# IMPACT OF COLLABORATIVE LEARNING STRATEGIES ON SOCIAL MATURITY OF SECONDARY SCHOOL STUDENTS

#### J.N.Baliya and Shivani Sharma

The purpose of this research was to study the impact of collaborative learning strategies on social maturity and its various dimensions viz. personal adequacy, interpersonal adequacy, and social adequacy, of secondary school students. The study was quasiexperimental and used matched pairs pre-test post-test research design. A Higher Secondary School in Educational Zone Hiranagar of District Kathua was chosen for the intervention. The study was conducted on sixty-six students of two sections of class 9th. Two sections were randomly assigned to collaborative and traditional learning conditions. Four methods of collaborative learning viz. Think-Pair-Share, Numbered Heads Together, Jigsaw, and Fish-Bowl were used for a period of over five weeks. The results were analyzed using mean, standard deviation and a critical ratio (CR). The results of the study showed that this approach was successful in increasing personal adequacy, interpersonal adequacy, social adequacy and overall social maturity of secondary school students.

### **KEYWORDS:** Collaborative Learning, Jigsaw, Fishbowl, Social Maturity, Think-Pair-Share, Numbered Heads Together

#### INTRODUCTION

Nowadays, many student-centred teaching models, methods and techniques are used. One of the models in contemporary teaching is collaborative learning method. It is an umbrella term for a variety of educational approaches involving joint, intellectual effort by students and teachers together. Collaborative learning is the instructional use of small groups. Collaborative learning is a teaching arrangement that refers to small heterogeneous groups of

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students working together to achieve a common goal (Kagan, 1994). Its goal is to allow students to work together to maximize their own and others' learning. Students work together to learn and are responsible for learning of their team mates as well as their own. Cooperative method of education has several advantages over traditional method like increase in academic achievement, particularly in mathematics, science, languages, social studies etc., advanced skills of critical thinking and reasoning, problem solving ability, in-depth knowledge of the learned materials, less harmful activities in class, less anxiety and stress, stronger motivation for learning and achievement, and higher selfesteem.

Social maturity plays an important role in personal and social life. Socially mature person uses his/her energy properly whereas an immature person will direct his energy to come out to turn with his environment. The ability to function in an appropriately responsible manner while understanding the social rules and norms in place in a given culture and the ability to use that knowledge effectively is known as social maturity. A socially mature person is capable of initiating and maintaining positive social interactions, developing friendships, establishing collaborative networks, and coping effectively with their social environment. In contrast, lack of social skills has been identified as one of the major predictors of low self-esteem, peer rejection, social maladjustment, mental health problems, and delinquency (Asher & Wheeler, 1985; Elliott & Gresham, 1993). Therefore, in order to achieve success, we must be socially mature so that we can make adjustment with self as well as society.

Education is not only to excel in exams but to prepare students for broader aspects of life and life skills. No longer can students just have sound academic standing, but they must also be taught and have the opportunity to practice the social and personal competencies necessary to survive in the workplace. Therefore, the current study aims to assess the impact of collaborative learning strategies on social maturity of secondary school students due to its important role in the mental health, building leadership qualities, inter- group attitudes, self efficacy and educational success of the students.

#### **OBJECTIVES OF THE STUDY**

The main objective of the study was to assess the impact of collaborative learning strategies on social maturity on the whole and various dimensions of social maturity of secondary school students' viz.; Personal adequacy, Interpersonal adequacy and Social adequacy.

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# HYPOTHESES

The various hypotheses of the study are as under:

