Journal of Positive School Psychology http://journalppw.com
2022, Vol. 6, No. 12, 879-889

Cooperative Learning As An Innovative Method In Teaching Science At Elementary Level

Hafiza Gulnaz Fatima[1] , Hina Akbar[2] , Bazgha Saleem Khan[3] , Hina Amin[4] , Shahid Mobeen Ali Anjum[5]

[1]IPFP fellow, Lahore College for Women University, Jail road Lahore
[2]Visiting Assistant Professor, Lahore College for Women University, Jail road Lahore
[3]Ph.D. Scholar,Department of STEM Education, Officer at Budget and Establishment Wing, Finance Department, Punjab Civil Secretariat, Lahore, Pakistan
Lahore College for Women University, Jail Road Lahore, Post Code 54000, Pakistan
bazghamoinqazi.phd@gmail.com /
[4]PhD scholar, University of the Punjab, Lahore, Pakistan
[5]M.Phil Scholar, University of Education, Township campus, Lahore, Pakistan

Abstract

The study aimed to develop cooperative learning techniques for the learning acceleration of children at early elementary level. For this research a pretest and posttest design was adopted. All elementary school students of Punjab Province were the population of the study. 180 students of grade 6th were selected from 3 different schools, 60 students from each school was the sample of the study. The random sampling technique was used to select schools from three different areas; rural, suburban and urban. 60 students of each school were distributed in two equal groups of 30 students each. Control group was taught with traditional method while the Experimental group was taught by applying the activities of cooperative learning. All groups of control and experimental were pre and post tested. The activities were developed from the 12 chapters of General science book of grade 6. Total time period of experiment was based on three months. The study found positive affect of cooperative learning on students' academic achievement. The study has implications for the use of cooperative learning strategies to enhance the learning of early elementary students.

Keywords: Cooperative Learning, Learning Acceleration, Academic Achievement

Introduction

By cooperative learning teaching strategy students understand and improved a subject by making small teams (each team consists with the students of different ability) using different educational activities. Cooperative learning approach was introduced in early 60s. Cooperative learning approach was about aimed at organizing learning activities into academic and social practices.

Morgan (2019) was the main supporter of this approach who advocates the practices of cooperative and collaborative learning in classroom for the effectiveness of students learning. In cooperative learning students work with each other as team to achieve common goal. In cooperative learning every student assign a different task and each member of the group helps

other member in learning to enhance their knowledge. Cooperative learning is equally successful for any class topic, level and subject but especially for grade 2 to 12th (Benson, 2016). Caulfield & Kocher (2000) stated that students work together in groups and accomplish their academic goals. In cooperative learning students take advantage of another's skills and resources and learn more effectively in groups rather than individually. Students share their ideas and opinions with others and also monitor and evaluate the ideas and work of other students. Cooperative learning is based on team work and cooperation on the other hand individual learning is based open hard competition with other students. In individual learning only one student can be successful while in cooperative learning every student can be succeed with the success of team. This research promotes this notion, particularly when group work is seen as a important part of collaborative and cooperative learning.

Cooperative teaching strategy is defined as "structuring positive interdependence" and arranging students in groups and gave them a common task (Shimazoe& Aldrich, 2010). Likewise, in this research strategies were assigned to ensure that pupil could be involved in positive inter- dependence.

Cooperative learning demands higher order thinking skills of cognition (Ross and Smyth, 1995). It involves pupil's intellectual and focuses on creative, open minded and interdependence learning. In this research the researcher had designed different activities where students had many opportunities open minded and creative learning.

Cooperative learning is a challenging phenomenon for students since they are not informed or habituated in the practice of learning as part of a group or accomplishing tasks with the help of peer support. Teachers may assume that their students are learning from peer support when, it is making students anxious and keeping them from putting in their best efforts (Naested & Waldron, 2004) Learning as part of a group is a grave challenge for those who need behavioral counselling and therefore, cooperative learning is in fact, to a greater extent affected by teacher's personal involvement, cooperative endeavors, mentoring of trust, respect, and equality of all group members.

