sports etc. in the students and they became capable to handle the rapid changes which happen in their lives.

Education a joyful experience for the group members

The researcher found that group discussion, sharing of ideas and cooperation with each other made the learning of new concepts a more joyful experience for the students and helped in reduction of problems of
forgetfulness, revision of subject matter etc. Some students were facing problems in understanding some subjects like Mathematics and English or difficulty in some other subjects. Learning together made a difference in the process of learning for them and the education turned in to a better experience for them. The school teachers also reported that after the completion of cooperative learning teaching schedule, even average students are performing well in the class.

**Development of Interpersonal skills**

Development of interpersonal skills like curiosity, questioning, rational thinking, tolerance, decision making, leadership, suspended judgment and motivation etc. were appeared to be enhanced by the use of CL teaching method among students. CL teaching method also helped in the development of scientific attitude and scientific temper among children. The result of attitude rating scale also supports it. It was observed by the researcher that due to working in the cooperative learning group’s effective communication skills, adjustment, conceptual knowledge, positive attitude, effective value pattern and life skills were appeared to be developing among students.

**Inculcation of Moral Values**

Values govern the behavior of a person and decide the standard of behavior. Values are interests, pleasures, likings, priorities, duties, desires, needs, demands, attractions and selected orientations of a person. The researcher observed that values like kindness, truthfulness, equality, dignity of manual work, courtesy, dutifulness, love, care, honesty, integrity, trustworthiness, respect for others, responsibility were developed in the students in all the structured cooperative learning (SCLG) groups. Values were experienced by the students at different levels and were internalized. The findings of the attitude rating scale and the observation schedule of attitude also appeared to prove this fact.
Concern with Social Problems

The group discussions and exchange of ideas with each other’s helped children in knowing the various social problems like sanitation, conservation of resources, to educate to the illiterates and non-school going children, poverty etc. While working in group children came to know about the weaknesses and shortcomings of all the other members of the group.

In the peer group children became more practical and their social expansion occurred frequently. The social development increased the ability to get along with the peer group and other members of the society. “Focus of the cooperative learning structured (SCLG) group was on interaction with each other, a student was reinforced ands/he was stimulated another in a dyadic situation and to whole group.” This study seems to have helped in contributing immensely to relate education with society.

Attitude towards skill development and education

While studying in CL groups, the suggestions they got from their friends and peer group were always found beneficial and made children more adjustable. The tendency of personal and social adjustment increased because of caring and sharing. A sense of bounded rationality was developed in the students, which also helped in the social, physical, mental and emotional development of the members of all the cooperative learning structured groups (SCLG).

Life Skills are abilities for adaptive and positive behaviour that enable individuals to deal effectively with the demands and challenges of everyday life. Life Skills are abilities that facilitate the physical, mental and emotional well-being of an individual. (W.H.O.)
The attitude of the students regarding the development of various skills appeared to become very positive as well as they learnt about the importance of skill development and quality education in their lives.

**Development of Emotional Balance**

Cooperation developed emotional balance also; children became able to tolerate their criticism as well as appreciation equally. An emotion is a dynamic internal adjustment that operates for the satisfaction, protection and welfare of the individual.” While working in the cooperative learning group the tendency of adjustment with each increased, similarly children got more satisfaction in their work, they felt happiness in completing the work, they understood to this fact that every work is for their own development as well as for the development of other group members.

In the long term students learnt to be tolerant, to listen to each other carefully, not to react violently, to respect each other’s ideas, to share their feelings with others. The Cooperative learning tasks helped them in socialization and in increasing the tendency of social adjustment among students. So Cooperative learning structured groups (SCLG) in this study seems to have helped in the development of emotional balance in the students.

**To cope up with pressure of academic achievement and stress management**

Need for recognition and need for achievement are the forces which work for the group cohesion. Desire of achievement of the goals became prominent in the SCL groups. Cooperative group affected the learning of students to a great extent. When the self–instructional package of CL stimulated the interactions through this innovative technique the students appeared to become more attentive, took more interest in
learning and shown cohesiveness. Due to the democratic atmosphere of the class students seems to become motivated to take initiative, became more self-directed and constructive. The students also appeared to become able to recognize to the sources of stress during work and in their lives, and how to cope up with those, how to tackle and change the situations.