- 1. There will be no significant difference between mean scores of various dimensions of social maturity of control group and experimental group on pre-test of secondary school students in terms of:
  - 1.1 Personal adequacy
  - 1.2 Interpersonal adequacy
  - 1.3 Social adequacy
- 2. There will be no significant difference between mean scores of various dimensions of social maturity of control group on pre-test and post-test of secondary school students in terms of:
  - 2.1 Personal adequacy
  - 2.2 Interpersonal adequacy
  - 2.3 Social adequacy
- 3. There will be no significant difference between mean scores of various dimensions of social maturity of experimental group on pre-test and posttest of secondary school students in terms of:
  - 3.1 Personal adequacy
  - 3.2 Interpersonal adequacy
  - 3.3 Social adequacy
- 4. There will be no significant difference between mean scores of various dimensions of social maturity of control group and experimental group on post-test of secondary school students;
  - 4.1 Personal adequacy
  - 4.2 Interpersonal adequacy
  - 4.3 Social adequacy
- 5. There will be no significant difference between mean scores of overall social maturity of control group and experimental group on pre-test of secondary school students.
- 6. There will be no significant difference between mean scores of overall social maturity of control group on pre-test and post-test of secondary school students.
- 7. There will be no significant difference between mean scores of overall social maturity of experimental group on pre-test and post-test of secondary school students.
- 8. There will be no significant difference between mean scores of overall social maturity of control group and experimental group on post-test of secondary school students.

## **DESIGN OF THE STUDY**

The present study was experimental in nature and was based upon a quasiexperimental (The matched pairs pre-test post-test adapted from Cohen, Manion & Morrison, 2011) research design. It involved two groups of students, one experimental group and one control group. Experimental group was taught General Science through collaborative learning strategies and control group through conventional method.

## VARIABLES OF THE STUDY

Collaborative learning strategies and conventional method of teaching were the two independent variables of the study whereas social maturity was dependent variable. This variable was measured twice during the entire course of the investigation. First, before the treatment i.e. pre-test stage and second after the treatment period i.e. post-test stage.

School type, grade level, subject to be taught, teacher, intelligence of pupils etc. were intervening variables which were controlled either experimentally or statistically by the investigator.

# TOOLS USED

Test of General Mental Ability by Joshi (1956), Social Maturity Scale by Rao (2002) and Lesson plans based on Five 'E' model were used for collection of data.

### **PROCEDURE ADOPTED**

- a. Sampling: The population of the study comprised of class 9th students of Amar National Higher Secondary School in Educational zone Hiranagar of District Kathua. The initial student sample comprised of 81 students chosen from two section of class. The students were pursuing the regular course and it was not possible to select the desired students so two sections were equated on the basis of result of Test of General Mental Ability by M.C. Joshi. The final sample comprised of 66 students, 33 in each control and experimental groups. The class rooms remained intact but the left out students' scores were not taken into consideration for the analysis purpose. However, all students participated in teaching–learning activities. The two sections were randomly assigned as control and experimental group.
- **b.** Conducting The Experiment: Experiment was conducted in three phases. First phase involved the administration of Social Maturity Scale to the students of experimental group and control group. Second phase involved instructional treatment of about 5 weeks which included 18 teaching

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episodes to the experimental group through Collaborative learning strategies whereas the control group was taught through the conventional method. Same content was taught to both groups. For experimental group each lesson plan followed the BSCS (Biology science curriculum study) 5-E model.

## **COLLABORATIVE LEARNING STRATEGIES USED**

Four different collaborative learning strategies were used namely Think-Pair-Share, Numbered Heads Together, Jigsaw and Fish-Bowl. Think-Pair-Share, Numbered Heads Together and Jigsaw were used to teach the students whereas Fish Bowl was used to assess the students after every two days of the instructional procedure. Heterogeneous grouping of the students was done on the basis of general mental ability scores.

# STATISTICAL TECHNIQUES EMPLOYED

Data was analysed using Quartile Deviation, Mean, Standard Deviation, SEM, SEDM, Pearson Correlation Coefficient (r) and Critical ratio (CR).

# FINDINGS OF THE STUDY

Following results were obtained by analysis and interpretation of data:

The results in Table 1 show that the calculated value of CR (1.17) was less than table value (1.96) at 0.05 level of significance, hence, hypothesis (1.1) of the study was retained; i.e. there will be no significant difference between mean scores of personal adequacy of control group and experimental group on pretest of secondary school students.

For Interpersonal adequacy, the calculated value of CR (0.60) was less than table value (1.96) at 0.05 level of significance, hence, hypothesis (1.2) of the study was retained; i.e. there will be no significant difference between mean scores of interpersonal adequacy of control group and experimental group on pre-test of secondary school students.

