

An Innovative Collaborative Group Learning Strategy for Improving Learning Achievement of Slow Learners

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Abstract: This paper reports about an innovative collaborative group learning strategy for improving learning achievement of slow learners at secondary school level. The paper highlights that all students are unable to be competent in their learning achievement mainly because of diverse social and mental factors. There are some slow learners in each class due to cognitive differences among students. For present study, the researchers developed an innovative learning plan based on collaborative learning strategy to enhance the learning achievement of slow learners. The analysis showed significant differences in performance of slow learners in their final term examination where they obtained good marks as compared to their mid term /December term examination. The study also reflects that in this process, the slow learners comprehend the concepts and their learning achievement improved when they were provided learning opportunities in collaborative peer groups' leaders. The findings have implications for improving the situation of learning achievement of slow learners through this strategy. The outcome of research shows that this strategy can also be implemented in diverse learning groups.

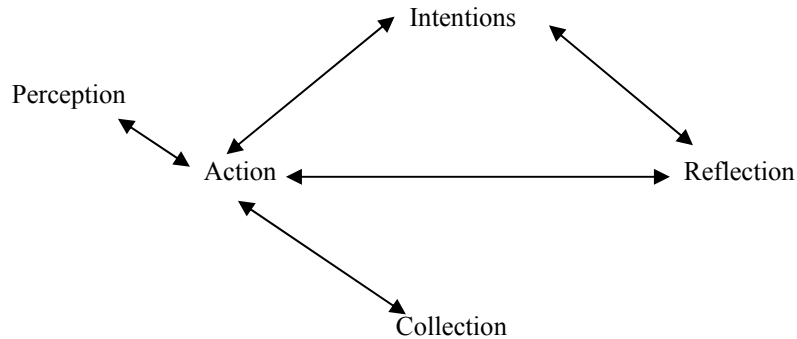
Keywords: slow learners, learning achievement, collaborative learning strategy, secondary school level, course revision.

Introduction

Students' learning achievement is one of the major goals of schools. It is a common knowledge that students learn best when they are actively involved in the process of learning and there are opportunities for interaction among themselves. This view is also supported by Barbara (1993) as she describes that regardless of the subject matter, students working in small groups tend to learn more of what is taught and retain that longer than when the same content is presented in other instructional formats.

Learning is an interaction with some idea, skill, information or attitude. Jonassen (2004) describes that learning requires practice. But practice alone is insufficient for meaningful learning and problems solving. Meaningful learning includes reciprocal

intention-action-reflection cycles. Jonassen (2004) explains cycles below:



Needles to say that the interaction among students can be of many kinds. For example the teacher may set them to work in groups made by the teacher him/herself on learning task. Or the teacher may group low achiever student(s) with some high achiever(s) and thus can instruct high achiever(s) to discuss the issue with low achiever(s). Barbara (1993) explains that: ‘Various names have been given to this type of interaction like cooperative learning, collaborative learning, collective learning, teaching communities, peer teaching, peer learning, reciprocal learning, team learning, study circles, study groups, and work groups.’

Gokhale (1995) reveals that the concept of collaborative learning, the grouping and pairing of students for the purpose of achieving an academic goal has been widely researched and advocated throughout the professional literature. The term ‘collaborative learning’ refers to an instruction method in which students at various performance levels work together in small groups toward a common goal. The students are responsible for one another’s learning as well as their own. Thus, the success of one student helps other students to be successful.’

As students in their peer group assist each other in learning tasks, therefore, it is better to call such type of students peer interaction as peer assisted learning strategy (PALS).

PALS combines peer tutoring with instructional principles and practices. Teachers identify and pair children who require help with specific skills (‘players’) with children who are the most appropriate to help other children learn those skills (‘coaches’).

In this process, the pairs of students are changed regularly, and over a period of time students work on a variety of skills so that all students have the opportunity to be ‘coaches’ and ‘players’. The PALS peer-tutoring strategy enables teachers to circulate around the classroom and observe students, providing feedback and remedial lessons where necessary (May12, 2010).

