Investigating the Effectiveness of Cooperative Learning Method on Teaching of English Grammar

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Abstract
The present study investigated and compared the effect of cooperative learning method and the whole class traditional method in developing English language of the students of 7th class. The students under control conditions were taught through whole class traditional method and the students in experiment groups were taught through cooperative learning method. The STAD (Student Teams Achievement Divisions) model of cooperative learning was used in this study. Four intact (as it is) groups were taken from boys and girls schools for this study. A pre-test post test control group design was applied. The independent sample t-test procedures were used to compare the control and experimental groups on pre-test and post test scores of achievement test. The results of the study revealed no statistical significance difference on pre-test scores of both the groups which means that the groups were alike in their achievement in English grammar before the experiment whereas the experimental classes outperformed the control classes when compared on post test scores after the experiment. The results based on post test scores showed that the STAD model of cooperative learning had significant effect on the achievement of students, both male and female, in learning English grammar at Elementary level. The effect size was also calculated to determine the magnitude of difference between achievements of experimental and control groups which showed high increase in the achievement of treatment groups.

Keywords: Achievement, cooperative learning, english grammar, traditional method (teacher-centered whole class method), STAD (Student Teams Achievement Divisions)
Introduction

Cooperative learning is an important teaching method in which students learn by helping each other in an educational setting. It is a set of instructional activities which demands learners to work in small heterogeneous groups (Slavin, 1987). Cooperative learning was defined as a method of instruction in which “small group of learners work together as team to solve a problem, complete a task, or accomplish a common goal” (Artz & Newman, 1990, p. 448). Cooperative learning has been as well as is being used through the world since several decades. The reason behind its use is its positive effectiveness in variety of areas including English language (Saharan, 1980). In the previous years, a lot of scholarly writings have been supporting its application in English classrooms which argued that language learning is determined by a complex interaction of the number of critical input, output and context variables and that cooperative learning puts positive effect on almost all variables which are very important for language learning (Kagan, 1995).

Student-oriented teaching method is used effectively in English classrooms at large because under this method students get maximum opportunities to express themselves with their fellows as well as with the teacher, whereas, the teacher-centered whole class traditional English language classrooms are lacking this opportunity (Schineke-Llano, 1983). Students learn more when they work under cooperative conditions because communicating and sharing ideas with peers is a language learning technique that they can apply outside as well as inside the classroom to reinforce learning (Oxford, 1990; Little wood, 1992).

English language has become the second language in Pakistan because it is being used at large as a medium of communication in government institutions and in business organizations in Pakistan. But the Standard of English language in Pakistan is very miserable because a huge number of students fail in examinations due to lack of proficiency in English language. The Government of Pakistan is trying its best to elevate the level of English language in the country and has given it the status of compulsory subject from class one in national curriculum (Ministry of Education, 2006). It is need of the hour to address the issues concerning English language and suggest the way to improve the standard of English language in Pakistan.

It is argued that English grammar is the core of English language, and it plays an important role in its development. Recent theorists of second language learning have the opinion that an explicit knowledge of grammar is vital for second language learning in many respects. This kind of grammar knowledge permits the learners to check their output over a period of time, as well as set off the essential process of
paying attention to new structures in their language input (Schmidt, 1990). A large number of research studies both experimental and quasi-experimental in the field of second language learning, published during the period of 1980-1998, were analyzed by Norris and Ortega (2000) and they recorded a number of research evidences which recommended the explicit teaching of grammar to learn the second language (when learners concentrate deliberately on the rules and mechanics of the language) instead of the implicit instruction (when no concern is shown to grammatical forms). The positive effects of explicit grammar teaching have been reported in research studies over the past two decades (Long, 1983; Long, 1991; Ellis, 1990; Ellis, 1994; Ellis, 2001; Ellis, 2002). The results of the above mentioned researches lay great stress on learning of grammar because the explicit knowledge of it makes the development of second language quite easy. Therefore, in this study, it was endeavored to enhance students’ proficiency in English language by providing them with overt and clear knowledge of English grammar.

