

## Collaboration in Secondary School Classroom

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### ABSTRACT

Collaboration and group work has a positive effect on the social and cognitive development of students. There is a need to understand the practices of collaborative learning to successfully create authentic student centered and collaborative learning environment. The study focused on identifying the factors that underlined the positive outcomes of collaborative learning and the impact of collaborative environment on students' participation in a secondary school classroom. Primary data was collected directly through questionnaires given out to secondary level students in two branches of the same school in Islamabad. Questionnaire given out to students focused on their perception of collaborative learning in classroom and how it affects their learning and participation. The study uses descriptive analysis to identify the factors that have an impact on student learning when using collaboration. The students in their responses have highlighted that even when they understand the effectiveness of collaboration, there are gaps in use of collaborative strategies in the class. The research has helped in accentuating the complexities of the practice of collaboration and emphasizes a need to further research for better understanding and effective implementation of collaborative strategies in teaching.

**Keywords:** collaborative learning, collaborative environment, group work, social and cognitive development of students.

## **Introduction:**

Teachers use many different pedagogical strategies to create a learning environment for students to work together for learning. Collaboration is an important learning strategy that helps creating a class environment that helps stimulating and motivating students. It not only supports students in taking responsibility of their learning but also create an opportunity for them to learn through social interaction.

The theory of Social Constructivism recognizes the importance of social interaction and cultural context in the learning process. Vygotsky (1978) presented the idea of Zone of Proximal Development (ZPD). ZPD is the potential of a child to learn with support of an adult (teacher/parents) or a more knowledgeable peer. Building on the theory, Tolmie, Topping, Christie, Donaldson, Howe, Jessiman, Livingston and Thurston (2010) also found a positive relationship between the social and cognitive development and collaboration and group work in school children at primary level.

Research in the past many years has effectively demonstrated that class participation, discussions, interaction and collaboration between students is an effective way for promoting cognitive and positive learning outcomes. It is very challenging for teachers to create a collaborative learning setting, as it requires discussions and student talk in the classroom. Teacher training is very important in this regard as a well-trained teacher will be able to effectively set up a learning environment where students will remain focused on task. The students perform better when they take responsibility of their own learning therefore, training the students to effectively utilize group work and collaboration for their own benefit is also equally important.

Collaboration and student centered are two pedagogies that are widely being used in many developed countries. These are two concepts that have recently been introduced into the educational platform in Pakistan. Many private schools advertise the implementation of these strategies as a selling point for their schools. It is important that teachers are trained to effectively implement the strategies for creating an interactive learning environment.

It is important to focus on participation and development of social skills in learning for secondary school students. According to social constructivism learning happens when students interact with each other and work together to build new knowledge from the available educational material. The objective of this study is to identify factors of collaborative learning strategies that positively affect students' participation and interaction, learning outcomes and development of social skills. The study is focused on student's perceptive and attitudes towards the effectiveness of collaborative learning strategies. The study will help in highlighting the effectiveness of collaboration and in identifying gaps that needs to be filled with further research. The research is a first step towards helping teachers to align their teaching methods with the needs of the students and adopt teaching practices that have a positive effect on the learning and behavior of their students.

Collaboration is an effective strategy if implemented correctly and it creates a learning environment that helps students to develop critical thinking and social skills that will help them in their future. Therefore, the finding of this research will help create awareness about the importance collaboration as a learning strategy. It will help schools to consider this learning approach effectively for the benefit of their students. For the researcher it will help

in uncovering critically areas that may have been overlooked and will help the researcher to improve her teaching.

It is very important to understand the difference between collaboration and cooperation. These terms are usually taken as similar but research has shown that there is a slight difference. Panitz (1999) explains that collaboration means independent learning by students by taking charge of their own learning. Collaboration gives more independence to the students and they as a group take responsibility of each other's learning also. As compared to collaboration cooperative learning involves completion of a topic specific task in a group. The task can be completion of an exercise, questions or a worksheet. Collaboration is more based on discussions and exchange of ideas and more centered on the students.

Students' achievement and success is positively affected by using collaboration in the classroom. The students are able to help each other while executing an assignment while working in collaboration. Citing the misanalysis of Johnson et al (1981), Davidson and Knoll (1991) found that achievement and productivity of the students increases when teachers use collaboration in classroom.