There are numerous benefits of cooperative learning according to Marzano et al. (2001) such as academic excellence, appreciation of human values, and training in civic responsibility. Brown &Ciuffetelli (2009) recommended Brain based learning model (BBL) since it highlighted the need for training students to accept that they are all individuals with varied strengths and encouraged teachers to incorporate use of technology in the classrooms to help students access online resources for group tasks. Technology helps to address differentiated learning needs and prepares learners to achieve higher grades, and become self-assured, observant, resilient and independent learners (Connell, 2018) Apart from academic gain, group tasks are metacognitively demanding, since they enhance mental health and well being through creating a sense of achievement in learners

Jensen (2005) is of the view that cooperative learning creates opportunities for meaningful engagement with learning experiences so that resultant learning is insightful and deep. Learners are set up for future career demands and acquire conceptual clarity in the process of taking accountability for their own and their peers' learning in activity-based tasks.

Origins of Cooperative Learning

Cooperative learning was developed by Allport, Watson, Shaw and Mead who recommended group work as being more efficient and knowledgeable compared to an

individual's work. Cooperative work is valued since it gives opportunity for competitive spirit to emerge among the group members who share common goals and follow the same principles. Cooperative learning is feasible in a climate of mutual trust and respect, provision of access to technical and financial support, and evidence of diversity of thinking styles in group members. Learners with an aggressive, competitive edge find it difficult to relate to others and cannot form an emotional connection or liking for their peers since they lack communication skills (Azizbek & Sabokhat, 2021).

Teacher as a facilitator

The teachers' role is defined as an enthusiastic participant in the learning process who appreciates diversity in learners and one who permits students space and time to take part in the process of constructing meaning independently, developing reasoning and logical thinking in the process of learning. Students' participation is assured amidst an environment of autonomy to voice their thoughts, and under the watchful interventionist teacher, learners develop greater commitment to their studies, and become trained in resolving disputes and squabbles that arise often in groups. The teachers' role is to specify the objectives and to assess if the intended learning outcomes have been achieved at the end of the lesson. (Khan & Ahmad, 2014). Cooperative learning is an indispensable element of the modern theories and teaching methodologies and is a current research interest. Vcsmr & Rao (2013) remark classroom research culture encourages greater use of cooperative learning strategies. Therefore, there is high utility of cooperative learning in theory, practice, and research. The BbIM (brain-based intervention model) investigated the impact of specially designed cooperative classrooms in the local setting of the public schools.

Limitations of Cooperative Learning

In cooperative learning based classrooms learners become unsettled when they experience delays in work which are caused by others and which lead to a succession of delayed reviews bt the teacher. It is difficult for learnes to familiarize themselves to the experience of social interdependence. Genc (2016) suggested social interdependence is beneficial if it is an incentive for learners to work together and achieve success through teamwork. It is not advantageous if it creates a climate of competitiveness within the group members with each member working towards achieving their own ends. This foreshadows projecion of individual esteem that is higher than commitment to a group and in a climate of distrust and animosity, very little can be achieved (Siltala, Suomala, Taatila, & Keskinen, 2007). Brown and Ciuffetelli (2009) recognized the hidden challenge in cooperative learning experiences when slow learners feel lost if they are ignored by the group. Teachers may find it difficult to adopt this methodology for several reasons. Some learners do not perform because of fear of negative peer review of their efforts and may feel compelled to change results to appease the group when reporting research findings (Tsay& Brady, 2010). It may not be the best methodology for slow learners and the teacher should plan a judicious eclectic mix of strategies for all learners in class.

The modern-day teacher must consider the five basic features of cooperative learning (Johnson & Johnson, 1994). These are 1) accountability of the individual before the group, 2) teachers' role in creating opportunities for friendly exchanges among classmates, 3) and encouraging casual exchanges, 4) developing consciousness of a need in learners for acquiring for real social skills in a realistic setting, 5) and finally the teachers' decision in immersing groups of learners in a learning situation (Khan & Ahmad, 2014).

Marzano, Pickering, & Pollock (2001) advise teachers to design tasks for manageable groups, which are temporary and to change group members regularly. Teachers are required to distribute learning materials in groups as this practice will induce learners to start a discussion amongst their groups. Teachers are required to maneuver learners in discussion using probes and prompts to break the ice between groups (Gregory & Kuzmich,2005).

During learning episodes, learners spend time in each other's company, acquire subject mastery through sharing in discussion with peers, support peer learning, and work towards personal and groups' academic success (Seifertet al., 2009). Groups of learners have a healthy peer relationship of mutual respect and trust, which enables learners to successfully master complex learning materials in an enjoyable way. Autonomous learners have self-esteem, high motivation, and resilience and once trained in collaborative learning, voluntarily teach concepts to their absent peers (Tsay& Brady, 2010).

