

## Effect of Co-Operative Learning Techniques on Students' Academic Achievement at Secondary Level

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### Abstract

The study was experimental in nature. The purpose of the study was to identify the effect of cooperative learning on students' academic achievement at Secondary School level in Govt. Girls Centennial Model School Bannu. Four hundred 10th Class students of Govt. Girls Centennial Model School Bannu were the population of the study and among these 400 students, 100 students were taken as samples which were divided into two strata i.e. 50 students as control group and 50 students as an experimental group respectively. The control group students have been taught English by using traditional method while the experimental group students have been taught by using co-operative learning technique. An achievement test was used to collect data easily. Data was analyzed through Means, Std. Deviation and t-test. The results of the study showed that there is a significant difference between the Means of performances of experimental and control groups on the achievement test for the benefits of experimental group at 0.05 levels.

**Keywords:** Co-operative Learning, Traditional Method, 10th Class students, Academic Achievement, Control & Experimental Groups.

### 1. Introduction

Today's employers suppose employees to have various skills to be able to adjust to different situations and to communicate with diverse people from different cultural backgrounds. For that reason, teaching students how to communicate successfully, cooperate with others and learn self-sufficiently has become the fundamentals of education. Newly-required skills are away from the focus of traditional ways of teaching and learning (e.g., teacher-centered and inactive learning approaches) for the reason that they put emphasis on individual achievement and the transmission of information. Consequently, it seems that there need to be reforms to modify the traditional teaching approach and provide learners with new knowledge and skills. Because of traditional examination-oriented instruction in Pakistan, the process of English teaching is less flexible. Maximum of the teaching in the classroom still put emphasis on teacher-centered, teacher-directed instruction. With a large class in teaching, teachers still make use of the traditional teaching techniques; there is slight interaction among teachers and students. Obviously, the teacher commonly spends a lot of time speaking and explaining curriculum in class. Students are required to sit in their seats passively and listen to the lecture considerably. Students have a habit to memorize English grammar rules, rote vocabulary, and translation skills from the textbooks (Wang, 2001). With the intention of getting good grades in English, the teacher might bring the competition into the classroom. Such a traditional instructional method causes competitive learning and individual performance in the classroom instruction. Conversely, excessive competition might bring negative interdependence and lower the teaching effects. On the other hand, a student-centered method is new. This method drastically changes the structure of the teaching environment in terms of methodology and physical characteristics. (Slavin, 1995). There is a requirement to examine cooperative learning as an instructional approach in a traditional school perspective such as this one based on the supposition that it would promote active learning and meaningful interaction amongst learners. There is no chance for a teacher in traditional learning approaches to give individual attention to entire students. The result is that gap between able and weak students grows. Cooperative learning claims to help the students in such a circumstances. Cooperative learning has been declared as an effective instructional method to tackle these problems. Cooperation means working together to achieve shared goals. Within cooperative circumstances, individuals search for results that are advantageous for all participants of a group. Students work together to get the best out of their own and each other's learning. During the last years, Pakistan has implemented quick reforms in its educational system. Teachers are dedicated to introducing numerous western teaching and learning methods, particularly a student-centered approach and understand these methods as 'standards' for local education reforms. This occurred for the reason that they believe that a student-centered learning approach promises to provide local students with new skills required by the labor market like creativeness, independence, cooperativeness activeness and. In many ways, such advanced methodologies can be considered a fashion. The idea of students learning together, teaching and sharing with one another is fascinating, not only due to the potential for higher achievement proved in prior research from the West (Johnson, Johnson

&Holubec, 1993).