**Attitude towards teachers, school and relation with peers**

If in a group everyone gets the right place, respect, satisfaction in work and a favorable atmosphere then the coordination between group members become long lasting. Cooperative learning group in this study provided all such opportunities to the children and helped in the development of a democratic sense in them. The findings of this study revealed that cooperation developed a mental state in the students that produced a psychological motive to excel or to reach to a goal. General humanistic tendencies were of great educational value.

The students had an important social reference and it in a great way influenced the general social development of the child. This also helped in making effective social bonding among them and to find optimum solutions of the problems of the society. In cooperative learning group children learnt this bonding effectively. Nowadays being a "team player" is a key part of professional success and in SCLG groups students learnt this tendency. This study appeared to prove that team leaders can be developed in the society by the effective use of cooperative learning method.

**Time management quality and use of leisure time**

Time is a valuable asset in everyone’s life and management of time is need of the hour. Time management is a key to be successful in all areas of life. It is very necessary to develop the quality of time
management among children. While completing the cooperative learning tasks students learnt to complete all activities in the given time. Slowly it appeared to become their habit. In the last stages of the programme, it was observed that they were completing their work in or before the duration given to them. This fact proved that the students learnt to manage their time, up to a great extent. The students appeared to plan their work wisely and logically. This quality helps students in completing more work in less stress, with proper organization and without any tension. The teachers of the school also reported the same. This study appeared to prove that the students acquired the habit of time management.

Development of Resource Management quality

All the resources/material are always limited in quantity. While completing the cooperative learning tasks the students learnt to use the given material wisely and judiciously. Slowly it became their habit. In the last stages of the implementation of structured cooperative learning modules they were using the material with optimum utilization and without any wastage. They also learnt to use all the natural resources wisely. It appeared that they understood the importance of resources and developed tendencies of reducing and reusing. During discussions also they expressed their views regarding the conservation of resources. This was appeared to prove that they have acquired the resource management quality due to the implementation of self-structured modules through SCL groups.

Development of Leadership quality

Leadership is a very dynamic element. It is such feature of adjustment and leading, which motivates to the group members to exist together or it promotes to the peaceful and meaningful co-existence. Leadership is an act of ability, creativity, initiation power and compassion
which can motivate the group members to achieve the goal. Better Coordination and effective commands are possible due to effective leadership. It was observed in this study that by providing different tasks and responsibilities to the children through cooperative learning method leadership qualities were developed in the group members.

The quality of leadership in the children determined the success or failure of any task and group work, which was given to them. The result of the study assured that SCLG group tasks facilitated to the participants for being a leader in their future. The teachers of the school also reported for the change appeared in the students.

**Enthusiasm and Interest towards Work**

The researcher observed that during working in the SCL group enthusiasm towards work and in the studies increased in the students. They completed all the tasks happily, never get bored and tried to do various new experiments successfully. They received new experiences during every activity and also developed interest in them regarding achieving the goal of better understanding of an issue or skill, reaching to the best solution or developing new ideas and directions for the group. The overall interest found increased in the students due to working in a cooperative learning group. They all appeared to start to take part in the discussions and giving new ideas to do various activities.

**Caring & Sharing Attitude**

The researcher observed that through cooperative learning technique students of all the sixty (60) SCL groups learnt caring and sharing both with other children. Caring is the essence of moral life. Caring involves feelings, relationship; not to contend with other children, nature of protecting others and causing no any damage to others. Sharing encompasses to sharing of feelings, ideas and thoughts, resources and
achievements with all the members involved. Students appeared to understand that sharing can bring mutual benefits. By sharing the ideas, skills, thoughts, problems the students seems to have been become more sensitive and responsible in the cooperative learning group in this study.