It is generally thought that instructional methodology can provide a remedy to the poor state of English language. Therefore, different methods of teaching, ranging from direct approach, audio-lingual method, communicative approach etc., have been experimented all over the world but the results are not satisfactory (Madrid, 2000). However, in near past, a remarkable change was observed from teacher-centered whole class traditional methods towards more student-centered methods of language teaching so that the problems regarding English language might be addressed positively (Davis & Wilcock, 2005). Contrary to it, in most of Pakistani schools, particularly in public sector, the teacher-centered whole class traditional methods for English language teaching are being used till now (Warsi, 2004). In teacher-centered whole class teaching method, students have less chances to communicate with their peers and remained passive during the class and this state negatively affects the students’ ability of second language learning (Davis & Wilcock, 2005). The situation calls for some new and student-centered method of interactive learning to be exercised in English language classrooms.

Cooperative learning is considered one of the student-centered methods to be used in second language classes effectively. However, a little research has focused on the use of this method to teach English language to the students in Pakistani context. As above discussed that grammar has a high up place in language teaching and learning and without a good knowledge of grammar, the desired standard of language cannot be achieved. Consequently, this research study was designed to investigate the comparative effectiveness of STAD model of cooperative learning method on students’ achievement in English grammar as it is the vital part of English language.
Models of Cooperative Learning

Educational researchers have presented a variety of cooperative learning models and found them useful in particular sphere of knowledge. Some of these models are the Jigsaw, Group Investigation, Student Teams Achievement Divisions, and Learning Together.

Jigsaw

Jigsaw model of cooperative learning was developed by Aronson (1978) in which, students are put in small groups. The Students have to learn the given material in their groups. The given material was divided into parts and the students in groups read the part of material allocated to each member of the group. Then Students come together in expert groups to discuss the material. After that they return to their groups to teach the group mates about the part of material which they mastered in expert groups.

This is very helpful for discussion in the second language due to the elaboration of material to other group mate which is unseen for them. As indicated in research by Pica (1994), it has been proven that negotiation improves students’ understanding in the target language. However, it is necessary for the teachers to ensure that the students must have read and understand the assigned material.

Group Investigation

This was designed by Sharan (1988), in which, groups are assigned the topics from the material taught in the class by the teacher. These topics are broken down into small activities among the group members and groups reports are prepared and presented in the class by the group as a whole.

Student Teams Achievement Divisions (STAD)

Slavin (1995) says, in this model, students are divided in teams consisting of four to six heterogeneous members. The teacher teaches the content to students then the students go to their teams and learn the content, presented in the class, with the help of their team mates. After that students are assessed on individual basis by giving them quizzes consisting of the content learned during working in teams. The performance of students’ is calculated by comparing the scores gotten in the present quiz with the average scores of the past performances and improvement points are given to students on the base they surpass from the previous performances. Team scores are calculated by adding these improvement points and dividing them with the
total number of team members. Slavin put forward his opinion that this model of cooperative learning proved effective to teach grammatical items and vocabulary in English language class rooms. He further says that “STAD” model of cooperative learning showed very consistent results when used in English language classes and enhances the achievements of the students.

**Learning Together or Learning Circles**

Johnson, Johnson & Holubec (1994) mentioned five essential elements of this model of cooperative learning which are:

1. **Positive interdependence** denotes that every member in a team must be aware that he is the part and parcel of his group they have to "sink or swim together" (p. 9).
2. **Individual and group accountability** refers that each member of the team is accountable for his participation in struggle for a common goal and the team is accountable for the achievement of shared goal of the team.
3. **Working together** means that the team members help to promote each other’s learning; promotive face-to-face interaction.
4. **Small group skills** refer that students must have the knowledge to resolve the conflicts positively because “cooperation and conflict are interrelated”.
5. **Group processing** means to assess the working of the students in a group and to know about what is going on within the group and where the students need for improvement.