Cooperative learning also integrates language and content learning, and its varied applications are in harmony with the pedagogical implications of the input. This is because CL enhances the motivation and psychosocial adjustment of learners (Dornyei, 1994). English being a foreign language is a challenging subject to teach and learn in Pakistan. Maximum of the students do not achieve the required capability. This problem is more severe in the government schools where English is taught only as a compulsory subject and it is not used as a medium of instruction. In most of the government schools, teacher has to teach huge class in which seventy to eighty students learn together. Cooperative learning method may be used to develop the basic four language skills of the students. Bulk of the teachers in government schools are using traditional individual and competitive learning method with traditional learning group arrangements or lockstep. Therefore the current instructional methods need development in schools predominantly in government schools. The students of large class have to cover the syllabus in a restricted period of time. There is no chance for a teacher in traditional learning method to give specific attention to all the students equally. Many teachers use traditional learning method in Pakistan. This study searches to determine whether cooperative learning techniques or traditional teaching methods can better help school teachers teaching English, and thus bring greater progress. The researcher hopes that the outcomes of this study may help teachers in their English teaching and provide models for upcoming instruction.

## 2. Review of Related Literature

Research on cooperative learning revealed “extremely positive” results and established that cooperative learning techniques are cross-curricular. Cooperative learning necessitates students to play a part in group accomplishments that upsurge learning and progresses other essential dimensions. The positive outcomes consist of: academic achievements develop welcoming associations and increase personal and social development (Brown & Ciuffetelli Parker, 2009). The students who completely contributed in group accomplishments, revealed collaborative behaviors, provided advantageous feedback and cooperated with their group had a higher prospect of getting advanced test marks and course grades at the completion of the semester. Outcomes from (Brady & Tsay’s, 2010) study support the idea that cooperative learning is an dynamic instructional technique that sanctions higher academic achievement. The potential of cooperative learning is perfect to many researchers. The academic and social profits of cooperative learning are internationally recognized (Best & Kahn, 1986). Cooperative learning is the process of achieving knowledge in socially packed atmosphere by one or two minor groups of learners; cooperative learning is a set of approaches and principles for growing learner to learner communication for a collective goal (George, Jacobs & Ward, 2000). Cooperative learning environment represents a situation in which students with common reason in their mind struggle to achieve a joint learning objective.

In additional words a small dedicated group of students learn together and take benefits of one another’s knowledge to be successful (Amita, 2006). Learners grow their critical thinking and intellectual skills by learning from one another (Jbeili, 2003). There are five indispensable additional principles of cooperative learning. Initially, Interdependency among the learners, learning is part and parcel of each other and they learn together, they work in a small group to polish a product together. In another words they benefit from one another’s knowledge. Furthermore, every member of the group is accountable for sharing his/her knowledge with the rest of the group. Thirdly, by means of their collaborative skills to support each other to learn and inspire each other to contribute in problem cooperative learning and solving As such they struggle to upsurge general accomplishments of the group (Negangard & Sue, 1991). Fourthly, equal opportunities for everybody, as a team, all participants are accountable in contributing in the group construction activity and endeavors for its shared attainment. Fifthly, they all learn together, work together and transfer knowledge together. The foremost ambition of cooperative learning is that student’s effort together for common goals and purposes. All work to understand one single purpose that is to help one another by distributing their distinct knowledge and skills (Webb, 2002).

For a complete cooperative learning amongst the students, study found that instructors are responsible for guiding learners to manage their groups accordingly. A teacher should teach learners the procedure of learning together and how to manage group activities (Emmeret al., 2005). In cooperative settings, small groups of students work on a specified mission to trounce their collective weaknesses, build on their strengths and share their experiences with one another to gain knowledge. In a cooperative environment there is a concept called sharing knowledge and authority among the students and teachers (McGrath, 2004). Cooperative environment is non-threatening learning environment where students freely mix with each other without any racial discrimination and share and exchange useful thoughts. This condition is based on a mutual support, respect to one another and to benefit from one another in a friendly and professional manner; the first premise underlying cooperative learning is respect for students regardless of their ethnic, intellectual, educational, or social backgrounds and a belief in their potential for academic success and all students need to learn and work in environments where their individual strengths are recognized and individual needs are addressed. All students

need to learn within a supportive community in order to feel safe enough to take risks (Barbara, 2002). Cooperative learning promotes a shared sense of community. Learning, like living, is inherently social. This approach offers students support and encouragement through systematic classroom interactions. An intellectual synergy develops, and positive relationships typically emerge". Cooperative learning is promising.