Also, the calculated value of CR (0.19) was less than table value (1.96) at 0.05 level of significance, hence, hypothesis (1.3) of the study was retained; i.e. there will be no significant difference between mean scores of social adequacy of control group and experimental group on pre-test of secondary school students.

Moreover, the calculated value of CR (0.22) was less than table value (1.96) at 0.05 level of significance, hence, hypothesis (5) of the study was retained; i.e. there will be no significant difference between mean scores of social maturity of control group and experimental group on pre-test of secondary school

students.

## Table 1

Significance of Difference Between Mean Scores on Different Tests in Pre-Test Between Control Group and Experimental Group.

	Pre-test	N	Mean	SD	SEM	r	SE <sub>DM</sub>	CR	Significance
Personal Adequacy	Control group	33	78.48	4.56	0.79	0.03	1.02	1 17	N. S
	Experimental group	33	79.67	3.86	0.67	0.00		1.17	
Interpersonal Adequacy	Control group	33	78.91	4.54	0.79	0.18	0.96	0.6	N. S
	Experimental group	33	78.33	4.05	0.71	0.10		0.0	
Social Adequacy	Control group	33	86.91	4.26	0.74	0.26	11	0 19	N. S
	Experimental group	33	86.7	5.92	1.03	0.20 1.1		0.17	
Social Maturity	Control group	33	244.30	9.70	1.69	0.40	1.85	0.22	N. S
	Experimental group	33	244.70	9.72	1.69		1.00	0.22	

The results in Table 2 shows that the calculated value of CR (1.56) was less than table value (1.96) at 0.05 level of significance, hence, hypothesis (2.1) of the study was retained; i.e. there will be no significant difference between mean scores of personal adequacy of control group on pre-test and post-test of secondary school students.

It is also clear from Table 2 that the calculated value of CR (0.76) was less than table value (1.96) at 0.05 level of significance, hence, hypothesis (2.2) of the study was retained; i.e. there will be no significant difference between mean scores of interpersonal adequacy of control group on pre-test and post-test of secondary school students.

Further, the calculated value of CR (0.83) was less than table value (1.96) at 0.05 level of significance, hence, hypothesis (2.3) of the study was retained; i.e.

there will be no significant difference between mean scores of social adequacy of control group on pre-test and post-test of secondary school students.

## Table 2

Significance of Difference Between Mean Scores on Different Tests in Pre-	e-
Test and Post-Test In Control Group.	

	Control Group	N	Mean	SD	SEM	r	SE <sub>DM</sub>	CR	Significance
sonal quacy	Pre-test	33	78.48	4.56	0.79	0.81	0.47	1.56	SΝ
Per Ade	Post-test	33	79.21	4.17	0.73				
Interpersonal Adequacy	Pre-test	33	78.91	4.54	0.79	0.46	0.92	0.76	NS
	Post-test	33	79.61	5.53	0.96				
cial quacy	Pre-test	33	86.91	4.26	0.74	0.44	0.69	0.83	NS
So Adec	Post-test	33	87.48	2.97	0.52				
Social Maturity	Pre-test	33	244.3	9.7	1.69	0.8	1.07	1.87	N
	Post-test	33	246.3	9.73	1.7				. 0,

It is also evident from Table 3 that the calculated value of CR (1.87) was less than table value (1.96) at 0.05 level of significance, hence, hypothesis (6) of the study was retained; i.e. there will be no significant difference between mean scores of social maturity of control group on pre-test and post-test of secondary school students.

Results from Table 3 show that the calculated value of CR (4.89) was greater than table value (2.58) at 0.01 level of significance, hence, hypothesis (3.1) of the study was rejected; i.e. there will be no significant difference between mean scores of personal adequacy of experimental group on pre-test and post-test of secondary school students.

It was also found that the calculated value of CR (5.71) was greater than table value (2.58) at 0.01 level of significance, hence, hypothesis (3.2) of the study was rejected; i.e. there will be no significant difference between mean scores of

interpersonal adequacy of experimental group on pre-test and post-test of secondary school students.

