Appendix VI
Check List – Validation of Modules
(adapted from Mercedes, 2009)

<table>
<thead>
<tr>
<th>Characteristics of objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Each module is accompanied by objectives</td>
</tr>
<tr>
<td>The objectives are stated in behavioural terms</td>
</tr>
<tr>
<td>The words used in the objectives are clear and easily understandable</td>
</tr>
<tr>
<td>The objectives are realistic.</td>
</tr>
<tr>
<td>The objectives are Measurable</td>
</tr>
<tr>
<td>The objectives are attainable within specified time limit.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Characteristics of the Content of the Modules</th>
</tr>
</thead>
<tbody>
<tr>
<td>There is consistency between objectives and contents of modules.</td>
</tr>
<tr>
<td>The information provided in the modules is accurate and precise.</td>
</tr>
<tr>
<td>The content leads to the attainment of the objectives of the course.</td>
</tr>
<tr>
<td>The activities enhance understanding of content.</td>
</tr>
<tr>
<td>There is adequate presentation / discussion of content.</td>
</tr>
<tr>
<td>The examples presented are current, accurate, specific and relevant.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Characteristics of Language Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modules are grammatically correct.</td>
</tr>
<tr>
<td>The modules are accompanied by clear and specific directions for their use.</td>
</tr>
<tr>
<td>The vocabulary used is suitable to understanding level</td>
</tr>
<tr>
<td>Instructions are clear, unambiguous and easy to follow.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Characteristics of Evaluation Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>The modules have provisions for assessment</td>
</tr>
<tr>
<td>The items in the evaluation are congruent to the objectives and content of the modules.</td>
</tr>
<tr>
<td>The items cover the important components of social science.</td>
</tr>
</tbody>
</table>
EFFECTIVENESS OF COOPERATIVE LEARNING ON SOCIAL COMPETENCE OF SECONDARY SCHOOL STUDENTS

Pargat Singh*

Dr. Khushvinder Kumar**

ABSTRACT
The objective of the present paper was to study the effectiveness of Cooperative Learning (Jigsaw method) on Social Competence of secondary school students. Total 116 students of class 9th studying in a school affiliated to P.S.E.B were taken as sample. Data was collected by using Social Competence scale developed by Rani and Sharma, 2010. By employing 2x2 factorial design of ANCOVA results showed that students taught through cooperative learning method (Jigsaw)(Mean=146.61, N=57) achieved significantly higher on social competence scale as compared to traditional method of teaching(Mean=137.37, N=59). Social Competence of students was found to be independent of interaction between treatment and gender.

INTRODUCTION
“....let us unite, not in spite of our differences, but through them. Differences can never be wiped away, and life would be so much the poorer without them. Let all human races keep their own personalities, and yet come together, not in a uniformity that is dead, but in a unity that is living” Tagore (1937).

Social competence is an important ingredient of modern civilization; and an essential attribute of the members of a progressive society. It refers to a person's ability to get along with other people. A person's views of self in relation to the family, peers, and the wider world also affect his social competence. Social competence includes social, emotional, and cognitive skills and behaviors that children need for successful social adaptation. Social competence refers to the personal adequacy, interpersonal adequacy and communication skills (Rani & Sharma, 2010). Quite a bit of research during the past 20 years suggests that children who do not have a basic level of social competence by the age of 6 may have trouble with relationships when they are adults (Ladd et al, 1999; Parker & Asher, 1987). To develop social competence among Indian school students we need to make our classroom best place to interact with each other, communicate their ideas effectively to other classmates and construct knowledge through cooperative efforts instead of making students passive listeners. For this purpose we have to shift from a teacher dominated classroom to student centred. This paradigm shift can make our education system more effective through effective transaction of the curriculum. There are many methods, devices and skills developed over the time which can make classroom environment conducive for student's participation. But the decision of selection of an effective teaching method becomes more difficult in a diverse society like ours (Indian) and this diversity is increasing day by day with the effect of globalization. Children come to the classroom with almost as many different expectations as we cannot imagine. They have different personalities, skills,
abilities, different cultural backgrounds, self esteem, interest, attitudes, emotional needs and many more diverse needs. Moreover, with the popularization of the concept of inclusive education, every school is bound to have diverse classrooms. All of these students must be accommodated (at least to some extent) for an efficient learning on part of every child.