Miller et al (1994) in their research focused on the expectations of the students they have with their teachers, classroom environment and their fellow students. Students have a preconceived idea about the classroom and they may feel anxious, confused and shy to share their ideas and difficulties. Collaboration provides a good platform for them to get to know their fellow classmates as it provides an opportunity to socially interact.

Johnson et al. (1981) when reviewing 122 studies highlighted that during collaboration the goals of the group take priority over individual goals. Each member of the group takes the responsibility for ensuring the success of the group as the tasks are structured in a way that assess the students individually as well as their role in the group. Individual accountability during group work is extremely important as stressed by Salvin (1996). According to Salvin (1996), tasks should be planned in a manner that motivates the students to collaborate with each other. In his research Slavin (1983) emphasized the importance of planning the assignments that have a positive effect on the achievement of the students. While collaborating with each other the students socially interact and are forced to take responsibility for the learning of each other. Students' individual success is dependent on the success of the group leading to not only better grades Individually but for the group also.

Summers (2006) while studying effects of collaboration in mathematics on 6th grade students found that students sometimes fail to perform better in a group as they become more dependent on their group members or do not feel confident in sharing their ideas. She suggests that the teachers need to be aware of the problems of the collaboration in the classroom and readjust the tasks as per the requirements of the group to attain maximum benefits from the activity.

Fantuzzo, King and Heller (1992) discussed peer tutoring in their research and forum that peer tutoring have a positive effect on classroom dynamics. Not only does the academic results are positively changed but also classroom management becomes easier. Peer tutoring leads to better social interaction in the classroom and helps in managing behaviors. Whereas, Whicker, Bol and Nunnery (1997) found that collaboration promoted better achievement

levels in mathematics classroom. Students found peer help useful and were comfortable working in different groups each time.

Entonado and Garcia (2003) mentioning the study by Robertson et al (1994) found that collaboration and group work provided an opportunity for students to discuss explain and express themselves. Collaborative environment leads to success and academic progress. They also suggest that collaboration and group work should be introduced at an early stage and at all levels of school. This will train students to collaborate from an early stage.

Pang, Lau, Seah, Cheong, Low (2018) conducting a study on collaborative learning in Secondary School found that social interaction did not take place both in classroom and online setting. They stress to further investigate the social drawback of collaborative learning strategies. The researchers also emphasize the understanding of everyday communication habits of students and use of ICT in the classroom.

Zakaria, Solfitri, Daud, Abidin (2013) found that collaboration improves self-confidence among students but they accentuate the training of both teachers and students for preparing them to create a collaborative learning environment. The study also stresses collaboration among teachers as they can also learn from each other.

Entonado et al (2003) promotes the role of the teacher as a facilitator and someone who creates educational material that stimulates curiosity in the new topics. The teacher only intervenes to clarify difficulties and or when asked to help out.

According to the social interaction theory learning is an outcome of social interaction. Students develop social skills when they interact with each other in a collaborative learning environment and if they fail to develop these skills that as Tolmie (2010) emphasizes the teacher must revisit and readjust the learning environment according to the needs of the students.

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Collazos, Guerrero, Pino and Ochoa (2002) emphasize the influence of the personal style and individual behavior on the group dynamics and members. They stress that the collaboration and material to student should be designed keeping in mind the individual learning styles of the group members. It is not necessary that a well-coordinated and well-informed group may be the most collaborative. Tanner (2009) while study student talk in biology class stresses the need to promote student talk as that encourages students to share their ideas and peer tutoring can help the understand the material easily.

Makela, Helfenstein, Lerkkanen and Poikkeus (2017) in their research found that not only study material and tasks but also the physical aspects of the collaborative learning environment matters in helping in social interaction and learning. Specified private spaces and transparent surfaces help in complement the needs for communality and individuality. Spacious areas with enough and comfortable seating and fresh air was found to be helpful in

creating a space for collaboration. In addition, the use technology and books with teacher led and self-regulating learning can be valuable for students for social interaction.

Salvin (1983) found that a reward system during group work provides incentives for students to take responsibility for their own learn and be accountable for the performance of the group as a whole. He suggests three kinds of rewards systems that can be used.