Research findings show that students significantly learnt better in PALS (Fuchs et. al. 1995, 1997; Calhoon et. al. 2003). Low-performing students in the PALS group particularly experience significant improvements (Mathes et. al. 1998; Mathes and Babyak’s 2001). Furthermore, when students are provided opportunities in their class for combined group work, they are please and contented (Collier 1980; Kohn 1986; Whitman 1988; Johnson and Johnson, and Smith 1989; Beckman 1990; Chickering and Gamson 1991).

Collaborative learning is a strategy in which students learn in small groups in which they interact within their group and learn from each other’s experiences. Johnson (2002) highlights the advantages of collaborative learning and in his view, by working together, the members of small groups are able to overcome obstacles, act independently and responsibly, rely on the talent of team members, trust others, speak up, and make decisions.

Arends (2000) views that it is important to provide learning tasks that students have value for and have a high chance of completing that successfully. Totten, Sills, Digby and Russ (1991) verify that shared learning gives students an opportunity to engage in discussion, take responsibility for their own learning, and thus become critical thinkers. Schmuck and Schmuck (1997) illustrate advantages of students groups under following headings:

- a. Facilitating group inclusion and psychological membership: Students seek a niche for themselves in the peer group.
- b. Establishing rules and routines: Group members are very concerned about what is expected of them.
- c. Establishing shared influence and collaboration: One group tests the authority of the teacher; the other group establishes the peer pecking order.

- d. Pursuing individual and academic goals: The classroom enters a stage of development for working productively on academic goals.
- e. Accomplishing self-renewal, transition and closure: The members can think about their continuous growth and taking on new and more challenging tasks.

It is noteworthy that students' learning is more productive and meaningful when they are actively involved in learning tasks in groups. Chickering and Gamson (1991) and Cooper and his colleagues (1990) agree that students who work in collaborative groups also appear more satisfied with their classes. In his research, Gokhle (1995) concludes that for collaborative learning to be effective, the instructor must view teaching as a process of developing and enhancing students' ability to learn. The instructor's role is not to transmit information, but to serve as a facilitator for learning. This involves creating and managing meaningful learning experiences and stimulating students' thinking through real world problems.

Formation of Groups

Although students may be assigned to groups randomly, but the best way for group formation is to give students freedom in selection of small group of their own choice. The teacher should inform students about the number of students in each group. The ideal number per group may be from three to five members in each group. Following points are also important in this regard.

- Keep the groups at three students: it is hard to be a shirker in a small group.
- Make it clear that each group must find its own way to handle unproductive group behavior.
- By majority vote, allow the group(s) to dismiss a member who is not carrying a fair share. Students who are dropped from a group must persuade the group to reconsider, find acceptance in another group, or take a failing grade for the project.
- Perhaps the best way to assure comparable effort among all group members is to design activities in which there is a clear division of labor and each student must contribute if the group is to reach its goal (Davis, 1993).

In classroom environment the teacher should give students freedom in selecting the group of their own choice. When students are member of group of their choice, definitely they take interest in learning tasks and perform better. Walvoord (1986) also observes that self-selected groups seem to work best in small classes. According to Rau and Heyl (1990) smaller groups (of three) contain less diversity; and may lack divergent thinking styles and varied expertise that help to animate collective decision-making. Conversely, in larger groups it is difficult to ensure that all members participate.

Some teachers prefer to form the groups themselves, taking into account students' prior achievement, and levels of preparation, work habits, ethnicity, and gender (Connery, 1988). The teacher should also develop some rules and regulation regarding working of groups. There must be rules about the strength of group members. In general, groups of four or five members work best (Barbara, 1993).