All the above points force us to think out of the box to find some student centered modes (suitable for Indian conditions) as compared to the teacher centered authoritative modes of transacting the curriculum. Cooperative Learning, Constructivist and Active Learning approaches can be considered as examples of such student-centered learning strategies. Common to these approaches is the construction of knowledge by the learners rather than knowledge being transferred from teacher to student. Cooperative learning is one of the main active group learning pedagogies. Co-operative learning means “Cooperation, a form of collaboration, is working together to accomplish shared goals” (Johnson & Johnson, 1989). Cooperative learning has also been described as one of the most widely investigated educational approaches (Slavin, 1996). Hundreds of studies have cited its benefits, and Johnson and Johnson (1989, 2000) and Slavin (1991) have produced extensive reviews of these. Cooperative learning, one kind of student-centered learning approach, has been documented throughout the literature as effective in helping students obtain practical learning skills, abilities for effective communication and proficiency in term of understanding knowledge, and it promotes positive student attitudes towards their own learning (Johnson & Johnson, 2008; Slavin, 2011). Johnson, Johnson and Stanne (2000) summarized that cooperative learning strategies are widely used because they are based on theory validated by research and almost any teacher can find a way to use cooperative learning methods that are consistent with personal philosophies. (Slavin, 1991) in a synthesis of research about cooperative learning finds that cooperative learning strategies improve the achievement of students and their interpersonal relationships. Positive effect was found in all major subjects, all grade levels, in urban, rural and suburban schools, and for high, average and low achievers. Cooperative learning comprises “instructional methods in which teachers organize students into small groups, which then work together to help one another learn academic content” (Slavin, 2011). Review of literature revealed that there are a number of methods under the umbrella term cooperative learning. Slavin (1995) summarized the most extensively researched and widely used cooperative learning techniques such as Learning Together & Alone, Teams-Games-Tournaments, Group Investigation, Constructive Controversy, Jigsaw Procedure, Student Teams Achievement Divisions, Complex Instruction, Team Accelerated Instruction, Cooperative Learning Structures and Cooperative Integrated Reading & Composition. Jigsaw (developed by Aronson et al. 1978) is a cooperative learning Method that enables each student of a “home” group to specialize in one aspect of a learning unit. Students meet with members from other groups who are assigned the same aspect, and after mastering the material in ‘expert group’, they return to the “home” group and teach the material to their group members which enables the students to maximize their own and each
other’s learning. Jigsaw IV (with some modification) was used in this study. Jigsaw approach is backed by research showing it to motivate students to work together, share ideas, pursue common goals and develop self esteem. Positive attributes needed to succeed at the work place include learning the material, being able to work in groups, and knowing how to motivate people. The jigsaw method can be utilized to help students in learning material, building self esteem or knowing how to motivate others. Jigsaw method has also shown positive result on social variables. Review of literature revealed that cooperative learning has significant effect on different dimensions of social competence as measured by different test (Aronson et al. 1978; Lickona, 1991; Early, 1999; Lucas, 1999; Tripathy, 2004; Sharma & Sharma, 2008; Gillies, 2008; Ebrahim, 2010; Shimarro and Aldrich, 2010; Leung, 2012). Cooperative learning also improves Interpersonal relationships (Sharma & Sharma, 2008) and decreases levels of loneliness and social anxiety, increasing the levels of happiness among the participants (Kocak and Recep, 2012).

OBJECTIVE: To study the effect of cooperative learning (Jigsaw method), gender and their interaction on social competence by taking pre-scores of social competence as covariate.

HYPOTHESES: (1) There is no significant difference in the adjusted mean scores of social competence of experimental (Jigsaw strategy) and control groups (lecture/discussion method) when pre-scores of social competence are taken as covariate.

(2) There is no significant difference in the adjusted mean scores of social competence of boys and girls when pre-scores of social competence are taken as covariate.