The promise is to encourage students to learn actively and constructively. In a cooperative atmosphere the role of teachers is different as they assist learners like midwives to give birth to their healthy ideas and constructive thoughts (George, Jacobs & Ward, 2000). As they interact with each other, they learn more in the process. They soon discover the significance of student-student communication. Research indicated that cooperative learning reduces misbehavior in the classroom leaving more time for academic instructions and student growth (Baltes et al., 2000). As such learners soon discover themselves in a highly motivated and friendly community: Cooperative learning methods are usually equally effective for all ability levels; Cooperative learning is affective for all ethnic groups; Student perceptions of one another are enhanced when given the opportunity to work with one another; Cooperative learning increases self-esteem and self-concept; and Ethnic and physically/mentally handicapped barriers are broken down allowing for positive interactions and friendships to occur.

#### Class Activities to Promote Cooperative Learning

(Naested et al., 2004) described class activities by keeping in view the following points:

1. Jigsaw Students are assigned to five heterogeneous or home groups. Each group has the same number of people. Each member of the group becomes an expert on a subtopic which they must represent, investigate, or read about. They then meet with their other group members who are responsible for the subtopic in other groups. They become a new group to discuss their subtopic and then following discussion they rejoin their original groups and share what they have learned.
2. Think-Pair-Share The instructor poses a question to the class. The students think about the question individually and then they share with a 24 Journal of Business Administration and Education partner. Once they have shared with their partner they then share their thoughts with a small group of 4-6 members.
3. Group Investigation Students are required to gather data, interpret the data through discussion, and synthesize individual contributions into a group project. GI promotes higher-order thinking skills and is effective for high school classrooms (Brown & Ciuffetelli Parker, 2009).
4. Literature Circles Students are assigned to small, collaborative reading groups, which provide designated roles for each member. Each student assumes a shared responsibility for their learning, which is guided and supported by the teacher. Roles include; summarizer, discussion leader, word wizard, and illustrator.

### 3. Main Objective of the Study

"To make comparative analysis of the effect of co-operative learning techniques and traditional method of teaching on student s' achievement in the subject of English at secondary level" was the main objective of the study.

### 4. Hypothesis of the Study

The following hypotheses were tested in this study:

- HO1. There is no significant difference between the mean scores of experimental and control group on pre-test.
- HO 2. There is no significant difference between the mean scores of Experimental Control groups on post-test.

### 5. Research Methodology

In this study Pre-test Post-test equivalent group design was used This design may be represented as (Best, Kahn, 1986, P.127). In this design, Pre-test was administered before the application of the experimental and control treatments and post-tests at the end of the treatment period. A technique of cooperative learning (STAD) (adopted from Slavin, 1995, P.131) was selected as the form of intervention in this study for the reason that it includes all the cooperative learning elements of heterogeneous grouping, positive interdependence, individual accountability, social and collaborative skills, and group processing. The aim of this study was to evaluate the effectiveness of "cooperative learning method" versus "traditional learning method". Therefore, students studying at elementary level constituted the population of study.

### 6. Sample of the Study

Sample of the study consisted of 100 students of 10th classes of Government Centennial Model School Bannu. Their ages ranged from 15 to 16 years. The participants were selected from that school which represents population of typical government schools in Pakistan i.e. spacious rooms, large classes, and students of diverse socio-economic status. The experimental group comprised 50 participants who studied together in twelve teams