There should be small group for less skillful members, and if the time is short for activity then also smaller group may be formed. Shorter the available time, smaller the groups should be (Cooper, 1990; Johnson, Johnson, and Smith, 1991). The teacher should inform students about the working procedure of the group and should regularly observe their performance. Walvoord (1986) suggests that the best way to assure comparable effort among all group members is to design activities in which there is a clear division of labor and each student must contribute if the group is to reach its goal. Rau and Heyl (1990) suggest that at the end of each group task, there should be an evaluation to check the effectiveness and progress.

In this process, teachers can apply various techniques for improving students' learning. Researchers are also in search of introducing new methods of teaching and learning. With their main focus on the analysis of theoretical and empirical aspects, several studies have been conducted in this regard. Similarly, some case studies are also conducted to establish the cause and effect of various factors in this area. The important advantages of such studies are that they attempt to explore various dimensions of different determinants related to cause and effects (Cohen & et. al., 2000). As cited in Cohen et. al. (2000), Hitchcock and Hughes (1995) state that case studies are distinguishing less by methodologies that they employ than by the subjects and/or objects of their inquiry.

In the same context, Sansalone (1989) is of the opinion that when students work in groups, there develops an atmosphere of competition among groups and they try to perform better than their peer members. Cooper and Associates (1990) reveal that peer group learning is helpful in promoting creativity of skills and abilities. Toppins (1989) and Hendrickson (1990) declare that students enjoy collaborative test taking.

Background and Framework of the Problem

Teachers under the guidance of their principals put a lot of efforts in achieving the learning of students as the major goal of the school. The whole teaching learning process revolves around to improve or maximize students' learning. It is a fact that all students do not learn at same level due to certain cognitive, physical, social and psychological differences. In recent times students' learning has been given so much importance and it is considered as the task of the teachers to engage learner and to bring improvement in learner's learning. In this respect it is said that 'if the junior (student) has failed to learnt, it means that the senior (teacher) has failed to teach.' This shows that the teacher has to take on the responsibility of students' learning. The research studies conducted on the effectiveness of collaborative/ cooperative peer group learning make it apparent that:

- i) students' learning achievement performance becomes better;
- ii) they feel satisfy in their learning tasks;
- iii) their thinking power becomes active;
- iv) they can solve their problems; and,
- v) they share their learning difficulties with their peer group members when they are provided opportunities to work in groups.

In the above perspective, it is noteworthy that respective studies have provided the researcher a solid ground to plan an innovative strategy based on collaborative group learning techniques for bringing improvement in students' learning achievement of slow learners by providing them opportunities for concept comprehension and course revision with the help of their peer groups leaders.

Needless to say that students, teachers, principals and parents, all want good learning achievement. Therefore, the major task of every school is to maximize students' learning so that they can be promoted to next grade. For this reason, the effectiveness of a

school is measured from its students' learning achievement. The trend about teacher's success has been changed from how well the teacher has taught and performed within the classroom towards how well the learners have learnt for the teacher's teaching method.

There are research evidences to believe the nature of teacher-students interaction and students to students' interaction in learning tasks leaves positive affect on students learning achievement. Obviously all students are unable to make progress on the same level due to multiple differences within students and the major among them are cognitive difference. High achievers always perform well where as slow learners' lag behind.

Statement of the Problem

Keeping in view the situation, the authors of this paper designed an innovative plan of learning based on collaborative learning group, i.e., peer group strategy for improving learning achievement of slow learners with the assistance of their peer group leaders with in class environment. Therefore, the problem under investigation was to examine the effectiveness of collaborative peer group leaders' learning strategy for improving learning achievement of slow learners.

Operational Definition

The students who score less than 40 percent marks in English, General Science and Mathematics in their mid term examination were termed as slow learners.

Objectives

The present study was designed to achieve the following objectives:

- i) To measure learning achievement differences of mid term and final term results of slow learners' while learning within collaborative peer leaders' group strategy, where they learn and discuss their learning difficulties with their peer group leader.
- ii) To explore the effectiveness of collaborative peer group leaders involvement in course revision.