STAD: Students Team Achievement Division

TGT: Team Game Tournament

TAI: Team Assisted Individualization

A teacher can devise their own reward system according to the age group they are teaching. Especially the teachers need to understand that in a heterogeneous group with high ability and low ability students, performance of high ability students can be adversely affected. This is where Salvin (1983) suggests the use of TAI strategy by compiling the final result based on the work of same ability students.

### **Research Question:**

The following research focuses on finding out if the use of collaborative learning strategies in secondary classroom leads to increase in class participation and has a positive effect on the learning outcomes of the students. As the research is based on the theory of Social Constructivism that advocates that learning experiences are social in nature. In a social context the learners need to develop their identity firstly from a social perspective and then as an individual. Collaborative Learning strategies help in building social support for learning where they learn to interact with students from diverse backgrounds and teachers and develop social skills for interaction, develop a positive atmosphere for learning and cooperation. These learning strategies help building the self-esteem of the students and reduce anxiety.

The research question being investigated is, “Does Collaborative learning strategies help students increase their classroom participation, have a positive effect on learning outcomes and develop social skills?”

### **Methodology:**

The study is focused on middle school children, grade 6,7 and 8, ages between 10 – 14 years. Middle school is the time when children are exposed to many new concepts and build new knowledge. The data was collected through questionnaires (Appendix A), using likert scale. It was given out in two different branches of the same private school. The School XYZ is one of the leading private schools and is following both UK National curriculum and IB Curriculum. Branch A was chosen as they follow the IB curriculum, use collaborative learning strategies and has more trained staff. Branch B follows UK National Curriculum and it is believed that traditional teaching methods are used.

The questionnaires were placed at the reception of the school and middle school students were asked to fill out on volunteer basis. A total of 75 form were received, 35 from Branch A and 40 from Branch B. The two sets of data were analyzed using percentages to determine the effectiveness of collaborative learning strategies.

The confidentiality and anonymity of all the respondents, school, teachers and student, was assured and respected. A formal approval was taken from the school administration for carrying out the survey.

### Results and Discussions

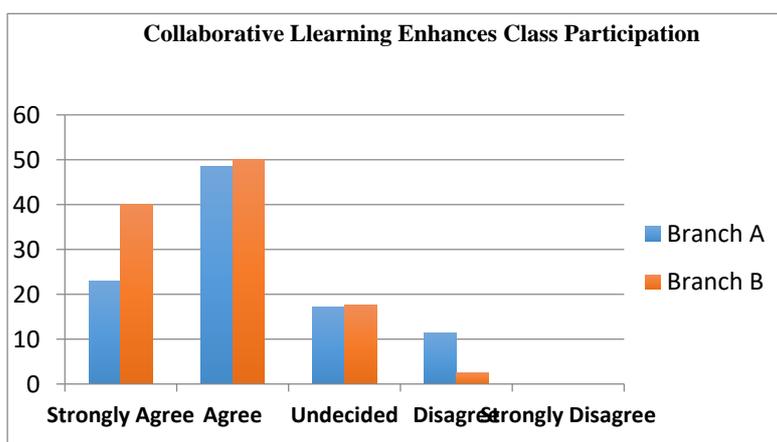
The study focuses on the students' attitude and perspective towards effectiveness of use Collaboration Learning Strategies in the classroom. The research is based on three aspects of collaboration:

#### 1- Effects of collaborative learning on class participation and interaction among students

This was studied through questions 1,2,3,6,9 and 10 of the questionnaire. All items over all showed that students in both branches had a positive overall response when asked about their opinion of the effects of collaborative learning on their participation and interaction in the classroom. (Table 1.1 a and b)

For each of the question there was a high percentage of students strongly agreeing or agreeing. In response to question 2 on enhancing in participation in class in Branch A 23% strongly agreed and 49% agreed. For the same question 50% strongly agreed and 50% agreed in Branch B, as shown in Figure 1.

