

Individual versus Collaborative Learning: A Strategy for Promoting Social Skills and Academic Confidence among Students

Sarwat Sultan*
Irshad Hussain**
Frasat Kanwal***

Abstract

This experimental study used repeated measures' design for two considerations of using individual vs. collaborative learning procedures. Eighty undergraduate psychology students from two analog classes were engaged in the experiment. Students from both classes were first examined at the start of semester on their social skills and academic confidence. Then the instructor adopted the individual learning method for teaching in one class and collaborative learning method in second class. Students were then again examined at the end of semester on study variables. The pre-testing of variables showed non-significant differences on social skills and academic confidence among students from both classes. The post-testing of variables demonstrated significant differences in the degree of the social skills and academic confidence among the students learning collaboratively and individually. Obviously, the "social skills and the academic confidence" appeared to be enhanced more among collaborative students than those of the individual students. Hence, collaborative learning was suggested to be encouraged by teachers.

Keywords: Learning Styles, Social Skills, Academic Confidence, Class Performance

Introduction

Learner and learning seems to be the focal point of all educational activities and therefore, different learning methods and approaches or strategies are designed for the maximum accumulation of learning. Individual and collaborative learning approaches are thus designed to address individual differences and cater learning needs of the students. There has been and is much debate over which of the two approaches is more result oriented and useful for learning of students. Different educationists, researchers and educationalists (Phiwpong & Dennis, 2016; Mashhadi and Gazorkhani, 2015; Garcha and Kumar, 2015; Inuwa, Abdullah, & Hassan, 2015; Lau, Kwong, Chong & Wong, 2014; Kuri, 2013; Reza, 2013; Ebrahim 2012; Sultan & Hussain, 2012) conducted researches on different aspects of individual as well as collaborative learning and hold

* Department of Applied Psychology, Bahauddin Zakariya University Multan, Pakistan, Email: sarwatsultan@hotmail.com

** Department of Education, The Islamia University of Bahawalpur, Pakistan, Email: irshad_iub@yahoo.com

*** Department of Applied Psychology, Bahauddin Zakariya University Multan, Pakistan

their position regarding their effectiveness. These researchers often use group work, team learning, collaborative and cooperative learning synonymously (Kirschner, 2001) as learning methods where students learn together (Ramos & Pavón, 2015) and gain motivation from each other (Ngeow, 1998; Aziz & Hossain, 2010) through joint working tasks (Najmonnisa, Haq & saad, 2015).

However, collaborative learning (CL) appeared to be more effective in promoting social skills and self-esteem among students than the individual leaning –IL (Sultan, & Hussain, 2012) strategies. Davidson and Major, (2014) viewed CL to play scaffolding role for success in the further life of students as it motivates them to be engaged in in the process of thinking and reasoning (Castle, 2015). Similarly, Hussain and Sultan (2010) viewed CL useful in inculcating more social skills, developing more confidence and promoting more extroversion among students by enabling them to be energetic and progressive in assuming challenging tasks in their lives as compared to IL. The CL appears to have advantages over IL as it develops tendency of volunteerism and common good among students. Working together –CL scaffolds students in improving their social development which thus is supported through the “Zone of Proximal Development (ZPD)” of Vygotsky (1978).

It is generally observed that learning takes place by active participation of students in different activities in the classroom. Different researchers found CL to be more advantageous than IL in retention of learning and development of academic confidence among students (Theobald, Eddy, Grunspan, Wiggins & Crowe, 2017; Gillies, 2016; Hurst, Wallace, & Nixon, 2013; Sultan & Hussain, 2012; Hussain & Sultan, 2010; Ngeow, 1998). Observably, learning tends to be a fun and CL creates such situations and environments where students enjoy their learning tasks more than working individually on learning activities (Sultan & Hussain, 2012). CL tends to be motivational and promotes sense of responsibility, interdependence, group cohesiveness, confidence, enthusiasm among students (Johnson & Johnson, 2002) which help them build their later lives.