of four members each according to the dynamics of cooperative learning. Meanwhile, 50 participants in the control group studied the same material with traditional learning method. All students were randomly selected from all two sections of 10th class of the school. These students were divided into two groups of experimental and control group on the basis of result of pre-test score. The score of the test was used to equate the groups i.e. each student of experimental group was equated with the parallel student in the control group. Students were randomly assigned to control and experimental groups. In order to equate the experimental and control groups, a teacher made pre-test was administered before the allocation of students to control and experimental groups. Soon after the treatment was ended, a teacher-made posttest was managed to subjects of both the control and experimental groups. The purpose of this test was to measure the attainment of the students' establishing the sample. Pretest and posttest were made by the researcher subsequently a review of the techniques of test construction. The total sample was 100, which was separated into two groups (i.e. control and experimental) of 50 students respectively. The two same groups were formed in such a way that average score of the students of two groups were nearly equal. One and the same condition for both the groups were established. All factors of the time of day and treatment span in time were equated. Subject of both groups was instructed by the same teacher. Same material was taught to both the groups. The study continued for 30 days with daily period of 40 minutes. Experimental group was taught by means of cooperative learning and control group was taught by consuming traditional learning. One teacher, who agreed to teach control and experimental groups, was trained by researcher and experts of English subject. This teacher was trained to utilize cooperative learning method. This teacher was teaching class using traditional method. Similar teacher was selected to teach both the groups to evade the potential factor.

## 7. Instrumentation

With the purpose of equating the control and experimental groups, a teacher made pre-test was managed before the allocation of students to experimental and control groups. Soon after the treatment was finished, a teacher-made posttest was directed to subjects of both the control and experimental groups. The purpose of this test was to measure the achievement of the students' establishing the sample. Pretest and posttest were made by the researcher subsequently a review of the techniques of test construction. Experts and class teachers were involved in the construction of tests. Both the pretest and posttest were similar but their arrangements of items were altered in posttest. The split half method (odd-even) was used to test the reliability of posttest scores gained by 25 students who did not form the sample of the study. Spearman – Brown prophecy formula was used to evaluate the reliability for the whole test from the acquired correlation between the two half tests. Pre-test and post-test were same but arrangements of items were changed. Validity of the tests was appraised by a committee which comprised of experts in English subject and education subject. Cooperative learning technique (STAD) student team achievement division was used. Training was provided to one teacher who was selected from Government Centennial Model School Bannu. She was provided 15 days training in cooperative learning i.e. Ten days for practical teaching five days for theory. Comprehensive instructions were given by researcher in three capacities of class preparation, quiz and presentation, group formation. STAD contains of six major constituents – preparation, presentation and practice in teams, individual improvement scores, quizzes and team recognition.

Traditional learning focused on the same lessons and material in keeping with the instructional procedures (activities) proposed on the textbook. These processes were prearranged into three stages: opening instruction, participation, and closure. These stages provided chances for working on various purposes in reading writing skills, using a wide range of instructional techniques such as whole class, , question and answer, discussion, lecture and traditional groups.

## 8. Data Collection

Two different treatment patterns were applied during the experiment. Lesson plans of both the groups addressed the alike instructional objectives. However, the experimental plans delivered opportunities for small-group interaction and sharing resources amongst team participants. On the other hand, students in control group functioned individually and shared their answers with the class. Worksheets were delivered to both the groups except for the control group which was provided with traditional routine situation in the classroom while experimental group was provided with cooperative learning method (STAD) as treatment. The experiment lasted for 30 days. Almost immediately after the treatment was over, posttest was managed to measure the achievement of the sample subjects. Pretest scores of the sample helped as data to compare the control and experimental groups, while posttest scores worked as data to measure achievement of the students as an outcome of treatment. With the purpose of testing the hypothesis, the appropriate data was analyzed. Mean, Standard deviation and difference of means were computed for both group. T-test was applied to measure the significance of the difference between the mean of the two groups. Significance of difference between the means scores of both the experimental control and groups on the variable of pretest and posttest scores was tested at 0.05 level by applying t-test. Raw scores obtained from pre-test and posttests were presented in tabulator form for the purpose



of interpretation.