**Research Studies on Cooperative Learning**

Johnson and Johnson (2000) is of the opinion that cooperative learning exists over large areas of theory, research and practice in education. It takes place when students work jointly to reach common learning goals (Johnson & Johnson, 1999).

In a meta-analysis of 158 studies (Johnson & Johnson, 2000), it was found that cooperative learning teaching method produces positive results in students’ achievement. The findings of these research studies showed that cooperative learning method was more useful as compared to whole class traditional methods of teaching.

Alireza (2010) said that the students in cooperative groups encouraged one another and the less competent students got personal support from the more competent students of their teams at the need of hour in solving their problems. In response of any wrong answer by any team member, the more competent member of that team may correct the answer and elaborates the reason of being incorrect of that answer. This sort of explanation may enhance the interaction among team members, which can add the learning of materials through mental processing which takes place during this interaction.
Gomleksz (2007) designed a study to see the effect of cooperative learning teaching method on English language learners against the traditional teacher-centered whole class teaching method. He said that the students in treatment group who were taught through cooperating learning outperformed the students in control group who were taught through traditional whole class method. The difference between both the groups revealed the effectiveness of cooperative learning method regarding the English language learning.

Ghaith and Yaghy (1998) reported that cooperative learning is more helpful in enhancing the learning of rules and mechanics of second language. Both the researchers recommended the use of cooperative learning “STAD” model in English language learning classes. Ghaith (2001) pointed out that cooperative learning method of teaching was more effective and superior to individualistic whole class form of teaching because it improves the cognitive outcomes of schooling.

Succinctly, cooperative learning teaching method can play a very important role to speed up learning and ensure favorable environment for cognitive and social development. A number of research studies demonstrated that cooperative learning has more positive effect on students’ achievement in grammar of English language when compared with the whole class traditional instruction. Cooperative learning is being applied to teach English language to the students throughout the world by the teachers. The combination of theory, research and practice gave cooperative learning a prominent role in developing English language if it is carried out vigilantly in the classroom.

Statement of the Problem

English language is getting prominent place in the world scenario. It is an international language and is being spoken almost throughout the world for the settlement of international issues. So, learning of English has become an international need nowadays because the people of a country cannot keep its pace with the people of other countries without having command on English language. In Pakistan, its importance becomes double because here it has got the status of second language and is being used as a source of communication in almost all public and private organizations. But in Pakistan the standard of English language is not up to the mark. Therefore, it is need of the hour to focus on the development of English language and use some methods in its teaching to uplift its standard.
Research Questions

The following research questions were addressed in this study.

1. Is there any significant difference in English grammar achievement scores of the students taught through cooperative learning and those taught by whole class traditional method?

2. Is there any significant difference in English grammar achievement scores of the male students taught through cooperative learning and those taught by whole class traditional method?

3. Is there any significant difference in English grammar achievement scores of the female students taught through cooperative learning and those taught by whole class traditional method?

Methodology

Research Design

The study was Quasi-experimental. A pre-test - post test Control group design was used. The experiment was lasted for twelve weeks.

Procedures

At the start of the study, pre-test was administered to all the participants of the study. This pre-test focused on student’s knowledge of English grammar (parts of speech and tenses). At last, the same pre-test was given to participants as a post test on the completion of the treatment. The test was lasted for one and half hr.

Implementation of STAD model of cooperative learning

The participants in both control and intervention groups were taught by the researcher himself. The experiment proceeded according to the four components of “STAD” model of cooperative learning i.e. teacher demonstration, team work, individual quiz and team recognition. First of all, the teacher presented the material in the class and discusses it with students for their understanding. Then students went to their teams to work on worksheets given by the teacher relevant to the concept which was taught in the class. The team members worked in teams and helped each other in learning the content assigned to them. Before returning the worksheet, all the team members have to sign the sheet to make it sure that they have learnt the concept and all the answers were given with consensus. After this, students were given quizzes
which they have to do without taking any help from their fellows. At the end, the students corrected their quizzes themselves with the help of the key provided by the teacher. The marks obtained in the quizzes were used to calculate the improvement points by comparing them with base score i.e. past average achievement of each student. The average of improvement points of all team members in a team were taken as team score to recognize it as good, great or supper team. In the whole process the researcher remained in the class to facilitate, guide and help the student if they felt any need.