## Table 3

# Significance of Difference Between Mean Scores on Different Tests in Pre-Test and Post-Test In Experimental Group.

	Experimental Group	N	Mean	SD	SEM	r	SE <sub>DM</sub>	CR	Significance
Personal Adequacy	Pre-test	33	79.67	3.86	0.67	0.57	0.60	4.89	Signific 0.01 le
	Post-test	33	82.61	3.56	0.62				ant at evel
Interpersonal Adequacy	Pre-test	33	78.33	4.05	0.71	0.28	1.12	5.71	Signific 0.01 le
	Post-test	33	84.73	6.26	1.09				ant at vel
Social Adequacy	Pre-test	33	86.70	5.92	1.03	0.12	1.26	3.87	Signific 0.01 l
	Post-test	33	91.58	4.92	0.86				cant at evel
Social Maturity	Pre-test	33	244.70	9.72	1.69	0.35	1.88	7 56	Signific 0.01 l
	Post-test	33	258.91	9.19	1.60				:ant at evel

Further, the calculated value of CR (3.87) was greater than table value (2.58) at 0.01 level of significance, hence, hypothesis (3.3) of the study was rejected; i.e. there will be no significant difference between mean scores of social adequacy of experimental group on pre-test and post-test of secondary school students.

In case of social maturity, the calculated value of CR (7.56) was greater than table value (2.58) at 0.01 level of significance, hence, hypothesis (7) of the study was rejected; i.e. there will be no significant difference between mean scores of social maturity of Experimental group on pre-test and post-test of secondary school students.

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#### Table 4

Significance of Difference Between Mean Scores on Different Tests in Post-Test Between Control Group and Experimental Group.

	Post-test	N	Mean	SD	SEM	r	SE <sub>DM</sub>	CR	Significance
Personal Adequacy	Control group	33	79.21	4.17	0.73	0.21	0.85	4.0	Signifi 0.01 l
	Experimental group	33	82.61	3.56	0.62				cant at evel
Interpersonal Adequacy	Control group	33	79.61	5.53	0.96	0.17	5.12	3.88	Signific 0.01 la
	Experimental group	33	84.73	6.26	1.09	09			cant at evel
Social Adequacy	Control group	<sup>1</sup> 33 87.48 2.97 0.52 0.14 0.94		0.94	4.36	Signific 0.01 lo			
	Experimental group	33	91.58	4.92	0.86				cant at evel
Social Maturity	Control group	33	246.3	9.73	1.7	0.25	2.02	6.24	Signific 0.01 l
	Experimental group	33	258.91	9.19	1.6				cant at evel

It is clear from Table 4 that the calculated value of CR (4.00) was greater than table value (2.58) at 0.01 level of significance, hence, hypothesis (4.1) of the study was rejected i.e. There will be no significant difference between mean scores of personal adequacy of control group and experimental group on posttest of secondary school students.

Table 4 also showed that the calculated value of CR (3.88) was greater than table value (2.58) at 0.01 level of significance, hence, hypothesis (4.2) of the study was rejected i.e. There will be no significant difference between mean scores in interpersonal adequacy of control group and experimental group on post-test of secondary school students.

Also, the calculated value of CR (4.36) was greater than table value (2.58) at 0.01 level of significance, hence, hypothesis (4.3) of the study was rejected i.e. i.e. There will be no significant difference between mean scores of social adequacy of control group and experimental group on post-test of secondary

school students.

For social maturity, the calculated value of CR (6.24) was greater than table value (2.58) at 0.01 level of significance, hence, hypothesis (8) of the study was rejected i.e. There will be no significant difference between mean scores of social maturity of control group and experimental group on post-test of secondary school students.