(3) There is no significant effect of interaction between treatment and gender on the adjusted mean scores of social competence when pre-scores of social competence are taken as covariate.

METHOD

SAMPLE: Random sampling technique was used to select the sample school. The present study was conducted on 116 students of 9th class of Govt. High School Khasi Kalan, Ludhiana, affiliated to P.S.E.B Mohali. Both boys and girls were included in the sample for study.

MEASURE: Social Competence Scale developed by the Rani and Sharma, 2010 and Cooperative learning Modules based on Jigsaw strategy developed by the investigator was employed to collect data.

DESIGN: The present study was experimental in nature. It was based on the lines of non equivalent Control group pre test-post test design.

PROCEDURE: The study was designed to find the effectiveness of Cooperative learning (Jigsaw Method) on social competence of 9th class school students. Permission was taken from principal of the school for conducting the experiment. In the first step social competence scale was administered to 116 students as pre test. Two intact sections of 9th class were taken and randomly one was selected as experimental group and another as control group. One group was assigned randomly to the treatment. This was termed as experimental group and the other was termed as control group. The experimental group was taught social science through jigsaw method (with
modules prepared by investigator) for a period of Forty days at the rate of 60 min. per day. On the other hand control group was taught social science with the help of conventional (lecture/discussion) method for a period of Forty days at the rate of 60 min. per day. After completion of the treatment social competence scale was administered to both the groups as post test. The extraneous variables like influence and motivation of the teacher was controlled by teaching both groups by the investigator himself.

RESULTS

Table 1: Group wise mean scores, standard deviation, n, and t-value of pre test mean scores of Social Competence

<table>
<thead>
<tr>
<th>Groups</th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Test</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experimental</td>
<td>57</td>
<td>134.93</td>
<td>11.756</td>
<td>1.66 (N.S.)</td>
</tr>
<tr>
<td>Control</td>
<td>59</td>
<td>131.41</td>
<td>11.098</td>
<td></td>
</tr>
</tbody>
</table>

N.S. = Non significant

From table 1: It is evident that t-value is .166 which is not significant even at 0.05 level. It indicates that the mean scores of social competence of experimental and control groups do not differ significantly. It may therefore be said that students in experimental and control group were equal on pre test mean scores of social competence.

Table 2: Summary of 2x2 ANCOVA on adjusted mean scores of Social Competence

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSA(Group)</td>
<td>1108.273</td>
<td>1</td>
<td>1108.273</td>
<td>28.062*</td>
</tr>
<tr>
<td>SSB(Gender)</td>
<td>17.598</td>
<td>1</td>
<td>17.598</td>
<td>0.446 (N.S.)</td>
</tr>
<tr>
<td>SS A*B</td>
<td>59.171</td>
<td>1</td>
<td>59.171</td>
<td>1.498 (N.S.)</td>
</tr>
<tr>
<td>SS Error</td>
<td>4383.834</td>
<td>111</td>
<td>39.494</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2355136.000</td>
<td>116</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant at 0.01 level, N.S. = Non significant

It is evident from the table 2 that reported F-value for adjusted mean scores of social competence is 28.06, which is significant at .01 level with df 1/111. It means that there is significant difference in adjusted mean scores of social competence between experimental and control groups. Further the adjusted mean scores of social competence of the
experimental group (Mean=146.61, N=57) is higher than that of control group (Mean=137.37, n=59). It reflects that cooperative learning (jigsaw strategy) was found to be significantly effective to increase social competence as compared to traditional method of teaching.

The F value (table 2) for adjusted mean scores of social competence of boys and girls is 0.446, which is not significant even at .05 level with df 1/111. It means that there is no significant difference in adjusted mean scores of social competence between boys and girls students. Both boys and girls do not differ in social competence.

The F value (table 2) for interaction between treatment and gender is 1.498, which is not significant. It means that there is no significant effect of interaction between treatment and gender on social competence.