CL has more advantages than IL or lecture method. Along with academic confidence and social skills, it promotes reflective practice, problem solving skills by promoting critical thinking, rationality and reasoning among students (Castle, 2015). It promotes communication skills, mannerism, ethics, volunteerism and belief in the dignity of the work through learning by doing (Hussain & Sultan, 2010; Entwistle & Tait, 1994). It is believed that CL accommodated students with different demographics variables and conditions having diversified learning styles and learning abilities (Sultan & Hussain, 2012). CL enables students how to develop and promote professional relationship with colleagues. How to act and react? How to listen and be listened? How to dress and groom personality? They also learn to behave respectfully and be emotionally intelligent even in odd situations. These skills and abilities lead them develop academic confidence and

social skills to pave for success of future life (Theobald, Eddy, Grunspan, Wiggins, & Crowe, 2017; Hurst, Wallace, & Nixon, 2013).

After reviewing the literature, the study was designed to find the impacts of CL and IL on social skills and academic confidence. The main objective was to address the question of comparison of impacts of IL and CL through empirical approach. It was assumed that students who learn collaboratively will promote social skills and academic confidence than students who learn individually. Prior to employing the CL and IL in the class, it was hypothesized that, no difference exist among students. Similarly, it was hypothesized that differences exist among students learning in both methods on their “social skills and academic confidence” at the end of semester.

Method

Participants

Eighty (80) undergraduate students enrolled in two classes (40 in each class) of the psychology from Bahauddin Zakariya University Multan participated in the study. Among them 22 were male and 58 were female students aged between 19-22 years ($M = 20.01$, $SD = 1.8$). They were more or less similar in their cultural background.

Instruments

“The Social Competence Inventory”: Rydell, Hagekull, and Bohlin (1997) developed this inventory. This scale comprises of 25 items on “5-point likert scale” and measures two components i.e. “social competence (17 items) and social initiative (8 items)”. Responses are obtained as “does not apply at all = 1, well does not apply very well = 2, applies sometimes = 3, applies rather well = 4, and applies very well = 5”. Separate scores are sum up for each subscale and a composite score is sum up by averaging out the scores on both subscales. High social competence and social initiative is represented by high score on each scale. The inventory has reliability coefficient of .94.

“The Academic Confidence Scale”: Sander, and Sanders developed it in 2003 with 24 items on “5-point likert scale”. Replies are obtained on 1-5 options; “Never” to “Very Confident”. Overall score is obtained by adding the all assigned numeric values of 1 to 5. A high score indicates “greater degree of academic confidence” and low score suggests “low degree of academic confidence”. The reliability coefficient of scale is .78.

Procedure

This study was completed utilizing the experimental research design wherein independent variable was the mode of instruction in the classroom followed by teacher with two levels; IL and CL, and the criterion variables were students’ social skills and academic confidence. Undergraduate psychology students from two sections of same semester participated in this experiment. They were studying the same course taught by

the same teacher. In this way all the participants were matched on their age, semester, course to be taught, course instructor, and assignments given to students.

A pretesting was done prior to the manipulation of 2-levels of independent variable: individual and collaborative learning method and the learners of both classes were first examined on measures of social skills and academic confidence at the start of semester. By utilizing experimental design, the class teacher who was teaching the same course in both classes followed the individual and collaborative learning methods for teaching in class one and class two respectively. In class one where the teacher has employed the individual learning method as a mode of instruction was given assignments during the semester by the teacher. Teacher just explained the assignments and students worked individually and independently. On the other side in class two where the teacher has employed the collaborative learning as mode of instruction was also given the same assignments at the same time of class one. Teacher elaborated the assigned task to the students and discussed the subject matter in detail with students. Students were guided and encouraged to share their point of views with their mates and to be attentive to the opinion and recommendations of the others as well. It means the difference between two methods of learning lie in the students' working on assignments individually and collaboratively.