Figure 1



#### Effects of Collaborative Learning on Class Participation and interaction among students

Table 1.1(a): Branch B

Sr. No	Question	Strongly Agree %	Agree %	Undecided %	Disagree %	Strongly Disagree %
1	Collaboration learning facilitates greater student participation in class activities	17.14	65.71	5.71	11.43	0
2	Collaborative Learning Enhances class participation	22.86	48.57	17.14	11.43	0

3	Collaboration Learning improves my attitude towards participation	34.29	25.71	25.71	11.43	2.86
6	Collaboration learning makes me express opinions, argue, debate, negotiate and ask questions	40	42.86	11.43	2.86	2.86
9	Collaboration encourages interaction between students	42.86	34.29	17.14	5.71	0
10	Collaboration learning has helped me to raise my hand to answer and discuss	20	37.14	14.29	22.86	5.71

Table 1.1 (b): Branch B

Sr. No	Question	Strongly Agree %	Agree %	Undecided %	Disagree %	Strongly Disagree %
1	Collaboration learning facilitates greater student participation in class activities	27.5	60	7.5	5	0
2	Collaborative Learning Enhances class participation	40	50	7.5	2.5	0
3	Collaboration Learning improves my attitude towards participation	27.5	40	17.5	10	5
6	Collaboration learning makes me express opinions, argue, debate, negotiate and ask questions	40	35	12.5	7.5	5
9	Collaboration encourages interaction between students	60	25	7.5	5	2.5
10	Collaboration learning has helped me to raise my hand to answer and discuss	25	35	10	20	10

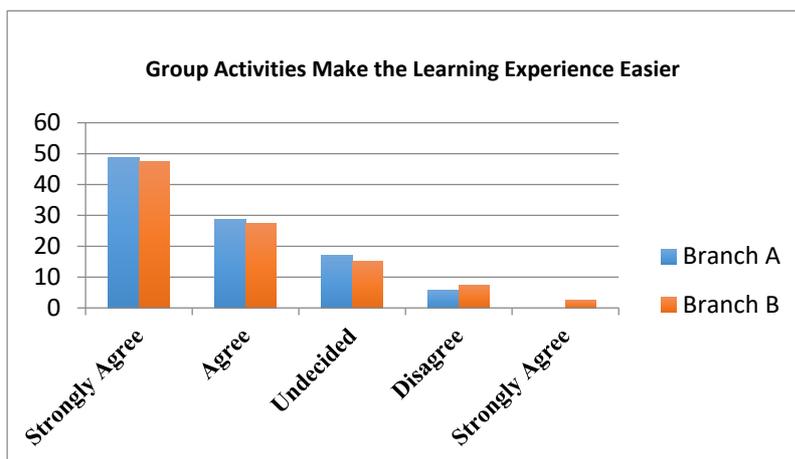
*2- Effects of collaborative learning outcomes*

This aspect was studied through questions 4,7,11,12 and 13. All responses from the students indicated a positive effect on learning outcomes using collaborative learning strategies. (Table 1.2 a and b)

In response to question 7.49% strongly agreed and 29% agreed in Branch A that group activities make learning easier. In Branch B the same question had a response of 48% strongly agreed and 28% agreeing.

In response to the question on use of collaborative learning by the teachers, the students of both the branches felt that teachers do not use collaboration, as shown in Figure 2. This indicates that students prefer Collaborative Learning strategies to traditional teaching and want teachers to use more collaborative teaching practices.

Figure 2:



### Effects of collaborative Learning on Outcomes

Table 1.2 (a): Branch B

Sr. No	Question	Strongly Agree %	Agree %	Undecided %	%Disagree %	Strongly Disagree %
4	Collaboration Learning makes learning Easier	45.71	28.57	22.86	2.86	2.86
7	Group activities make the learning experience easier	48.57	28.57	17.14	5.71	0
11	Collaboration learning has a positive impact on the student about learning	20	51.43	28.57	0	0
12	Collaboration learning is a good example for active learning strategies in the educational process	34.29	40	20	5.71	0
13	Teachers use a lot of collaboration learning strategies in the classroom	17.14	25.71	25.71	25.71	5.71

**Table 1.2 (b): Branch B**

Sr. No	Question	Strongly Agree %	Agree %	Undecided %	Disagree %	Strongly Disagree %
4	Collaboration Learning makes learning Easier	40	35	15	7.5	2.5
7	Group activities make the learning experience easier	47.5	27.5	15	7.5	2.5
11	Collaboration learning has a positive impact on the student about learning	27.5	20	30	20	2.5
12	Collaboration learning is a good example for active learning strategies in the educational process	25	52.5	10	10	2.5
13	Teachers use a lot of collaboration learning strategies in the classroom	7.5	30	12.5	42.5	7.5