Sample

The sample of the study comprised of 7th class students of two public schools of Gujranwala city running under the control of Ministry of Labour and Human Resource Punjab. Four intact (as it is) sections were taken from both boys and girls schools. One of the sections from each school was randomly assigned to experimental and control groups. The experimental group consisted of 93 (boys 47 & girls 46) students and control group consisted of 91 (boys 44 & girls 47) students. Three (3) students from each group (control and experimental) did not appear in the post test. So, they were excluded from the study.

Formation of teams

In order to form the teams, the researchers arranged the participants of the experimental groups on the basis of pre-test scores ranking from high to low. Keeping in view the strength of the experimental groups, the researcher decided to have five members in each team. The total number of students in treatment groups was 93 (44 boys + 49 girls). So, the number of teams was nine of boys and ten of girls. Each team had five members but the last teams of both the boys and the girls had four members each.

The researchers formed the heterogeneous teams, consisting of students of high, average and low abilities each. For this purpose, a list of participants of experimental groups was prepared separately for boys and girls on the basis of pre-test score ranking from high to low.

The researcher used the letters A-J as names of teams and formed nine teams for boys and the letters A-K and formed ten teams for girls of experimental groups. The teams were formed in such a way as if the top scorer was in team ‘A’, the least scorer was also in team ‘A’ and if the second top scorer was in team ‘B’, the second least scorer was also in team ‘B’, and so on. This was done to form the teams having mixed ability students.
At the first day of the class, the researchers made the students to practice. During the practice he told them how to sit during the team work. The researchers prepared a work sheet based on the material other than the one which was going to be taught during treatment. He presented the same topic to the learners and then said them to work in teams. After that he conducted a quiz as a practice. During the practice period many questions were raised by the students, were answered by the researchers. He made the students aware of the whole procedure of (SATD) model of cooperating learning. The researcher also told the participants about the calculation of quiz scores and improvement points.

**Research Instrument**

An achievement test was developed and used by the researcher as pre and post test. Pilot testing was conducted to test the reliability of instrument which was 0.89 and calculated through Cronbach Alfa reliability test. Validity of instrument was checked by four English teachers who were teaching at elementary level.

**Findings**

**Table 1**

*Over all comparison of control and experimental groups on pre- test and post test scores*

<table>
<thead>
<tr>
<th></th>
<th>Control (N= 88)</th>
<th>Experimental (N= 90)</th>
<th>t.value</th>
<th>df</th>
<th>p.value</th>
<th>Effect size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-test</td>
<td>22.26</td>
<td>22.37</td>
<td>-0.114</td>
<td>182</td>
<td>.910</td>
<td></td>
</tr>
<tr>
<td>Post-test</td>
<td>30.13</td>
<td>43.55</td>
<td>-12.04</td>
<td>176</td>
<td>.000***</td>
<td>0.45</td>
</tr>
</tbody>
</table>

***P<0.001

In overall comparison of control and experimental groups, no statistical significant difference is observed on pre-test between mean scores of control group (M=22.26, SD=6.89) and experimental group (M=22.37, SD=6.54). The value of t (182) =0.114, p=0.910 is greater than α=0.05 whereas in comparison between the mean scores of control group (M=30.13, SD=789) and experimental group (M=43.55, SD=6.9) statistical significant difference is observed. The value of t (176) =-12.04, p=0.000 is less than α=0.001. The value of effect size was 0.45 which showed large magnitude of increase in achievement of experimental.
Table 2
Comparison of control and experimental groups of male students on pre-test and post-test scores.