## 9. Results

The results on post-test on experimental and control groups are as under:

**Table 1: There is No Significant Difference between the Mean Scores of Experimental and Control Group on Pre-Test**

Group	No. of Students	Mean	S.D	T-Value	df	Sig(2-tailed)
Control	50	15.06	9.42	16.17	98	.234
Experimental	50	14.48	9.03			

Not Significant at 0.05

Table 1 show that the independent-sample t-test was conducted to make a comparison between experimental and control group students on pre-test. The students of both groups scored pre-test mean of 15.06 (SD = 9.42) and 14.48(SD = 9.03) respectively. The difference between these two post-test means was non-significant  $t(98) = 16.17, p > 0.234$ , which revealed that the control and experimental group students' score on pretest were almost equivalent.

**Table 2: There is No Significant Difference between the Mean Scores of Experimental and Control Groups on Post-Test.**

Group	No. of Students	Mean	S.D	T-Value	df	Sig(2-tailed)
Control	50	24.90	8.10	26.89	98	.000
Experimental	50	35.52	6.13			

Significant at 0.05

Table 2 shows that independent-sample t-test was conducted in comparing the academic achievement of the two groups. The post-test mean scores of students for the experimental group taught by the cooperative learning was 35.52 (SD = 6.13), and that for the control group taught by the conventional teaching was 24.90 (SD= 8.10), that the mean for the experimental group (M = 35.52) was greater than that for the control group (M = 24.90). The difference between these two post-test mean scores was significant  $t(98) = 26.89, p < 0.05$  in favour of the experimental group, which revealed that the performance of experimental group was significantly better than control group. As such, cooperative learning positively affects students' academic achievement.

## 10. Conclusions

The following conclusions were drawn in the light of statistical analysis and the findings of the study:

1. Overall, cooperative learning is more effective as a teaching learning technique for congested class of English at Secondary level.
2. Students in cooperative groups have significant supremacy in learning over students learning by traditional method

Significant differences in students' academic achievement towards English were found between control and experimental groups. Subsequently the treatment was over, experimental group students exhibited significant development in achievement towards English in contrast to control group students. It was found that students' performance in English was affected by exposure to the cooperative learning. Students appear to prefer learning English by sharing knowledge. They feel pleased when they can function efficiently in the group work. It is expected that the findings of this study may help teachers and policymakers to identify suitable measures that could encourage cooperative learning in English classrooms. The consequences of the study might also advance understanding on practical involvement of cooperative learning.

Mostly, the findings of this study have revealed a great progress in students' achievement towards English. Therefore, cooperative learning can be effectively used to endorse student' performance in English in secondary schools in Pakistan. Upcoming research should emphasis on the longitudinal study of cooperative learning on academic achievement in different disciplines.

## 11. Discussion

Findings from this study point out that cooperative learning has significant effect on students' performance in English. The experimental group demonstrated significant progress in students' achievement towards English in contrast to control group. The result proposes that the increase of the students' achievement in English post-test mean scores for the experimental group was owing to the momentous effects of cooperative learning. The teacher must be conversant with instructional skills in the up-to-date English teaching situation. Consequently, schools should set up workshop for pedagogical interactions to consult each other, to share teaching experiences, to express their problems and to brainstorm instructional techniques in order to endorse teachers' professional development. It is also recommended that the teacher should have to train the leader of the class to assist reduce teachers' burden in class. Teachers should exercise every kind of method in the CL. It is recommended that the teacher can revise approaches at any time to discover the most effective and suitable methods based on students'

learning traits to make students improve learning interest and to reach the super achievement. Teachers are organizers facilitators and evaluators. Getting rid of the problems amongst CL and traditional teaching techniques and adopting proper teaching method is the English teachers' task. To sum up, the teachers who are eager to implement the new, ideal approaches in our global society should be equipped, patient, skillful, flexible and perseverant through lots of practice and trials and to reach teaching goals in current society.

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