Cooperative learning context of the study

Brown & Ciuffetelli (2009) identified the following characteristics of cooperative learning. Learners exhibit positive interdependence, perform in groups, assume leadership roles, and share responsibility for transmission of learning to their class fellows. Learners develop responsibility for their peer's learning, supporting their conceptual knowledge (Siltala, 2010). Students demonstrate clarity of conceptual learning in individual and group situations, assuming responsibility as a group as well as individually (Johnson &Johnson, 2009) Diverse groups of learners demonstrate individual processing of information, demonstrate group action, and proceed to accomplish their agenda (Shimazoe & Aldrich,2010).

Strategies for Successful Cooperative learning

Cooperative learning strategies are beneficial. Mostly used strategies are: 1) Small groups of 4-5 students, 2) Round Robin, 3) Think Pair Share, 4) Jigsaw, 5) Reverse Jigsaw, and 6) Reciprocal teaching. Cooperative learning techniques are easy to implement in most classrooms and are adaptable for most subject areas.

Think Pair Share

Think pair share activity involves learners in engaging deeply with the problem that is posed to them. Students ponder, reflect, and deliberate over the issue as discussed by their peers, brainstorm, and construct mind maps to convey their thoughts and ideas to their class mates (Jensen, 2005). Teacher's discussion is fruitful as it helps learners to work in partnership and learn drawing on their own ideas and sharing their notions. (Tufekçi & Dimerel, 2009).

Jigsaw

The Jigsaw technique is implemented in the classroom when the teacher forms two groups of students, an expert group, and a home group. Homegroups are heterogeneous group members who are assigned different topics by the teacher, and after assignment of topic they leave their group to join students working on similar topics in discussion-based learning till they have mastered the content. This grouping is called the expert group. When these students return to their home group, they are assigned the task of instructing all home group members using the discussion method (Sabbah, 2016).

Jigsaw II

There is an interesting variety of Jigsaw known as Jigsaw II in which a content area is defined for all members. There is no expert group involved. The topic is divided into manageable chunks and each member of the group is made to work on a specific topic. Every member acquires knowledge of the content and willingly transmits learning to other members. Slavin (1996)

remarked that it is advantageous for learners since they acquire mastery level competency, as they take responsibility of sharing information in their group.

Reverse Jigsaw

The teacher divides the class into two groups, the expert group, and the whole class. Moreover, the expert group students do not move out of their group with the task of communicating their learning to the home group as in the Jigsaw strategy. The expert group students in reverse jigsaw teach the whole class instead (Heeden, 2003).

Inside-Outside Circle

Inside and outside circle is a problem-solving activity which is collaborative since it involves learners in brainstorming ideas and actively finding solutions to problems. The teacher divides the class, forming two circles (inside and outside). The students form two circular groups, share their opinions, and answer teacher's queries. All students have a chance to participate since students of the inner circle face the outside circle students. Inner circle students are assigned a different topic from the outer circle. Each student of inside circle exchanges ideas with a new partner as they talk and interchange places (Pearcy& Duplass, 2011).

Reciprocal Teaching

The teacher forms study pairs of students which are assigned a text to read, discuss and learn with each other. Students make use of meta-cognitive techniques in reciprocal teaching episodes such as summarizing, clarifying hidden details, predicting the possible outcome of the story, and questioning the intentions of the major characters they are reading about (Brown & Ciuffetelli ,2009).

Rally Table

The teacher divides the class into two groups. The teacher raises a question, and the students write down their thoughts on a piece of paper. Every student will record a written response and pass the paper to his peers to add their reflection within the time assigned by the teacher. After, this timed activity, the students read out their answers under the watchful supervision of the teacher. This is a good collaborative team building activity for student groups (Siltala, 2010).

