CHAPTER-VI

FINDINGS, CONCLUSIONS, IMPLICATIONS AND SUGGESTIONS FOR FURTHER RESEARCH

Based on the analysis of data and interpretation of results, a set of findings and conclusions can be drawn and on the basis of their discussion, a wide range of implications and suggestions need also to be focused on for further research in the field related to this study. Some of the significant possibilities and provisions in terms of findings of this piece of research may be as follows.

6.1 FINDINGS

i) The results arrived at during this study show that the post-test achievement mean scores of the experimental group-I and control group, matching on their intelligence and socio-economic status, differ significantly in favour of the experimental group.

ii) The post-test achievement mean scores of the experimental group-II and control group, matching on their intelligence and socio-economic status, differ significantly in favour of the experimental group.

This implies that the students who are taught Physics through Student-Team Achievement Divisions (STAD) under Cooperative Learning i.e. experimental group-I and students who are taught Physics through Group Investigation under Cooperative Learning i.e. experimental group-II, both show significant improvement in their achievement in this subject than the students who received instruction through the traditional method(i.e. the control group). It suggests that both Student-Team Achievement Divisions (STAD) and Group Investigation methods of cooperative learning contributes towards raising the achievement of students in Physics by its implication in the subjects as well.
iii) The group of students taught Physics through Student-Team Achievement Divisions (STAD) i.e. experimental group-I and students taught Physics through Group Investigation i.e. experimental group-II both show significantly higher mean gain in achievement than the group of students taught Physics through traditional method(i.e. the control group).

STAD and GI under cooperative learning develop more cohesive relations with their classmates than the students who learn through traditional method of teachings

6.2 CONCLUSIONS

It may be safely concluded from the above findings that STAD and GI under cooperative learning significantly improves the scores of students of the experimental group in their Achievement,

The conclusion of the study need also to be expressed in terms of their global importance for educational purposes vis-a-vis the tested hypothesis of the study.

Prima-facie, the principal focus of the study addresses the four basic postulates of the learning process and its impact on education for sustainable development of each and every individual learner in a school situation which is deemed to be a miniature society in itself, watching individually as well as collectively, the interest of its every member in terms of all round enfoldments of their potentials and personality traits benefiting a wholesome citizenry. The fourfold fundamental variables of the study obviously include: (a) the learning method, especially the cooperative learning method (b) the learning outcomes, in terms of performance achievement; as the principal human characteristic that goes a long way in value inculcation such as self-confidence or self-worth germane to the strength of human behavior and character formation, the underlying ultimate goal of education per se.

The retention of all the four hypotheses of the study namely $H_1$. At the end of experimental treatment the group of students taught Physics through STAD under cooperative learning scores significantly higher on the achievement test than the group of students taught through the traditional method; $H_2$ At the end of experimental treatment the group of students taught Physics through GI under
cooperative learning scores significantly higher on the achievement test than the group of students taught through the traditional method; \( H_3 \). Group of students taught Physics through under cooperative learning method STAD shows a significantly higher gain score on the achievement test than the group of students taught through the traditional method. \( H_4 \) Group of students taught Physics through under cooperative learning method GI shows a significantly higher gain score on the achievement test than the group of students taught through the traditional method does 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 elementary school level. The results of the study do not, in any way, discard or under estimate 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 EDUCATIONAL IMPLICATIONS

The present research clearly shows that changing from a traditional competitive classroom to a cooperative one does not diminish student achievement; it significantly improves achievement. In the present research, groups were rewarded based on their members learning and also students were individually accountable for their academic performance. Thus a positive effect on students' achievement in Physics was found to be there to suggest the usefulness of cooperative learning for improving students' 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 that students attain comparably on achievement which shows that cooperative learning reduces individual differences and enables all types of students to perform better.

- Cooperative learning can be used as a supplement to large group classroom teaching. It is easier to monitor 12 or 13 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:

  - help each other and learn from each other.
  - participate in discussions
  - facilitate each others' learning.
  - engage in problem solving in a free democratic way.

- 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.
• Group tasks designed and communicated to students in ways that make them believe that they are linked in such a way that one cannot succeed unless everyone succeeds. The tasks should engage students more actively in their learning experiences.

• The topics in different subjects to be taught by cooperative learning should be so decided that they should require use of skills that students feel capable of using to maximize their involvement in tasks.

• Even the less structured subjects like language, arts can be taught with this method like the problem-solving topics (grammar, comprehension, compositions, maps).

• 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.

• 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 teams try to solve complex cognitive tasks and the progress of the lower achieving students does not occur at the expense of the higher achievers or vice versa. So cooperative learning is recommended for fostering students reasoning and communication.

6.4 SUGGESTIONS FOR FURTHER RESEARCH

• The study should be repeated to explore how cooperative learning affects the students of various abilities on cognitive, emotional and motivational dimensions.

• There is need to compare cooperative learning with other methods of instructions at different grade levels.
• There is need to explore the relation of cooperative learning with other emotional and motivational variables.

• 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 skills or some personality variable which take more time to bring about a change.

• Research is needed to compare other methods of cooperative learning in various subjects i.e. upto what extent on method is superior to others,

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

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

• 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.