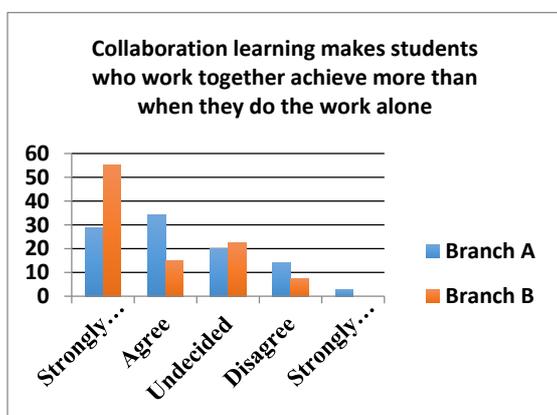
**3- Effects of Collaborative Learning on Individual students’ feeling and social skills**

The nine survey questions that investigate into the third aspect 5,8,9,14,15,16,17,18,19 and 20. Mostly the responses for all question indicated a positive effect on students’ social skills. (Table 1.3 a and b)

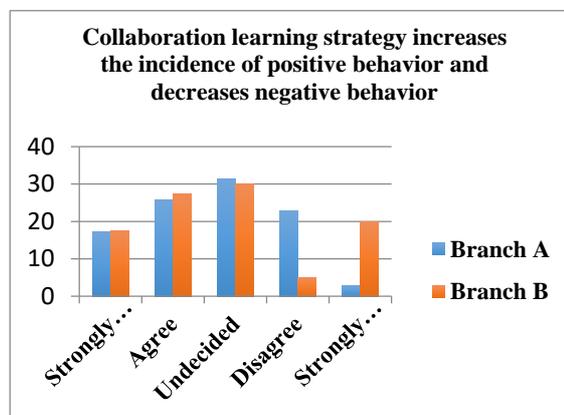
In response to question 5, 29% strongly agreed and 34 % agreeing from Branch A, that students achieve more when they work together. For Branch B the response was 55% strongly agreeing and 15 % agreeing, as shown in the Figure 3.

The question, which had a negative response from both the branches for question 19. Mostly students felt that collaborative learning strategies did not have any positive effect on behaviour in the classroom, as shown in Figure 4. This indicates that students are not able to make a connection between changes in their behaviour with collaboration and group work in class. Any change in the behaviour due to collaboration happens very slowly and is not very easy to realize.

**Figure 3**



**Figure 4**



Effects of Collaborative Learning on Individual Students' feeling and Social Skills

Table 1.3 (a): Branch A

Sr. No	Question	Strongly Agree %	Agree %	Undecided %	Disagree %	Strongly Disagree %
5	Collaboration learning makes students who work together achieve more than when they do the work alone	28.57	34.29	20	14.29	2.86
8	Collaboration learning enhances good working relationships among students	40	25.71	22.86	11.43	0
9	Collaboration encourages interaction between students	42.86	34.29	17.14	5.71	0
14	Collaboration learning contributes in development of real collaborative skills among students	20	54.29	20	5.71	0
15	Collaboration learning contributes in development of real collaborative skills among students	20	28.57	45.71	5.71	0
16	Collaboration learning strategy motivates students to use more of the mental processes of thinking	25.71	31.43	17.14	20	5.71
17	Collaboration learning strategy promotes self management skills for students	17.14	34.29	22.86	20	5.71
18	Collaboration learning strategy promotes self confidence	37.14	25.71	20	14.29	2.86
19	Collaboration learning strategy increases the incidence of positive behavior and decreases negative behavior	17.14	25.71	31.43	22.86	2.86
20	Collaboration learning strategy helps students to solve problems, make decisions, plan and organize	28.57	37.14	20	8.57	5.71