When semester was to end, a post-testing was done to measure the effects of two levels of independent variable. A comparative analysis using SPSS-20 was performed to check the differences in pre and post test scores of students from both classes.

Results

The independent sample t-tests were computed to calculate the differences in social skills and academic confidence of the students studying in classes with IL and CL at the start and end of course (Table 1 & 4). Paired sample t-tests were performed to compare the students in IL and CL for their “scores on pre and post testing” (Table 2 & 3).

Table 1

Comparison between Students of IL and CL at the Beginning of Semester in Relation to Social Skills and Academic Confidence (N=80)

Scales	Individual Learning (n=40)		Collaborative Learning (n=40)		t	p
	M	SD	M	SD		
Social Skills	66.11	7.71	64.43	8.18	1.413	0.11
Academic Confidence	72.42	10.21	79.51	12.71	1.224	0.15

“df. = 78, p = non-significant”

Table 1 demonstrates differences in degree of social skills and academic confidence of students who were in IL and who were in CL to be non-significant. These

results propose that social skills and academic confidence don't differ among students at the start of course. However, mean values show slight differences in social skills and academic confidence of students studying under both learning styles.

Table 2

Comparison between Student' Pre and Post Testing Scores on Social Skills and Academic Confidence in IL (N=40)

Scales	Pre-Testing		Post-Testing		<i>t</i>	<i>p</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Social Skills	66.11	7.71	68.82	9.32	1.023	0.23
Academic Confidence	72.42	10.21	75.16	10.03	1.262	0.16

“*df.* = 38, *p* = non-significant”

Table 2 indicates that the differences between pre and post testing scores in IL on social skills and academic confidence are non-significant. Results propose that the “IL is not effective in promoting social skills and academic confidence of students”.

Table 3

Comparison between Student' Pre and Post Testing Scores on Social Skills and Academic Confidence in CL (N=40)

Scales	Pre-Testing		Post-Testing		<i>t</i>	<i>p</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Social Skills	64.43	8.18	102.12	9.71	3.41	0.001**
Academic Confidence	79.51	12.71	93.72	8.11	2.52	0.02*

“*df.* = 38, **p* < 0.05, ***p* < 0.01”

Table 3 indicates that significance differences between pre-and-post-testing scores in CL on social skills and academic confidence. Results propose that “CL is effective in promoting social skills and academic confidence of students”.

Table 4

Comparison between Students of IL and CL at the End of Semester in Relation to Social Skills and Academic Confidence (N=80)

Scales	Individual Learning (N=40)		Collaborative Learning (N=40)		<i>t</i>	<i>p</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Social Skills	68.82	9.32	102.12	9.71	-3.115	0.002**
Academic Confidence	75.16	10.03	93.72	8.11	-2.521	0.031*

“*df.* = 78, **p* < 0.05, ***p* < 0.01”

Table 4 asserts that the differences in “social skills and academic confidence” of students in IL and CL are significant at the end of semester. Findings reveal that compared to the students in IL, the students in CL have reported higher scores on social skills and academic confidence.

Discussion

The main objective was to address the question of comparison of impacts of IL and CL through empirical approach. It was addressed that which of the two i.e. IL or CL is more effective for student’s learning and performance. For this purpose two learning styles; individual and collaborative learning were examined through an experimental approach.

It was hypothesized that before assigning the learning assignments to the students in both classes will report equal levels of social skills and academic confidence. Results from pre-testing of the class demonstrated no differences in degrees of social skills and academic confidence of learners from both sections. The findings acknowledged the hypothesis and affirmed that “students were found with no differences in levels of social skills and academic confidence”. Students’ social skills and academic confidence were found at average level. These findings can be justified by the work of Bean (1996); Felder, (1997) who reported that community colleges are mainly commuter train schools. Learners usually do not stay extra in colleges for outside the regular academic and social activities. Most of the learners are engaged in their jobs and/or under stress by their family that also restricts their activity to take part in school or college life. Therefore it becomes the responsibility of class instructor to create environment of society at campus.