TGT (Team Game Tournament)

Small groups of students learn the reading material, design a game and in the process acquire more permanent and deeper learning while involved in a pleasurable, and enjoyable activity. Another incentive of TGT is that this game involves team work so no one can take the credit for a win nor can any one student be blamed for letting the team down. Learning objectives are achieved in an atmosphere of mutual trust and respect following friendly competition exercises (Jenson, 2008). Students learn to relate to each other, share information and assume responsibility for preparing student friendly, and innovative learning materials (Heeden, 2003). Cross curricular learning outcomes and academic gains are enhanced along with personal and social development of learners **(**Banchonhattakit et al, 2015, Gregory &Kuzmich, 2005). Active learning strategies promote higher educational outcomes in improved grades, collective exchanges, group tasks and activities, following peer feedback (Allen, 2006). Students are more likely to attend classes since they take ownership of their learning, enjoy peer protection, are highly motivated, keep to a fixed schedule, and develop as autonomous learners who find learning an enjoyable challenge.

Cooperative learning strategies are suited to the Brain Based Learning Model for its academic and communicative skills development (Shimazoe & Aldrich, 2010).

It may be implemented in elementary classrooms where subject matter knowledge is not as requisite as learning of social exchanges

and team work dynamics according to Kagan (1989). Pearcy& Duplass (2011) claim benefits of collaborative work lie in positive interdependence, meaningful engagement of diverse groups of heterogeneous students, processing of information by group members, training in social skills, opportunities for peer evaluation and face to face presentations before group members. However, the teacher's presence as a guide and a monitor is a prerequisite for successful group tasks. Teachers' discretion in evident in putting together groups of students from diverse backgrounds, and varied abilities and strengths into a workable team that shares ideas and information with each other. A group that has all similar interest students will never bring forth original ideas. For students, the extrinsic motivation is the grades and credits for team work, while the intrinsic motivation lies in appreciation of an enjoyable task to the best of their ability. While social interdependence develops, learners are groomed for leadership roles and learn to follow and respect code of ethics of group work.

Statement of the Problem

The current situation of Pakistan's Education system is based on rote learning and memorization as compare to conceptual learning and critical thinking. Here is a need to modify our classroom practices and Education system by applying activities to promote effective and meaningful learning to enhance student's cognition. The study investigates; 'the impact of cooperative learning on students' academic achievement at early elementary level (grade 6).

Objective of the Study

Following are the main objectives of the study:

- To measure the effectiveness of cooperative learning on the academic achievement of students of Grade 6
- To develop cooperative learning techniques to accelerate the learning of grade 6th students.

Hypothesis

H_o1: There is no significant effect of cooperative learning strategies on student's academic achievement in rural area public school

H_o2: There is no significant effect of cooperative learning on student's academic achievement in suburban area public school

H_o3: There is no significant effect of cooperative learning on student's academic achievement in urban area public school

Methodology

The current quantitative study was experimental. Quasi- experimental research design, pre and posttest control group design with six groups (three experimental and three control intact groups). In this research experimental groups were taught by using cooperative learning activities also compared with control groups who were taught by conventional method.

Population

All early elementary level students of science subject of grade 6 (age 10 to 12) in public schools were the population of the study in the Province of Punjab including all urban, suburban and rural areas.

Sample

Researcher selected three public schools (rural area public school, suburban area public school, urban area public school) while using random sampling technique. After that, researcher selected 60 (30 students for experimental group and 30 students for control group) grade VI

students from each school. The total sample of the study was 180 students of three schools (rural, suburban & Urban) of Lahore District.

Table No. 1.1
Table showing the distribution of the sample of the study

Schools	Control Group	Experimental group	Total Sample
Urban **p**ublic School	30	30	60
Rural **p**ublic School	30	30	60
Suburb**an** public School	30	30	60
Total Sample	90	90	180

Instrument

The researcher had to taught the students of grade VI in three elementary public schools (Rural, Urban, Suburban). Researcher developed a module based on cooperative learning strategies to taught general science book of Punjab text book board for grade VI. The researcher used objective type achievement test developed from the syllabus of general science book. Students were assessed before and after treatment (teaching with cooperative learning techniques) with same achievement test.

Data collection

The researcher used cooperative learning module and teach the students of experimental group personally but the control group were taught with traditional method. Both control and experimental groups were pre and post tested with same achievement test.

Data analysis

Data were analyzed into following steps to draw conclusions:

I. The achievement tests (pre and posttest) scores of 180 students was the Data of the study
II. Researcher tabulated the scores of pre and posttest of individuals of both (control and experimental) groups.
III. Independent sample t-test was applied to see the significant difference between the gain score of both (control and experimental groups) in each school.