DISCUSSION

The present study revealed that Cooperative learning (Jigsaw method) has an effect on social competence of school students. In other words, it supports that Jigsaw is an effective method in raising the social competence of students in comparison to traditional method. Thus, the results of the present study highlight and support the idea that cooperative learning strategies have a positive impact on social competence of school students. As National Curriculum Framework (2005) emphasised that knowledge should be constructed and the approach should be learner-centred. For this we have to move away from traditional teacher centred methods of teaching to student centred methods like cooperative learning. To discuss the results further it is a very clear advantage of cooperative learning that it provides a structure which allows students to help manage the classroom; which evolves from the positive interdependence created within the learning teams; and helps the students take more responsibility, and also that it gives teachers more instructional flexibility to accommodate the increased class-wide heterogeneity (Johnson & Johnson, 1989). Cooperative learning has all the essential ingredients that can bring qualitative change in education because it is based on new paradigm of teaching which considers that knowledge is constructed, discovered, transformed and extended by students (Aggarwal & Nagar, 2011). The cultural plurality and diversity of India provide enough opportunities to Indian children for the acquisition of higher order social competence, through rich and varied interpersonal interactions in schools. At school age students are not completely indoctrinated to the existing competitive process and not yet developed deep seated distrust for people of various groups of the society. So, it would be of great value if the basic process of learning through competition could be replaced to make youngsters learn to like and trust each other - not as an extra-curricular activity but as an integral part of the course of learning in the teaching learning process. Moreover education is not only learning the content matter of different subjects of curriculum viz social science, math, science, language etc, it also includes learning how to interact in the society and be a productive citizen. In addition to helping students to learn new material, the jigsaw method helps to build social competence of students. It is also the need of the hour to make our young citizens competent to perform their positive roles in society instead of involving
in social conflict basis on religion, race and other social factors which sometime lead to destruction. So in nutshell we can say that we should develop social competence of school students by employing cooperative leaning in our classrooms not only as method of teaching but also as philosophy of life.

REFERENCES


Slavin, R.E. (1996). Cooperative Learning has its greatest effects on student learning when groups are recognized or rewarded based on the individual learning of their group members. Retrieved on November 15, 2010 from: http://serc.carleton.edu/introgeo/cooperative/whyuse.html


EFFECTIVENESS OF COOPERATIVE LEARNING ON ACHIEVEMENT IN SOCIAL SCIENCE OF SECONDARY SCHOOL STUDENTS

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Dr. Khushvinder Kumar,
Principal,
BCM College of Education, Ludhiana.

ABSTRACT

The objective of the present paper was to study the effectiveness of Cooperative Learning (Jigsaw strategy) on Achievement in Social Science of secondary school students. Total 116 students of class 9th studying in a school affiliated to P.S.E.B were taken as sample. Data was collected by using Achievement test in Social Science constructed and validated by investigator. By employing 2x2 factorial design of ANCOVA results showed that students taught through cooperative learning strategy (Jigsaw) (Mean=27.12, N=57) achieved significantly higher in social science as compared to traditional method of teaching (Mean=22.39, N=59). Achievement in social science was found to be independent of interaction between treatment and gender.

Keywords: Cooperative learning, Jigsaw, Achievement in Social Science

Introduction

As many other countries across the world, India is in a process of educational reform involving a change of paradigm of educational practices in general and school education in particular. The shift is from a teacher dominated classroom to student centred classroom and this has wide-reaching implications throughout the educational system, but in each and every country where this is happening educationist seem to be at a bit of a loss as to how to cast constructivist thinking in a teacher. No doubt about that now a days it is a common belief that good learning is learner-centred. But still in our schools, education is perceived as a narrow repertoire of ritualised classroom behaviours, and only two skills are developed:
memorisation and repetition. Teachers are the center of classrooms. Moreover, teachers absolutely empower the class management and usually emphasize a memorization method in teaching. This leads to restrict students from analytical skills, opinion sharing and self learning.