**Attitude towards Hard work or dignity of Labour**

Hard work is the key for success in any field. The researcher observed that most of the children understand the importance of hard work in everyone’s life. They were aware that without hard work nothing is possible in this world. But there were such children also those were of a feeling that there is no need of hard work and without working hard also they can succeed in their lives.

In the beginning of the implementation of self-instructional modules of cooperative learning some children shown a behavior of not doing work on their own but slowly they understood that they have to complete their work with responsibility and a major change in their behavior appeared at the later stages of the study. It appeared that the positive attitude and values of hard work, discipline and cooperation developed among students due to the use of CL teaching method.

**Reduction in complaining Habits and negative Attitude**

In the beginning of implementation of self-instructional modules of cooperative learning some students were complaining about each other and were not adjusting and cooperating too much with other group members. As the student’s spent more time with each other and completed all the given tasks, they started to enjoy the situation and the habit of doing complaints of other children unnecessarily was reduced. On getting good, morale boosting and an environment of encouragement positive habits appeared to develop in the students. The study appeared to prove that a sort of patient and open mindedness developed in the
students due to the implementation of self-instructional modules of cooperative learning.

**Reduction in Selfish Behaviour**

In this study the researcher observed that some of the students were showing some selfish behavior in the beginning and they were not ready to share their ideas, to extend their help and their expertise with other children but as they spent more time together and did several tasks together this negative tendency reduced and the children started to think in a positive way. They started to share everything with other children and also tried to solve the problems themselves or with the help of peers.

In the beginning researcher observed that some of the children were coming to do complaints of each other frequently but slowly they learnt to adjust more effectively with other group members. Students appeared to start to think for the benefit of others also. In the SCLG students learnt to think in a broader way and a positive change in their attitude was appeared on the basis of results of this study.

**A control on over-ambitious behavior and to recognize the reality**

In this study the researcher observed that some children were very over ambitious and because of this tendency they were not ready to support and to help others. Some children were feeling that if they will share their skills with others then they themselves will become low achievers or losers.

The researcher also observed that some children had a tendency to do less work and to gain more in a short time. Such behavior was changed on spending more time with each other. Students realized the importance of hard work and the importance of contribution of each and every individual in the success of all. While working in the SCLGs students
came in contact with the realities of life. Group activities seem to have developed a balance in their behavior and thinking pattern.

**Self-Motivation & capacity to motivate others**

In a closely cohesive or intimate group children proceed towards the achievement of goals with greater energy. The group training is more effective than individual training in the performance of social activities. Motivation and desire to do work and learning different things are very necessary for the success in life. In this study the group atmosphere and the technique of action of group influenced the personality of the group members. In a group, children also became free from tensions and frustrations.

The motivated structured cooperative learning groups (SCLG) of students shown better performance in the post test, creativity tests and got balanced scores on attitude rating scales in this study. The study appeared to prove that the students felt that the cooperative learning method motivated them for greater achievements and for the success of all.

**Development of good & Positive Habits**

Repetition of a task over a period of time leads to the formation of a habit. The habits are learnt by one’s own self but after learning, they become a controller of the behavior of the person. Habits are so often repeated that they become automatic. Healthy group activities develop the good habits which are beneficial for the children as well as for the whole society and nation. In this study in structured cooperative learning group children worked together, everyone motivated to the other, inspired from each other and learnt good habits from each other. Active learning, definite goals, group discussions and good decisions seems to have helped in developing good study habits and the other socially acceptable
habits in all the group members. The results of posttest, creativity test and attitude rating scale also appeared to prove to the same fact.

Trust on all group members

Cooperative Learning teaching method turned students from Ego centric to Socio-centric. In this study in the beginning students were not having trust on each other but after 2-3 weeks they appeared to start trusting each other, started to share their problems with each other and was trying finding out the solutions of the problems together.

Trusting each other appeared to reduce the tensions and the condition of depression and hesitation of the children. It appeared that they start to speak with more confidence and started to take initiative in every task enthusiastically. Every group member was supporting to others with utmost feelings and willingness.