<table>
<thead>
<tr>
<th></th>
<th>Control (N= 44)</th>
<th>Experimental (N= 42)</th>
<th>t-value</th>
<th>df</th>
<th>p-value</th>
<th>Effect size</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-test</td>
<td>21.104</td>
<td>5.73</td>
<td>.475</td>
<td>90</td>
<td>.636</td>
<td></td>
</tr>
<tr>
<td>Post-test</td>
<td>29.04</td>
<td>5.53</td>
<td>-7.56</td>
<td>85</td>
<td>.000***</td>
<td>0.40</td>
</tr>
</tbody>
</table>

***p<0.001

In comparison of control and experimental groups of male students, there is no statistical significant difference between mean scores of control group (M=21.10, SD=5.73) and mean scores of experimental group (M=20.54, SD=5.5) on pre-test. The value of t (90) = .475, p=.636 is greater than α=0.05 whereas in comparison of mean scores of control group (M=29.04, SD=6.86) and the mean score of experimental group (M=41.02, SD=6.86) on post test, both the groups are significantly different in their mean scores. The value of t (85) = -7.56, p=0.000 is less than α=0.001. The value of effect size was 0.40 which showed large magnitude of increase in achievement of experimental group.

Table 3
Comparison of control and experimental groups of female students on pre-test and post-test scores.

<table>
<thead>
<tr>
<th></th>
<th>Control (N= 44)</th>
<th>Experimental (N= 47)</th>
<th>t-value</th>
<th>df</th>
<th>p-value</th>
<th>Effect size</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-test</td>
<td>23.55</td>
<td>7.8</td>
<td>-0.299</td>
<td>90</td>
<td>.766</td>
<td></td>
</tr>
<tr>
<td>Post-test</td>
<td>31.27</td>
<td>7.8</td>
<td>-9.73</td>
<td>89</td>
<td>.000***</td>
<td>0.51</td>
</tr>
</tbody>
</table>

***p<0.001

Comparison between control and experimental groups of female students on pre-test scores points out that there have been seen no statistically significant difference between mean scores of control group (M=23.55, SD=7.8) and experimental group (M=22.37, SD=6.54). The value of t (90) = -0.299, p=0.766 is greater than α=0.05. The comparison between control and experimental groups of female students on post test scores shows that there is a significant difference between mean scores of control group (M=31.27, SD=7.8) and experimental group (M=45.77, SD=6.2). The value of t (89) = -9.73, p=0.000 is less than α=0.001. The value of effect size is 0.51 which shows a large magnitude of increase in achievement of the participants of experimental group after treatment.
Results and discussions

In teacher-centered whole class traditional method the students work individually or competitively and generally concerned with improving their own grade and their goals are individualistic rather than group wise. This is in contrast with cooperative learning method of instruction whereby students work together in groups to reach common goals. Within cooperative learning, students benefit from sharing ideas rather than working alone. Students help one another so that all can reach some measure of success. Slavin (1983) said, if there was not group rewards, there was no reason for the group fellows to help each others to increase the learning of their team mates. So far as present research is concerned, the team recognition part of the STAD model of cooperative learning operates as the motivator and provides group rewards. STAD model of cooperative learning gives equal chance of success to all the team members because team recognition is based on the gains of the whole team. The students learning through this model were inclined to add into their own and the learning of their team mates too at the same time. The high ability students in the teams tried to help to the low ability students of their teams to enhance their achievement. On the other hand, the students with low ability did not understand the teacher’s lecture easily because they had not enough language proficiency to understand it. So, they prefer to learn the concepts by their team mates who have high ability. The students feel at ease to be taught from their friends rather their teachers (Krashen, 1981).