Results

Table No. 1
Independent sample t-test for comparison of gain score of experimental group and control group in Rural Public School

	Levene's test for Equality of variances	t-test for Equality of means

		F	Sig.	t	df	Sig. (2 tailed)
Rural Public school	Equal variances assumed	2.785	.101	7.397	58	.000
	Equal variances not assumed			7.397	56.200	.000

The Table No. 1 shows a "significant difference in the gain score of students (control and experimental group) of rural public school conditions; t (58) =7.397, p=.000" where the calculated p-value is less then alpha 0.05. So, it rejects the null hypothesis that, "there is no significant effect of cooperative learning on student's achievement in science subject in rural public school" and concluded that cooperative learning has significant effect on students' academic achievement. The students of experimental group gain more scores then the students of control group.

Table No. 2

Independent sample t-test for comparison of gain score of experimental group and control group in suburban Public School

		Levene's test for Equality of variances		t-test for Equality of means		
		F	Sig.	t	df	Sig. (2 tailed)
suburban public school	Equal variances assumed	.258	.613	8.777	58	.000
	Equal variances not assumed			8.777	57.987	.000

The Table No. 2 shows a "significant difference between the gain score of control and experimental group of suburban public school conditions; t (58) =8.777, p=.000"the calculated p-value is less then alpha 0.05. It rejects the null hypothesis that, "There is no significant effect of cooperative learning on student's achievement in science subject in suburban public school". It is

concluded that students of suburban public school learn better by applying cooperative learning techniques

Table No. 3
Independent sample t-test for comparison of gain score of experimental group and control group in urban Public School

		Levene's test for Equality of variances		**t-test for Equality of means**		
		F	**Sig.**	**t**	**df**	**Sig. (2 tailed)**
urban public school	Equal variances assumed	4.100	.047	15.081	58	.000
	Equal variances not assumed			15.081	43.792	.000

The Table No. 3 shows a "significant difference in the gain score of students of control and experimental group in urban public school conditions; t (58) =15.081, p=.000" where the calculated p-value is less then alpha 0.05. It rejects the null hypothesis that, "There is no significant effect of cooperative learning on student's achievement in science subject in urban public school". It is also depicts that the students of experimental group who were taught with cooperative learning strategies gain more scores in posttest then the students of control group.

Findings

The findings of the study were as follows:

- In rural area public school, the students of experimental group (who taught with cooperative learning strategies) achieve higher scores then the students of control group (taught with traditional method). The study reveals that cooperative learning techniques are very useful for the students of rural area public school.
- The significant difference shows that individuals of experimental group who taught with cooperative learning achieve higher scores then the students of control group who taught with traditional method. Results revealed that cooperative learning has significant effect on students' academic achievement.
- In urban public school, the students of experimental group perform better than the students of control group. So, the cooperative learning strategy found very effective in all three (rural, urban and suburban) areas.

Conclusion

The aim of education is not just to teach the students but it must add to the concept learning and rational thinking. Education needs

innovations in learning for both students and teachers to stimulate the lifelong learning. The present study investigates that cooperative learning strategies are highly effective to accelerate the learning of students.

The study also concluded that higher order thinking skills provide opportunities for learning independently. That's why the effective presentation of content is very important. Researcher found that the activities and strategies of cooperative learning strengthen the learning of grade VI students.