NCF-SE (2005) emphasised that knowledge should be constructed and the approach should be learner-centred. For this we have to move away from traditional teacher centred methods of teaching to student centred methods like cooperative learning. Cooperative learning is not new; it has been around since the early 1900's when it was used in one room school houses. Cooperative learning is one of the most remarkable and fertile areas of theory, research, and practice in education. Cooperative learning is the instructional use of small groups so that students work together to maximize their own and each other's learning. (Johnson, Johnson, & Holubec, 1998). Although a number of Cooperative learning methods are applied in classroom teaching, a well-known and highly accepted method is Jigsaw, developed by Elliot Aronson. The jigsaw classroom is a cooperative learning technique with a three-decade track record of successfully reducing racial conflict and increasing positive educational outcomes. Just as in a jigsaw puzzle, each piece--each student's part--is essential for the completion and full understanding of the final product. If each student's part is essential, then each student is essential; and that is precisely what makes this strategy so effective (Elliot Aronson 2000-2013). In jigsaw, students of a normal-sized class are divided into groups of four to six students, each of which is given a list of subtopics to research. Individual members of each group then break off to work with the "experts" from other groups, researching a part of the material being studied, after which they return to their starting body in the role of instructor for their subcategory. The jigsaw strategy is a cooperative learning technique appropriate for students from 3rd to 12th grade.

Jigsaw technique, which is a greatly efficient teaching method, consists of challenging problems, participating student, and sharing their own opinions and
Cooperative Learning ideas (Maritland, Latourelle, Valenti and Bookman, 2001). In addition, the jigsaw technique encourages students to efficiently work in collaboration, to improve teamwork skills in problem solving. Jigsaw strategy affects students to have an attraction for learning contents and enhancing perception skills (Turk, Brine & Kanev, 2006). Johnson, Johnson & Stanne (2000) summarized that cooperative learning strategies are widely used because they are based on theory validated by research and almost any teacher can find a way to use cooperative learning methods that are consistent with personal philosophies. In a Meta analysis of 158 studies Johnson & Johnson reported that current research findings present evidence that cooperative learning methods are likely to produce positive achievement results. Slavin,(1991) in a synthesis of research about cooperative learning finds that cooperative learning strategies improve the achievement of students and their interpersonal relationships. In 67 studies of achievement effect of cooperative learning, 61% found significantly greater achievement in cooperative than in traditionally taught control groups. Positive effect was found in all major subjects, all grade levels, in urban, rural and suburban schools, and for high, average and low achievers.

Objective
To study the effect of cooperative learning (strategy), gender and their interaction on achievement in social science by taking achievement in social as covariate.

Hypotheses
1. There is no significant difference in the adjusted mean scores of achievement in social science of experimental (Jigsaw strategy) and control groups (lecture/discussion method) when pre scores of achievement in social science are taken as covariate.
2. There is no significant difference in the adjusted mean scores of achievement in social science of boys and girls when pre scores of achievement in social science are taken as covariate.
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3. There is no significant effect of interaction between treatment and gender on the adjusted mean scores of achievement in social science when pre scores of achievement in social science are taken as covariate.

Method

Sample
Random sampling technique was used to select the sample. The present study was conducted on 116 students of 9th class of Govt. High School Khasi Kalan, Ludhiana, affiliated to P.S.E.B Mohali. Both boys and girls were included in the sample for study.

Measure
Achievement test in social science was constructed and validated by the investigator. Cooperative learning Modules based on Jigsaw strategy were also prepared by the investigator.

Experimental Design
The present study was experimental in nature. It was based on the lines of non equivalent Control group pre test-post test design.

Procedure
The study was designed to find the effectiveness of Cooperative learning (Jigsaw strategy) on Achievement in Social Science. The investigator developed an achievement test of social science for the 9th class students. Permission was taken from principal of the school for conducting the experiment. In the first step achievement test was administered to 116 students as pre test. Two intact section of 9th class were taken and randomly one was selected as experimental group and another as control group. One group was assigned randomly to the treatment. This was termed as experimental group and the other was termed as control group. The experimental group was taught social science through jigsaw strategy (with modules prepared by investigator) for a period of Forty days at the rate of 60 min. per day. On the other hand control group was taught social science with the help of conventional (lecture/discussion) method for a period of Forty days at
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the rate of 60 min. per day. After completion of the treatment achievement test was administered to both the groups. The extraneous variables like influence and motivation of the teacher were controlled by teaching both groups by the investigator himself.