Tendency of Self-Discipline

Discipline is an attitude of mind. It is a course of action leading to a greater goal than the satisfaction of the immediate interests. It helped in assimilation of the social and moral qualities to the people and to act accordingly. The highest level and most effective form of discipline is self-discipline. All the people should have adequate self-control and should be self-directed in their pursuit of goals. The five main pillars of discipline are – tolerance, strong will power, hard work, persistence and values. In cooperative learning group such state of mind was appeared to build up which motivated children for the development of a tendency of self-control, self-discipline and in turning their group in a disciplined group. In cooperative learning group students got such opportunities through which they appeared to easily learn the lessons of discipline and self-control.
Development of Planning/organizing Power

In the SCLGs, when students were introduced with different tasks and various duties were given to them, slowly they started to plan and organize each and every activity and for all the given tasks effectively. Slowly they learnt the importance of planning and organizing the things in an appropriate manner. In the last stages of the implementation of self-instructional package of cooperative learning, it appeared that the students mostly, finished their work well before the given completion time due to proper planning and division of work. Tendency of appropriate planning appeared to increase the efficiency of the students and also reduces the burden of work on them and they started to get better results and appreciation.

Development of Decision Making Capacity

Cooperation is not only symbolic but it is active, encouraging and creative, has an ability to inspire others. Correct decision, taken at the right time can change the direction of life of any person. In SCLG every group member participated in taking decision related with different activities and tasks. Qualities of awareness, openness and transparency in taking decisions were appeared to develop among students. CL teaching method seems to have helped in educating children in developing a balanced viewpoint on various aspects related with life. In SCLGs students got opportunities to think and work together, to share their view points, to reach on to a common decision and to choose the best alternative available for them.

Development of Conflict Resolution Capacity

When children started to work together, in SCLGs in the beginning they were not adjusting with each other on various matters. Likewise they were arguing and complaining about the behavior of each other and were
fighting on several issues with each other. More than 50% students shown such behavior in the beginning but as they spend more time together and their teachers and researcher explained that they have to work together in the same group, after some time a change in behavior of the students appeared. Slowly they started to find out the solutions of any conflict themselves and a harmonious environment developed in the SCL groups.

They themselves came to know that because of fighting with each other they couldn’t complete their task on time. They realized that any matter can be resolved by the discussion and better understanding. On later stages no such conflict among the members of the group was appeared and students shown a more balanced behavior towards each other. Teachers of the schools also reported about development of better understanding among their students.

**Development of Sense of Responsibility**

While working in SCLGs students appeared to become more responsible and a tendency of responsibility, towards self and other members of the group developed in them. Students became more attentive for the progress of self and other group members positively. Responsibility of the work was shared by all the students of the group with full integrity. The results of the study appeared to prove that the students shown more responsible and mature behavior towards the structured cooperative learning group tasks and they extended complete cooperation in every work as well as to the peers.

**Development of Problem Solving Attitude**

The researcher observed that in all the students who were working in structured cooperative learning groups a tendency of intellectual exchange that fostered creative thinking and productive problem solving quality was appear to develop. Mostly in a common classroom students
acquire knowledge without comprehending much, have information but lack the skills to apply them, and even know what is happening in the other corner of the world, but do not have an understanding of their immediate surroundings and have no solution of their own problems. Cooperative learning method appeared to provide better opportunities to the students to develop such skills which seem to have helped in finding out the solutions of their own problems and their nearby area.

**Wholesome development of Personality**

The aim of education is the wholesome development in the physical, mental and spiritual spheres. In this study the cooperative learning technique provided such opportunities to the students which appeared to help in the wholesome development of personality of them. Integrity in the behavior of students, consistency in attitudes, emotions and morally justified actions were appeared during the progress of the work. At the time of completion of cooperative learning modules students were appeared more confident, with more positive attitude, with clearer viewpoints, expressive, dutiful, socially bold, enthusiastic, emotionally stable and more organized ones. They themselves accepted that the SCLG tasks brought an effective change in them.