References

1. Allen, R. (2006). Priorities in practice: The essentials of science, grades K-6: Effectivecurriculum, instruction, and assessment. Alexandria, VA: ASCD
2. Azizbek, K., & Sabokhat, S. (2021). Cooperative Learning as an Innovative Method in Teaching English. International Journal on Orange Technologies, 3(4), 306-309.
3. Banchonhattakit, P., Duangsong, R., Muangsom, N., Kamsong, T., &Phangwan, K. (2012). Effectiveness of brain-based learning and animated cartoons for enhancing healthy habits among school children in KhonKaen, Thailand. Asia Pacific Journal of Public Health, 27(2), 2028-2039.
4. Benson, A. A. (2016). Structural modeling of teacher characteristics, skills in teaching, and students' achievement in secondary schoolphysics. PhD thesis, Institute of Education, University of Ibadan, Nigeria.
5. Brown, H., &Ciuffetelli, D.C. (2009). Foundational methods: Understanding teachingand learning. Toronto: Pearson Education.
6. Caulfield, S. K & Kocher, T. (2000). Brain-based instruction in action, Educational Leadership, 58(3), 62-65. Retrieved from https://eric.ed.gov/?id=EJ617853
7. Connell, J. D. (2018). The global aspects of brain-based learning: Educational Horizons, 88(1), 28-39. Retrieved from https://files.eric.ed.gov/fulltext/EJ868336.pdf
8. Genç, M. (2016). An evaluation of the cooperative learning process by sixth-grade students. Research in Education, 95(1), 19-32.
9. Gregory, G. H., &Kuzmich, L. (2005). Differentiated literacy strategies for student growth and achievement in grades. 7-12. Corwin Press.
10. Heeden,T. (2003). The reverse jigsaw: A process of cooperative learning and discussion. Teaching Sociology, 31 (3), 325-332.
11. Jensen, E. (2005). Teaching with the brain in mind. 2nd Edition, ASCD Publication, North Beauregard, St. Alexandria, VA 22311-1714.
12. Jensen, E. (2008). Brain-based learning: The new paradigm of teaching. Corwin Press.
13. Johnson, D. W., & Johnson, R. T. (2009). An educational psychology success story: Social interdependence theory and cooperative learning. Educational Researcher, 38(5), 365-379.
14. Johnson, D. W., Johnson, R. T., &Holubec, E. J. (1994). The new circles of learning: Cooperation in the classroom and school. ASCD.
15. Khan, S. A., & Ahmad, R. N. (2014). Evaluation of the effectiveness of cooperative learning method versus traditional learning method on the reading comprehension of the students. Journal of Research & Reflections in Education (JRRE), 8(1).

16. Marzano, R. J., Pickering, D., & Pollock, J. E. (2001). Classroom instruction that works: Research-based strategies for increasing student achievement. Ascd.
17. Morgan, K. (2019). Applying mastery target structures to cooperative learning in physical education. Journal of Physical Education, Recreation & Dance, 90(3), 27-32. Retrieved from https://www.tandfonline.com/doi/full/10.1080/07303084.2019.1559677
18. Naested, I. M., Potvin, B. L., & Waldron, P. (2007). Understanding the landscape of teaching. Special materials services, Manitoba Education.
19. Pearcy, M., & Duplass, J. A. (2011). Teaching history: Strategies for dealing with breadth and depth in the standards and accountability age. The Social Studies, 102(3), 110-116.
20. Ross, J. A., & Smyth, E. (1995). Differentiating cooperative learning to meet the needs of gifted learners: A case for transformational leadership. Talents and Gifts, 19(1), 63-82. Retrieved from https://journals.sagepub.com/doi/abs/10.1177/016235329501900105
21. Sabbah, S. S. (2016). The effect of jigsaw strategy on ESL students. Arab World English Journal (AWEJ) 7(1), 453.
22. Seifert, T., Brassard, P., Wissenberg, M., Rasmussen, P., Nordby, P., Stallknecht, B., ... &Secher, N. H. (2009). Endurance training enhances BDNF release from the human brain. American Journal of Physiology-Regulatory, Integrative and Comparative Physiology, 298(2), R372-R377.
23. Shimazoe, J., & Aldrich, H. (2010). Group work can be gratifying: Understanding & overcoming resistance to cooperative learning. College teaching, 58(2), 52-57.
24. Siltala, R. (2010). Innovativity and cooperative learning in business life and teaching. University of Turku, 100-106.
25. Siltala, R., Suomala, J., Taatila, V. & Keskinen, S. (2007). Cooperative Learning in Finland and in California during the innovation process. In Andriessen D. (Eds). Intellectual capital. Haarlem: Inholland University.
26. Slavin, R. E. (1996). Cooperative learning: Theory, research and practice (2nd ed.) Needham Heights, MS: Allyn and Bacon.
27. Tsay, M., & Brady, M. (2010). A case study of cooperative learning and communication pedagogy: Does working in teams make a difference?. Journal of the Scholarship of Teaching and Learning, 78-89.
28. Tüfekçi, S., &Demirel, M. (2009). The effect of brain based learning on achievement, retention, attitude and learning process. Procedia-Social and Behavioral Sciences, 1(1), 1782-1791.
29. Vcsmr, P., & Rao, D. S. (2013). Encouraging co-operative learning among students. Journal of Business Administration and Education, 2(1).