Results

Table 1: GroupWise Mean scores, S.D., N and t-value of pre test mean scores of achievement in social science

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>St. Deviation</th>
<th>t-value</th>
<th>Level of significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Test</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experimental</td>
<td>57</td>
<td>15.26</td>
<td>4.839</td>
<td>.144</td>
<td>Not significant</td>
</tr>
<tr>
<td>Control</td>
<td>59</td>
<td>15.14</td>
<td>4.703</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

From table 1: It is evident that t-value is .144 which is not significant even at .05 level. It indicates that the mean scores of achievement in social science of experimental and control groups do not differ significantly. It may therefore be said that students in experimental and control group were equal on pre test mean scores of achievement in social science.

Table 2: Summary of 2X2 factorial design of ANCOVA on adjusted mean scores of achievement in social science of experimental and control groups

<table>
<thead>
<tr>
<th>Source of Variance</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSA (Group)</td>
<td>822.987</td>
<td>1</td>
<td>8.22.987</td>
<td>34.508</td>
<td>.000</td>
</tr>
<tr>
<td>SSB (Gender)</td>
<td>2.911</td>
<td>1</td>
<td>2.911</td>
<td>122</td>
<td>.727</td>
</tr>
<tr>
<td>SSA X B (Group x Gender)</td>
<td>36.425</td>
<td>1</td>
<td>36.425</td>
<td>1.527</td>
<td>.219</td>
</tr>
<tr>
<td>Error</td>
<td>2647.263</td>
<td>111</td>
<td>23.849</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>78517.000</td>
<td>116</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

It is evident from the table 2 that reported F-value for adjusted mean scores of achievement in social science is 34.50, which is significant at .01 level with df 1/111. It means that there is significant difference in adjusted mean scores of achievement in social science between experimental and control groups. Further the adjusted mean scores of achievement in social science of the experimental
Cooperative Learning
group (Mean=27.72, N=57) is higher than that of control group (Mean=22.39, N=59). It reflects that cooperative learning (jigsaw strategy) was found to be significantly effective to increase achievement in social science as compared to traditional method of teaching.
The F value (table 2) for adjusted mean scores of achievement in social science of boys and girls is .122, which is not significant even at .05 level with df 1/111. It means that there is no significant difference in adjusted mean scores of achievement in social science between boys and girls students. Both boys and girls do not differ in achievement in social science.
The F value (table 2) for interaction between treatment and gender is 1.52, which is not significant. It means that there is no significant effect of interaction between treatment and gender on achievement in social science.

Discussion
The present study revealed that Cooperative learning (Jigsaw strategy) has an effect on achievement under two essential conditions: group and individual accountability. Group goals motivate students to help their group-mates learn. They develop positive interdependence between individuals in the group, giving them reason to cooperate in a meaningful fashion (Deutsch, 1949; Johnson & Johnson, 1989; Stevens, 1994). Individual accountability, a measure of each student's learning, increases the probability that all students will learn and reduce the potential for a free rider effect, where a student does little and relies on others in the group to accomplish the goal (Johnson & Johnson 1989; Slavin, 1994; Stevens, 1994). In the present study, the subjects exposed to Jigsaw method of cooperative learning were found higher in achievement in social science in comparison to subjects exposed to traditional method of teaching. In other words, it supports that Jigsaw is an effective method in raising the achievement in social science of students. Thus, the results of the present study highlight and support the idea that cooperative learning strategies have a positive impact on achievement in social science. To discuss the results further it is a very clear
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advantage of cooperative learning that it provides a structure which allows students to help manage the classroom; which evolves from the positive interdependence created within the learning teams; and helps the students take more responsibility; and also that it gives teachers more instructional flexibility to accommodate the increased class-wide heterogeneity (Johnson & Johnson, 1989; Slavin, 1994). Cooperative learning has all the essential ingredients that can bring qualitative change in education because it is based on new paradigm of teaching which considers that knowledge is constructed, discovered, transformed and extended by students (Aggarwal and Nagar, 2011)

References
Cooperative Learning