**Other Considerations**

The researcher observed in this study that students indicated about the positive group experiences, confidence in the subject matter, development of new and intense friendships and collaboration with their peers at the end of the implementation of self-instruction package of cooperative learning. Furthermore, many of the successful groups were heterogeneous in composition in terms of gender and level of competence. As learning became active and interaction based the potential for concoction and melding of ideas and values appeared to
increase, as does the potential for learning increased and learning became an attractive and interesting experience for a greater number of children. So cooperative learning seems to have helped in the development of all Life Skills among students which were necessary or desirable for full participation in everyday life.

It was observed by the researcher that the use of self-instructional package of cooperative learning was found equally effective for the students of urban and rural area, boys and girls, and of the students of different SES. The SCLGs were constructed in the way so that the representation of every category can be done satisfactorily and the results of the study appeared to prove that there was identical impact of self-instructional package of cooperative learning on all participants.

**Slackers**

Johnson and Johnson (1998) and others used the term “slackers” to refer to group members who contribute little or nothing to group efforts. Mesch (1991) also referred to those individuals as “hitchhikers”—a person who is just “along for the ride.” Slackers are further characterized by benefiting from the end result(s) of the group effort brought by the other members, and then performing poorly on some sort of individual assessment.

In this study also the researcher observed slackers or non-performers and some trouble makers in the beginning but as they spend more time together and did several tasks the slow and non−performers also appeared to start to work with more enthusiasm and in a positive way.

**More Mature Behavior than their Real Age**

In this study the researcher observed that some of the children were showing more mature behavior then their age of 13 - 15 years. They
were not having that innocence which the children of this age group are generally having.

The researcher tried to find out the reason of four such prominent cases and it was found that their own or home conditions were responsible for such behavior. One child Deepak was lost his parents. He was having one younger sister also and was living with his uncle. Father of another girl Seema had left their home and her mother was taking care of her and one younger brother and sister of her.

Two children Abhinav and Ravi were physically challenged and they were showing more maturity and carefulness in every work, with the comparison of other normal children.

**Time Together**

Another factor to consider was the duration or time, cooperative groups spent together. Learning occurs over time, and in this study the researcher found that on spending more time together students started to cooperate with each other, they started to help others in learning new concepts, the bonding between them became stronger and they appeared to start working like a team. The roles assigned to them compelled them to take help of the peers and to contribute their best in the structured cooperative learning group (SCLG).

**Use of self-Instructional Modules**

The effectiveness of the use of self-instructional modules in the present study was also supported by various researches conducted by researchers such as Chopra (1988), Greager and Murray (1991), Dhamija (1993), Dutt (1998), Aggabao (2002), Rastogi (2003) and Puri (2009). The results of their researches proved that the Self Learning Modules used for different subjects or courses are more effective as compared to traditional
mode of teaching. In this study the researcher has been used the self-instructional modules of Cooperative Learning, to give children more opportunities to do certain defined tasks and activities in a limited time.

It appeared to prove that the self-instructional package of Cooperative Learning worked as a reinforcement strategy on achievement or learning gains, knowledge retention, development of cognitive skills such as knowledge, understanding, application, higher order thinking and social skills among the students selected for the study. This study seems to establish the fact that the self–instructional modules of Cooperative Learning were found effective in respect of better learning, retention of the material learnt, in the development of positive attitude and creative behavior in the students of experimental group i.e. SCLG.

So it can be concluded with great confidence that an impact of cooperative learning teaching method on the attitude towards cooperative learning teaching method, academic achievement and social adjustment as well as on the creative behavior of the students has been appeared to develop. It is also true that like any other technique there are limitations of cooperative learning also. All the topics of all the subjects of school/college curriculum cannot be instructed only by the use of cooperative learning technique. So to make the teaching and learning, course of action more useful a teacher can use mixed type of techniques i.e. cooperative learning as well as individualistic learning or traditional teaching methods, according to the need. It can be said that cooperative learning teaching method can add new horizons to the potentials of students in not only becoming successful in life but also in becoming efficient in addressing the challenges of education and also to make the teaching-learning process more effective.