Null Hypothesis of the Study

Following hypothesis was developed keeping in view the objectives of the study:

- i) There is no difference between learning achievement of slow learners of mid-term result and final term result while learning within collaborative peer leaders' group strategy where they learn and discuss their learning difficulties with their peer group leader.
- ii) It is not an effective way to revise course through collaborative peer group leaders' involvement.

Delimitation of the case study

The present study was delimited to following factors:

- i) To get data from female public sector school only.
- ii) To include only slow learners of grade 9th Liaqat section (name of class) of humanities group who obtained less than 40 percent marks in English, Mathematics and General Science in mid-term (December test) examination.
- iii) To improving learning achievement of slow learners to the extent that they are able to pass the final term examination (conducted in the month of March).
- iv) To develop plan for improving slow learners' - learning through involvement of subject teacher of concerned subject and the group leaders.
- v) To design rules for formation of groups and nomination of group leaders for each group and informing them about their targets and duties as group leader.

Population and Sample of the Study

All female studying in grade 9 were the population of the study. The data for the study was obtained through convenient sampling technique from Government Girls Secondary School Isa Khel (District of Mianwali). All students obtained less than 40 percent marks in mid-term examination in English, Mathematics and General Science were the sample of the study. It was considered as representative sample as it was one of the public sector school of the district.

Procedure of the Study

The present study was conducted with purpose of improving learning achievement of slow learner of a female secondary level within collaborative peer group leaders' learning

strategy.

Subject Teachers' Meetings

The principal called meeting of subject teachers of English, Mathematics and General Science of grade 9th Liaqat section and informed about her objective of improving slow learners' learning achievement through innovative collaborative peer group by involving peer group leaders. The principal asked each subject teacher of grade 9th Liaqat section to prepare a list of learners who scored less than 40 percent in their December term examination. The parents' of these selected slow learners were called for a meeting to inform them about the innovative learning strategy and about the whole process of treatment for improving slow learners' learning achievement. Parents were requested for full cooperation in sending their daughters regularly to school so that plan treatment schedule might not be affected due to any students' absence.

The teachers as well as parents encouraged by the principals' efforts for brining improvement in slow learners' learning achievement. Subsequently, the plan was developed on the sound foundations that students shared their learning problem and difficulties easily with their peer group leaders and with other members. Slow learners had appreciation and trust on high achievers as being their classmate and age fellow. For the implementation of this strategy, first of all students groups in grade 9 Liaqat section were formulated and the teacher selected the group leaders. The criteria of group leaders selection was that she must have achieved at lest 85+ percent marks in her mid term examination in English, Mathematics and General Science and she must have score more than 80+ percent attendances up to mid-term examination.

There were three members in each group including a group leader. It is noteworthy that by keeping the groups to the size of three students; it is hard to be a shirker in a small group (Barbara 1993). Therefore, in general, a group of four or five members works better than the group in which there are only three members (Barbara, 1993). Similarly, as is mentioned above that shorter the amount of time available, smaller the groups should be (Cooper, 1990; Johnson, Johnson, and Smith, 1991).

During the course of the present study, before handing over the charge of slow learners to higher achiever, the teacher told group leaders of some principles and ways

for dealing with slow learners such as taking care of their self-esteem, motivating them for high performance, considering their learning difficulties, explaining concepts in easy way, raising their confidence by encouraging them and persuading them for better performance and making them regular in their attendance.

The respective teacher made the group leaders of each group responsible for understanding of learning difficulties of slow learners that they discussed with their group leader and help in revision and comprehension of course content that was daily assigned by the teacher. The subject teachers checked and evaluated slow learners' as well group leader's progress in learning task assigned to them. Rau and Heyl (1990) suggest that at the end of each task or project, there should be an evaluation to check the effectiveness and progress of each group. The subject teachers guided and encouraged slow learners on their time to time performance and guided group leader about cool and encouraging behavior with slow learners.