## DISCUSSION

The findings of the study show that collaborative learning has resulted in a significant increase in social maturity and its dimensions viz. personal adequacy, interpersonal adequacy and social adequacy of secondary school students. Collaborative learning strategies appear to promise positive effects on the students, as reflected in increased social maturity and improved social attitudes and behaviour. As shown in the present study, Collaborative learning enhances social interaction, which is essential to raise social maturity. The finding are supported by the study of Jordan and Metais (1997) and Gillies (2004), that there were improvements in student behaviour and their interpersonal relationships after collaborative learning. Further the results are strengthened by the findings of Othman, Asshaari, Bahaludin, Tawil and Ismail (2012), who revealed that the maturity of the students formed as a result of collaborative learning experiences, specifically, the formation of positive social skills, such as, improvement in student's behaviour and interpersonal relationship. Study of Lavasani, Afzali, Borhanzadeh, Farokhlagha, and Davoodi (2011) also supports the findings of the present study that indicated that the students taught by Collaborative learning in comparison with the students taught by traditional method, indicated more suitable social behaviour and less impulsive behaviour and also they totally have better social skills. Study of Goodwin (1999) have reported the same findings that collaborative learning arrangements with social skills instruction can accelerate student learning and improve students' social relationships. Natasi and Clements (1991) also indicated that participation in cooperative learning enhanced academic achievement, social competence, and interpersonal relations.

In the light of above discussion, it may be concluded that collaborative learning strategies have a significant impact on social maturity of secondary school students. The results of the study conclusively prove that use of collaborative learning method is more effective than the traditional teaching method in raising social maturity of the secondary school students.

#### REFERENCES

- Asher, S.R., & Wheeler, V.A. (1985). Children's loneliness: A comparison of rejected and neglected peer status. *Journal of Consulting and Clinical Psychology*, 53, 500-505.
- Cohen, E.G. (1994). Restructuring the classroom: conditions for productive small groups. *Review of Educational Research*, 64(1), 1-35.
- Elliott, S.N., & Gresham, F.M. (1993). Social skills interventions for children. *Behaviour Modification*, 1, 287-313.
- Gillies, R.M. (2004). The effect of cooperative learning on junior high school students during small group learning. *Learning and Instruction*, 14, 197-213.
- Goodwin, M.W. (1999). Cooperative learning and social skills: What skills to teach and how to teach them. *Intervention in School and Clinic*, 35(1), 29-33.
- Johnson, D. W., Maruyama, G., Johnson, R., Nelson, D., & Skon, L. (1981). Effects of cooperative, competitive, and individualistic goal structures on achievement: A meta-analysis. Psycho-logical Bulletin, 89, 47–62.
- Johnson, D. W., & Johnson, R. T. (1983). *The socialization and achievement crisis: Are cooperative learning experiences the solution*? In L. Bickman (Ed.), Applied social psychology annual 4 (pp. 119-164). Beverly Hills, CA: Sage Publications.
- Johnson, D. W., & Johnson, R. T. (1984). Motivational processes in cooperative, competitive, and individualistic learning situations. *Research on Motivation in Education*, 2.
- Jordan, D.W., & Le Metais, J. (1997). Social skilling through cooperative learning. *Educational Research*, 39(1), 3-21.
- Kagan, S. 1992. *Cooperative Learning*. San Juan Capistrano, CA: Resources for Teachers, Inc.
- Kagan,S. (1994). Cooperative Learning. San Clemente, CA: Kagan Publications.
- Lavasani, M. G., Afzali, L., Borhanzadeh, S., Afzali, F., & Davoodi, M. (2011). The effect of cooperative learning on the social skills of first grade elementary school girls. *Procedia - Social and Behavioural Sciences*, 15, 1802–1805.
- Natasi, B. K., & Clements, D. H. (1991). Research on cooperative learning: Implications for practice. *School Psychology Review*, 20(1), 110-131.
- Othman, H., Asshaari, I., Bahaludin, H., Tawil, N. M., & Ismail, N. A. (2012). Student's Perceptions on Benefits Gained from Cooperative Learning Experiences in Engineering Mathematics Courses. *Procedia - Social and Behavioural Sciences*, 60(Cl), 500–506.
- Sharan, Y., & Sharan, S. (1992). *Expanding cooperative learning through group investigation*. New York: Teachers College Press.
- Slavin, R. E. (1991). Synthesis of research on cooperative learning. *Educational Leadership*, *51*(5), *71-82*.