Another hypothesis stated as ‘students who will study under collaborative learning style will develop more social skills and will get more academic confidence as compared to those students who will learn under individual learning approach’, was tested through the careful manipulation of learning ways (independent variable with two conditions); IL and CL methods. Randomly assigned classes on individual and collaborative learning patterns were tested at the end of semester. Results showed that social skills and academic confidence of students significantly differ in IL and CL. Findings proved the assumption that the learners who were in the class where teacher has instructed the students to work together and collaboratively were found high on developing social skills and enhancing academic confidence than those who were in the class where teacher had given the assignment to work individually.

This significant finding is in tune with the findings from the work of Kessler and Pürcher, Höfler, Pirker, Tomes, Ischebeck, & Gütl (2016) who reported that CL develops positive community attitudesdilutes aggression in any situationdecimates dread, fearfulness, and damned, and enhances reward, friendly disposition, and unanimity. Procedure is significant same as subject matter and task is significant. CL requires space to get mastery, and the users of CL find it a joy when they work together, share thoughts,

and guide others. Theobald, Eddy, Grunspan, Wiggins and Crowe (2017; Hurst, Wallace, and Nixon (2013; Sarwat and Hussain (2012); Hussain and Sarwat (2010); Davidson and Major (2014) Hooper and Hannafin, (1988) also presented that CL furthers learners' participation at all levels. They reported that students who are with high ability when do work with learners who are with low skills get advantages by elaborating and discussing. Low ability learners also get advantages by looking into the options of problem solving strategies offered by group members. The present research finding also affirmed the notion that interactive and combined activities assist learners to comprehend their conflicts. When students learn in group setting they get more academic confidence, and establish healthier relations with peer group and even with their teachers as well.

This study also examined the differences among the students of both class learning individually and collaboratively. It was also hypothesized that students studying under individual and collaborative learning approaches will report different levels of social skills and academic confidence at the end of semester. Results supported the assumption and findings revealed that students, who were working on their assignment together and were discussing the subject matter with their fellows and teacher, were found with high levels of academic confidence and with healthy social relations, social skills, and social competence at the end of semester. These findings are clearly in support of employing the CL in classroom. Several previous researches provide the strength to the present findings such as Sultan and Hussain (2012) also presented the same findings from empirical study on social skills; and Noohi, Abaszadeh and Maddah (2013); Quinn (2006) and Felder (1997) offered that CL helps all kinds of the students in a class to work with each other. As learners becomes more involved in resolving conflicts and participating in a discussion in a guided manner on a regular basis, are more capable to interpret their conflicts and understand the ways to handle social problems that may arise during discussion.

Our finding that CL promotes social skills can be seen through the main dimension of learning explained by Pürcher, Höfler, Pirker, Tomes, Ischebeck and Gütl (2016); Gillies (2016); Hurst, Wallace, and Nixon (2013); Johnson, Johnson and Holubec (1992); Johnson, Johnson, Roy & Zaidman (1985) is working together that promotes social competency and skills among students. In our community and present academic model, competition is appraised over cooperation. The need is to make students aware of the demand of substantial, positive, cooperative doings by asking them realize the activities which assist them work together (Agashe, 2012; Zang 2010; Gillies, 2006; Panitz 1996; Cohen & Cohen 1991).

Conclusion

This study demonstrated that CL is peculiarly more efficient to enhance the social skills of students and to get students more confident academically. This advantage is particularly significant when learners study in such classes where CL is the usual culture of learning and working together is encouraged than individual learning style. Findings have demonstrated the “*significant differences in pre and post testing of the variables of social skills and academic confidence*” of students in IL and CL. CL has been found more significant element in the social and academic competence of students.

Limitations and Suggestions

Despite the useful and significant findings of the present study for the educational context, the study also acknowledged its limitations. Although the findings have clearly demonstrated that CL is a substantial facilitator for promoting social skills and academic confidence, but findings lack external validity because of smaller size of sample –only undergraduate students. Further replication is needed to support the present findings by exploring gender differences as well. This study has investigated only the social skills and academic confidence as dependent variables of learning styles. Several other variables yet remain to be explored. Thus it is suggested that more researches should be conducted in future by incorporating other variables such as academic engagement, achievement motivation, causal attribution, and social anxiety.