Cooperative learning is based on the theory of interactive structures. STAD model of cooperative learning provides variety of interactions which benefit students because language learning is highly interactive process. Carefully structured interactions and the inclusion of reward structure in the form of team recognition contributed to the academic achievement which was observed in the study. This study provided important data on the use of STAD model of cooperative learning method for development of English language at elementary level. In this study, experimental and control groups were taken to compare the effectiveness of cooperative learning method in teaching of English grammar versus teacher- centered whole class traditional method respectively. The groups were compared on pre-test and post test scores to observe the initial difference before the experiment and the effect of cooperative learning STAD model on their achievement after the experiment respectively. The effect size was also calculated to make out the magnitude of increase in the achievement of experimental groups. In overall comparison on pre-test scores of control groups (Mean Score 22.26) and experimental groups (Mean Score 22.37) showed no statistical significance difference as the p.value is greater than 0.05 where as both the groups (Control with Mean Score 30.16 and experimental with
Mean Score 43.55) showed highly significant difference on post-test scores as the p-value is less than 0.001. The effect size was 0.45 which showed a high increase in the achievement of experimental group (Table 1).

In the same way, the control and experimental groups of male and female participants were also compared to find out the gender wise impact of cooperative learning. The male participants of control group (Mean Score 21.104) and experiment group (Mean Score 20.54) did not show significant difference on pre-test scores as the p-value is greater than 0.05. On the other hand, when compared on post-test scores the significant difference was observed between the performance of control group (mean Score 29.04) and experimental group (Mean Score 41.02) as the p-value is less than 0.001. The effect size was 0.40 which showed a high increase in the achievement of experimental group (Table 2).

In the comparison of control group (Mean Score 23.55) and experimental group (Mean Score 24.02) of female students on pre-test scores, no statistical significant difference was found in the achievement of both the groups as the p-value was greater than 0.05. Contrary to this, both the groups (Control with Mean Score 31.27 and experimental with Mean Score 45.77) were significantly different in their performance when compared on post test scores as the p-value was less than 0.001. The effect size was 0.51 which showed a high raise in the achievement of experimental group (Table 3). The above discussed results revealed that the treatment classes outperformed the control classes in learning English grammar through cooperative learning STAD model. The achievement scores of the participants in experimental groups on the post test showed highly significant relationship between STAD model of cooperative learning method and students’ achievements in English grammar. The results of this study are comparable to many other researches which have shown effectiveness of cooperative learning method in developing students’ second language and they said that the cooperative learning occurred in response of the mental activities of the learners rather than the direct transmission of learning material (Erdem, 1993, Brown, 1987, Ghath & Yaghy, 1998, Gomleksz, 2007). The above mentioned results showed that the male and female participants of the treatment groups gave better performance on post test scores when compared separately with their counter parts, the male and female students of control groups, respectively. It means that STAD model of cooperative learning positively affected the achievement of both male and female students. Therefore, we can infer from the results of the study that the cooperative learning method had significant positive effect on academic achievement of the students as a whole as well as the achievement of the male and female students when compared separately.
To sum up, the results of undertaken research study presented the strong evidence for the implementation of cooperative learning method in the English language classes to enhance the standard of English language in Pakistan.

Conclusions and recommendations

The findings obtained from this study revealed that the participants in small cooperative groups got significantly higher scores on achievement test than those who were taught through whole class traditional method. Therefore, on the basis of the results of this study, it is strongly recommended to use STAD model of cooperative learning method to teach English grammar to male and female students in English language classrooms.

It is recommended for the teachers that they must create such a learning environment in English language classrooms where students can work in teams to help one another and at the same time enhance their own knowledge as well.

Furthermore, the teacher who wants to use cooperative learning in their classrooms must organize the teams of heterogeneous students because it will provide big opportunity for peer tutoring. The teacher must play the role of facilitator and help the students when necessary. For the further research in the field of cooperative learning, it is recommended that the researchers may use it in the classes other than the elementary level as well as for other subjects. They may conduct studies to test the other models of cooperative learning instead of STAD.

References


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