As the syllabus had been covered since mid of December, therefore, in the following two months, the group leaders were given the task for revision and comprehension of course content by involving with slow learners and understanding their difficulties in friendly environment by consulting with the respective subject teachers.

Execution and Monitoring of Learning Plan

Slavin (1989) suggests that for effective collaborative learning, there must be 'group goals' and 'individual accountability.' This plan was fully introduced, implemented and monitor by the respective principal from time to time. Respective subject teachers got guidance from the principal if they found any difficulty. It was observed during this study that sometimes, due to their lack of confidence, some slow learners were unable to convey learning difficulties to their teacher. Even if few of them were able to convey their message to the teacher, they were unable to discuss and explain the exact nature of respective difficulties. However, in contrast, with their peer group leaders, slow learners were at ease to describe their learning problems and difficulties.

During the present study, the principal personally observed and assessed the performance of group leaders and slow learners. Wherever it was necessary, she made amendments and where progress was satisfactory, she encouraged the group leader, slow learners and respective teachers. In this process, the group leaders gave confidence to

slow learners by telling and sharing everything with them. On the other hand, the teacher daily rechecked the work done under guidance of the high achiever student leader. There was also a hierarchy of encouragement and motivation, where the principal first encouraged and motivated teachers for improving learning of slow learners, then teachers motivated group leaders as well as slow learners and finally group leaders encouraged slow learners. Respective subject teachers through formative evaluation (class tests, quiz) checked slow learners' performance in their respective subjects, and they made amendments accordingly.

After two month treatment, that was revision of respective subjects syllabus with the help of high achievers group leaders; the slow learners appeared in their regular final term examination along with other class mates including their group leaders. At the end of the exam, the papers of slow learners were separated from other students and their results were provided to the principal who further analyzed the results by using statistical package for social sciences (SPSS-16) through paired sample T-test. As the comparison of students' achievement in certain subjects was carried out, therefore, pairs were formed in subject on the bases of students' performance in mid-term (December test) and final term examination. This detail is described in the following table:

Table 1: Monitoring of Learning Plan

Pair Name	Learning Achievement as Checked in Examination	Subject in which learning Achievement was Checked
Pair 1	Mid term	English
	Final term	English
Pair 2	Mid term	Mathematics
	Final term	Mathematics
Pair 3	Mid term	General science
	Final term	General science

Analysis of Data, Conclusion and Study Evidences

The details of data analysis of the study, its conclusions and evidences are given in table 2. The table presents results of testing null hypotheses No. 1 and No. 2.

- i) There is no difference between learning achievement of slow learners of mid-term result and final-term result while learning within collaborative peer leaders'

group strategy where they learn and discuss their learning difficulties with their peer group leader.

- ii) It is not an effective way to revise course through collaborative peer group leaders' involvement.

Table 2: Testing of Hypotheses

Pair	Examination	Subject	N	Mean	t	df	Sig.
Pair 1	Mid term	English	22	18.82	-17.014	21	.00
	Final term	English	22	51.82		21	.00
Pair 2	Mid term	Mathematics	22	21.36	-11.527	21	.00
	Final term	Mathematics	22	50.23		21	.00
Pair 3	Mid term	General science	22	18.55	-12.705	21	.00
	Final term	General science	22	49.68		21	.00

Level of significance at 0.05.

Interpretation of Results

Table 2 depicts a complete picture of comparison of slow learners' results in mid-term and final-term examination. It explains t value (-17.014) for the subject of English which is significant at 0.05 level of significance. For Mathematics, t value is also significant at 0.05 level of significance that is -11.527, and for the subject of General Science, it is -12.705, which also significant at 0.05 level of significance. Therefore, the of hypothesis stating that there is no difference between learning achievement of slow learners of mid-term result and final-term result while learning within collaborative peer leaders' group strategy where they learn and discuss their learning difficulties with their peer group leader is rejected and an alternative hypothesis was adopted that there is significant difference between learning achievement of slow learners of mid-term result and final-term result while learning within collaborative peer leaders' group strategy where they learn and discuss their learning difficulties with their peer group leader.