References

- Agashe, L. (2012). Cooperative learning in a post graduate research methodology course. *HEF Indian Journal of Higher Education*, 3(2), 43-49.
- Aziz, Z. & Hossain, M. A. (2010). A comparison of cooperative learning and conventional teaching on students' achievement in secondary mathematics. *Procedia Social and Behavioral Sciences*, 9, 53-62.
- Bean, J. (1996). *Engaging Ideas, The professor's Guide to Integrating Writing, Critical Thinking, and Active learning in the Classroom*. San Francisco, CA: Jossey-Bass.
- Castle, T. D. (2015). *The Impact of Cooperative Learning On the Development of Need for Cognition among First-Year College Students (University of Iowa)*. PhD (Doctor of Philosophy) thesis, University of Iowa, 2014. <https://doi.org/10.17077/etd.8j7n5q43>.
- Cohen, B. P., & Cohen, E. G. (1991). From groupwork among children to R & D teams: interdependence, interaction and productivity in E.J. Lawler (Eds.) *Advances in Group Processes* 8, 205-226, Greenwich, CN: JAI.
- Davidson, N., & Major, C. H. (2014). Boundary crossings: Cooperative learning, collaborative learning, and problem-based learning. *Journal on Excellence in College Teaching*, 25(3&4), 7-55.

- Ebrahim, A. (2012). The effect of Cooperative learning strategies on elementary students' Science achievement and social skills in Kuwait. *International Journal of Science and Mathematics Education*, 293-314.
- Entwistle, N., & Tait, H. (1994). Approaches to Studying and Preferences for Teaching in Higher Education: Implications for Student Ratings. *Instructional Evaluation and Faculty Development*, 14 (1&2), 2-9.
- Felder, R. M., (1997). *E-mail communication from felder@eos.ncsu.edu*, WWW page <http://ww2.ncsu.edu/unity/lockers/users/f/felder/public/rmf.html>
- Garcha, P. S. & Kumar, K. (2015). Effectiveness of cooperative learning on critical thinking disposition of secondary school students. *Issues and Ideas in Education*, 41-62.
- Gillies, R. M. (2016). Cooperative Learning: Review of Research and Practice. *Australian Journal of Teacher Education*, 41(3). <http://dx.doi.org/10.14221/ajte.2016v41n3.3>.
- Gillies, R. (2006). Teachers' and students' verbal behaviours during cooperative and small- group learning. *British Journal of Educational Psychology*, 76, 271-287.
- Hooper, S., & Hannafin, M. J., (1986). Cooperative cbi: the effects of heterogeneous vs homogeneous grouping on the learning of progressively complex concepts. *Journal of Educational Computing Research*, 4, 413-424.
- Hurst, B., Wallace, R., & Nixon, S. B. (2013). The Impact of Social Interaction on Student Learning. *Reading Horizons: A Journal of Literacy and Language Arts*, 52 (4). Retrieved from https://scholarworks.wmich.edu/reading_horizons/vol52/iss4/5.
- Hussain, I., & Sultan, S. (2010). *Learning by Doing: Learning by Doing: Outcomes of Teaching a Research Course through Group Activities*; in Proceedings of the Annual International Conference on Computer Science Education: Innovation & Technology (CSEIT) 2010. Published and Organized by the Global Science and Technology Forum (GSTF) Singapore –December 6-7, 2010.
- Inuwa, U., Abdullah, Z. & Hassan, H. (2015). *Effects of cooperative learning on secondary students' achievement in financial accounting*. (ICAS), International Conference on Accounting Studies.
- Johnson, D., & Johnson, R. (2002). Learning together and alone: Overview and meta-analysis. *Asia Pacific Journal of Education*, 22, 95-105.
- Johnson, D. W., Johnson, R. T., & Holubec, E. J., (1992). *Advanced Cooperative Learning- Revised*. Edina, MN: Interaction Book Co.
- Johnson, D. W., Johnson, R. T., Roy, P., & Zaidman, B., (1985). Oral interaction in cooperative learning groups: Speaking, listening and the nature of statements made

by high, medium and low-achieving students. *Journal of Psychology*, 119, 303-321.