Table 1.3 (b): Branch B

Sr. No	Question	Strongly Agree %	Agree %	Undecided %	Disagree %	Strongly Disagree %
5	Collaboration learning makes students who work together achieve more than when they do the work alone	55	15	22.5	7.5	0
8	Collaboration learning enhances good working relationships among students	32.5	47.5	15	5	0
9	Collaboration encourages interaction between students	60	25	7.5	5	2.5
14	Collaboration learning contributes in development of real collaborative skills among students	27.5	42.5	12.5	10	7.5
15	Collaboration learning contributes in development of real collaborative skills among students	22.5	17.5	27.5	27.5	5
16	Collaboration learning strategy motivates students to use more of the mental processes of thinking	32.5	15	17.5	20	15
17	Collaboration learning strategy promotes self management skills for students	25	30	17.5	15	12.5
18	Collaboration learning strategy promotes self confidence	37.5	30	15	5	12.5

19	Collaboration learning strategy increases the incidence of positive behavior and decreases negative behavior	17.5	27.5	30	5	20
20	Collaboration learning strategy helps students to solve problems, make decisions, plan and organize	35	35	17.5	7.5	5

### Conclusion

The aim of this study was to examine students’ perspective and attitude towards use of collaborative learning strategies in the classroom. The results support that collaborative learning has an overall positive effect on learning outcomes and student participation. The development of social skills is one area that needs to be looked into as the results indicated that many students were undecided whether collaboration has any effect on development of social skills. It is significant to understand that effect of collaboration on behavior very subtle and very slow. It is important that teachers make their students aware that development of social skills and a positive behavior towards learning is vital for their future lives.

Another important question is the frequency of using collaborative learning where again students responded that teachers do not use the strategy very often. There can be many factors that influence the decision of the teachers to use collaborative learning strategies. It is noteworthy that many times teachers feel overwhelmed by the curriculum that has to be covered. Also the training of teachers in the practice of collaboration and group work is essential.

The study confirms the perspective examined through literature review, which signifies that collaborative learning strategies improve classroom participation and learning outcomes of the students. The study emphasizes the importance of using collaborative learning strategies in classrooms as compared to the traditional way of teaching.

### Recommendations

- As most of the students were of the view that teachers do not use collaborative strategies therefore there is a need to ensure that collaborative learning strategies are included in curriculum planning and lesson planning.
- It is also essential that teachers get the training on regular basis to understand and use collaborative strategies to achieve better results. Also the school needs to remove any external pressures like completion of syllabus that leads to teachers to focus more on completing the syllabus and using traditional method of teaching.
- Another result that needs further investigation is that mostly students could not relate collaborative learning and development of social skills. There is a need also train the students to use group work and collaboration in a way that they are able to develop their social skills. As the students eventually will be entering the real world where they need social skills to survive.
- There is a need for further research with a larger and more diverse sample size. This study was only focus on one private school. For better understanding of the process of collaborative learning strategies there is a need to conduct further research in the public sector schools where the class size is large and mostly traditional way of teaching is used.

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**Appendix A:**

Students’ Questionnaire: Collaboration in Secondary School Classroom

Read the following statements and indicate whether you strongly agree (1), agree (2), are undecided (3) disagree (4) or strongly disagree (5) with the following statements:

		strongly agree (1)	agree (2)	undecided (3)	disagree (4)	strongly disagree (5)
1	Collaboration learning facilitates greater student participation in class activities.					
2	Collaboration learning enhances class participation.					
3	Collaboration learning improves my attitude towards participation.					
4	Collaboration learning makes learning easier.					
5	Collaboration learning makes students who work together achieve more than when they to work alone.					
6	Collaboration learning make me express opinions, argue, debate, negotiate, and ask questions.					
7	Groups activities make the learning experience easier.					
8	Collaboration learning enhances good working relationships among students.					
9	Collaboration learning encourages interaction between students.					
10	Collaboration learning has helped me to raise my hand to answer and discuss.					

11	Collaboration learning has a positive impact on the students about learning.					
12	Collaboration learning is a good example for active learning strategies in the educational process.					
13	Teachers use a lot of Collaboration learning strategies in the classroom.					
14	Collaboration learning contributes in development of a real collaborative skills among students.					
15	Collaboration learning strategy increases students' motivation to learn.					
16	Collaboration learning strategy motivates students to use more of the mental processes of thinking.					
17	Collaboration learning strategy promotes self-management skills for students.					
18	Collaboration learning strategy promotes self-confidence.					
19	Collaboration learning strategy increases the incidence of positive behavior and decreases negative behavior.					
20	Collaboration learning strategy helps students to solve problems, made decisions, plan and organize their work.					