Slow learners significantly perform well and gain higher mean score in final term in English (51.82), Mathematics (50.23) and in General Science (49.68) as compare to their mean score in mid term as it can be observed in above table. Therefore, the

hypothesis stating that it is not an effective way to revise course through collaborative peer group leaders' involvement is hereby rejected and an alternative hypothesis was adopted that it is an effective way to revise course through collaborative peer group leaders' involvement. It is also obvious that slow learners gained higher mean score in the subjects of English, Mathematics or General Science. This difference may be due to variable of teachers, content teaching, methodology, or interest of students, both slow learners and their peer group leaders in the subject of English.

Discussions

Collaborative learning strategy arranged for small peer groups is conducive for better learning achievement of slow learners as they build an atmosphere where they overcome their learning difficulties, learn independently in trustworthy environment where they have confidence on their peer group leaders. Therefore, slow learners learning achievement improves significantly and they are able solve their learning problems (Sansalone, 1989). It was concluded that collaborative peer group leader learning strategy provides that opportunities to discuss freely their learning difficulties with their peer group leaders in a friendly environment. Being age fellow and class fellow, slow learners describe freely and easily their learning difficulties with their peer leaders and peer group leaders having more frankness with slow learners as their class mate help them according to their own understating level and explain concepts for slow learners in an easy way that is approachable for them. Therefore, slow learners significantly performed better when provided opportunities for collaborative peer group learning.

It is important to mention here that the findings of the present study are also consistent with Walvoord (1986), Sansalone (1989), Cooper and Associates (1990), Totten, Sills Digby and Russ (1991), Fuchs et. al. (1997), Mathes and et. al. (1998), Calhoon et. al. (2003), Arends (2000), Mathes and Babyak's (2001), Johnson (2002), Jonassen (2004), Collier (1980), Kohn (1986), Whitman (1988), Johnson and Johnson, and Smith (1989), Beckman (1990), Chickering and Gamson (1991), Toppins (1989) and Hendrickson (1990). They also verify that shared learning gives students an opportunity to engage in discussion, take responsibility for their own learning, and thus become critical thinkers. Students followed rules set by their teacher on behalf of the

principal and every member had concerned about rules and the stress was on achievement of academic goals (Schmuck & Schmuck (1997).

Chickering and Gamson (1991), and Cooper and Associates (1990) agree that students who work in collaborative groups also appear more satisfied with their classes. The findings of the current study also tally with Anuradha Gokhle (1995) who concludes that for collaborative learning to be effective, the instructor must view teaching as a process of developing and enhancing students' ability to learn. The instructor's role is not to transmit information, but to serve as a facilitator for learning. Secondly the involvement of peer group leaders in the level of course revision proved a best strategy. When the target course is finished then it can be revised by involving high achievers as peer group leaders for improving learning of slow learners so through collaborative efforts of the teacher and peer group leaders (i.e., high achievers), slow learners are able to perform better for their promotion into next grade.

Implications and Recommendations

The findings of the present study have particular implications in the field of instruction and learning for improvement of slow learners at any level through this strategy. The involvement of peer group leaders in collaborative learning strategy is helpful in improving learning achievement of slow learners, as it is considered the best strategy for course revision. At the same time, it has implication to be implemented in diverse learning groups. The teachers may adopt collaborative group leaders learning strategy (CGLLS) for bringing improvement in learning achievement of slow learners' learning in all subjects.