- Kirschner, P. A. (2001). Using integrated electronic environments for collaborative teaching/ learning. *Res Dialogue Learn Instruction* 2, 1–9.
- Kuri, S. (2013). Effect of cooperative learning model on the IX standard students Achievement towards geography with respect to gender. *International Indexed and Referred research Journals*, IV (43-44).
- Lau, P., Kwong, T., Chong, K. & Wong, E. (2014). Developing students' teamwork skills in a cooperative learning project. *International Journal for Lesson and Learning Studies*, 3(1), 80-99.
- Najmonnisa, Haq, M. A., & saad, I. (2015). Methods on 7th Grade Students' Academic Achievement: An Experimental Study. *Journal of Elementary Education*, 25(2), 89-112.
- Noohi, E., Abaszadeh, A., & Maddah, S. S. (2013). University engagement and collaborative learning in nursing students of Kerman University of Medical Sciences. *Iranian journal of nursing and midwifery research*, 18(6), 505–510.
- Panitz, T. (1996). Getting students ready for cooperative learning. *Cooperative learning and College Teaching*, 6(2), 134-147.
- Phiwpong, N. & Dennis, N. K. (2016). Using cooperative learning activities to enhance fifth grade students` reading comprehension skills. *International Journal of Research – Granthaalayah*, 4(1), 146-152.
- Pürcher, P., Höfler, M., Pirker, J., Tomes, L. M., Ischebeck, A., & Gütl, C. (2016). Individual versus collaborative learning in a virtual world. In *39th International Convention on Information and Communication Technology, Electronics and Microelectronics (MIPRO)* Institute of Electrical and Electronics Engineers.
- Quinn, P. (2006). *Cooperative Learning and Student Motivation. Education and Human Development*. Master's Theses. 285. http://digitalcommons.brockport.edu/ehd_theses/285.
- Ramos, M. C., & Pavón, V. (2015). Developing cooperative learning through tasks in Content and Language Integrated Learning. *Multidisciplinary Journal of Educational Research*, 5(2), 136-166. doi:10.17583/remie.2015.1429.
- Reza, K, M., Abozar, H. R., Ali, E. N., & Akbar, H. (2013). The impact of cooperative learning on students` science academic achievement and test Anxiety. *Journal of Educational Innovations*, 11(44), 83-98.
- Rydell, A. M., Hagekull, B., & Bohlin, G. (1997). Measurement of two social competence aspects in childhood. *Developmental Psychology*, 33(5), 824-833.

- Sander, P., & Sanders, L. (2003), Measuring confidence in academic study. Available on Internet summary report. *Electronic Journal of Research in Educational Psychology and Psycho pedagogy*, 1, 1.
- Sultan, S., & Hussain, I. (2012). Comparison between Individual and Collaborative Learning: Determining a Strategy for Promoting Social Skills and Self-Esteem among Undergraduate Students. *Journal of Educational Research*, 15(2), 35-43.
- Theobald, E. J., Eddy, S. L., Grunspan, D. Z., Wiggins, B. L., Crowe, A. J. (2017) Student perception of group dynamics predicts individual performance: Comfort and equity matter. *PLoS ONE* 12(7): e0181336. <https://doi.org/10.1371/journal.pone.0181336>.
- Vygotsky, L.S. (1978). *Mind in Society: The Development of Higher Psychological Processes*. Harvard University Press: Cambridge.
- Zhang, Y. (2010). Cooperative language learning and foreign language learning and teaching. *J Lang Teach Res*. 1(1):81–83.