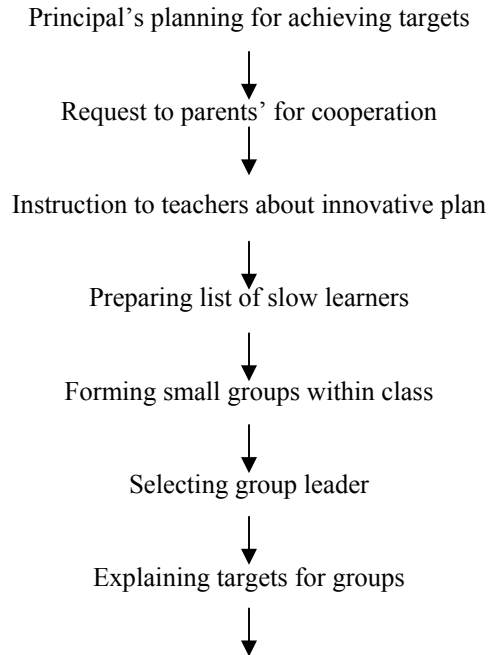
The teachers can further modify the suggested strategy and can observe its affects. Peer group leaders help slow learners in revision of their course content, therefore, future study may be carried out to measure peer group leaders (high achievers') learning improvement. Due to shortage of time, it was not possible for researcher to include learning achievement of high learners as well. The school administrators can develop and implement strategies for promotion of peer group interaction within classroom environment.

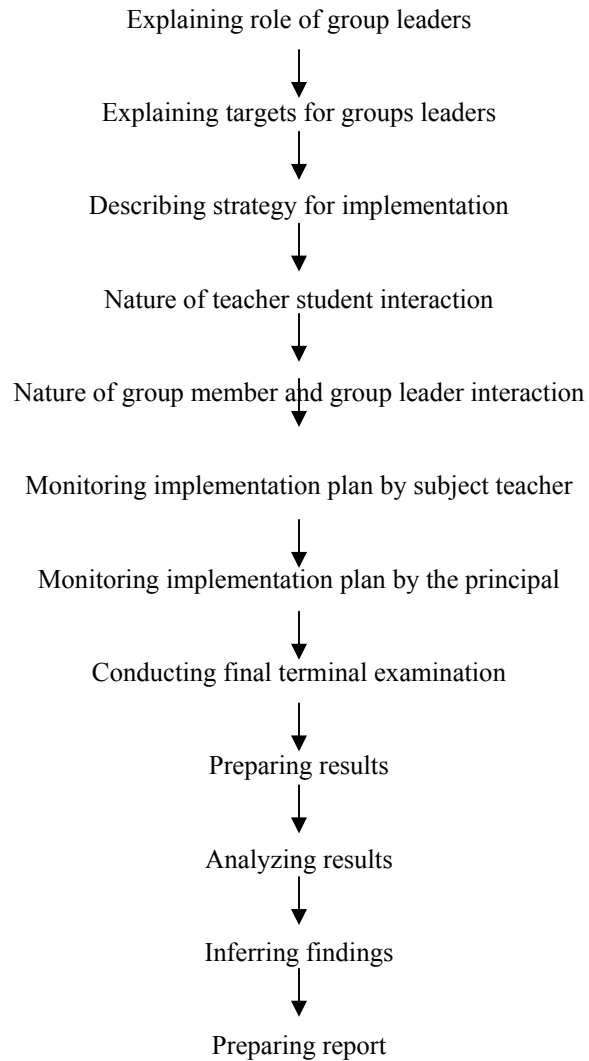
Collaborative learning through peer group leaders proves to be an effective learning process and thus it can enhance learning ability of slow learners. It provide

students opportunities for relating their learning to real world problems and it give every student a chance to make progress and learn according to his/her own specific learning style.

As the present study was conducted within a female secondary school, there is a need to conduct further research with larger sample and larger framework involving male secondary schools. The proposed research may be planned to compare learning achievement of male and female slow learners. Furthermore, investigation may be carried out among groups of students having diverse backgrounds, at primary, secondary and higher level of education for collaborative learning environment.

Hierarchy of Major Steps in Collaborative Peer Group Leader Learning Strategy





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