

Original Article

Impact of Cooperative Learning on Critical Thinking and Interpersonal Communication Skills at Higher Education, Karachi, Pakistan

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Abstract

Higher education, globally viewed as a potential driver for the growth of the knowledge-based society. The purpose, is no longer to produce the workforce for economic development but to equip individuals with the skills, knowledge and competencies that enable them to face the global challenges (Spring, 2008; Chan, 2016). The developing countries like Pakistan need to focus on the innovative teaching approaches that emphasize creating, applying, analyzing, and synthesizing knowledge and can engage the learner in collaborative learning. There is a large body of studies that discuss the effect and outcomes of cooperative learning (CL) at different level of education. The current study looked into the impact of CL mainly on critical thinking and interpersonal communication abilities at higher education. The study was conducted using a quantitative survey methodology. Furthermore, the public and private sector universities of Karachi were selected which are falls in general disciplines. Further, 175 students and 58 teachers were selected from department of education of 3 Public and 4 private universities through stratified random sampling. Data was collected through questionnaire and examined by using regression analysis with SPSS. According to both student and teacher perceptions, there is a significant impact of CL on students' critical thinking and interpersonal skills in higher education. Cooperative learning (CL) is the most effective strategy in higher education for preparing individuals to confront global challenges.

Keywords: Cooperative learning, Critical thinking, Interpersonal communication skills

INTRODUCTION

Higher education is currently seen as a source of human capital for social and economic growth (Spring, 2008). As expectations for higher education grow rapidly, researchers are focused on understanding the outcomes that benefit the individuals. Lagemann and Lewis, 2012 and Chan, 2017 identified that higher education is not only pertinent to pursue the profitable advantages. In addition, accountable to equip young adults with civic courage, moral judgment, problem solving, critical thinking and interpersonal skills. Therefore, it is concluded that today universities are responsible to promote the higher cognitive and communication skills to gain sustainable benefit from higher education.

In Pakistan, Higher Education institutions are striving to equip students with competencies that transcend mere content knowledge,

including critical thinking, problem-solving, and effective communication. In a progressively competitive global environment, graduates must exhibit independent thinking and collaborative skills (Afzal et al., 2023). However, many classrooms continue to use traditional lecture-based instruction, which tends to limit student participation, reflective thinking, and the growth of interpersonal communication skills (Raza et al., 2021). Cooperative learning (CL), which stresses organized group interaction, shared responsibility, and group problem-solving, has become a promising pedagogical approach to address these issues (Johnson et al., 2014).

Accordingly, cooperative learning is a series of processes in which students interact with each other to share, reflect, evaluate, and interpret information that facilitate the learning process (Robyn et al., 2010). Further, an effective student-

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centered approach to be used to improve the students 's interpersonal communication and cognitive skills at higher education (Mc Leish, 2009). CL can foster a collaborative environment that fosters inclusivity, mutual respect, and communication skills in Pakistan, where students frequently come from a variety of sociocultural and linguistic backgrounds (Panhwar, 2023).

In Pakistan, there very few researches conducted on the impact of cooperative learning and they are mainly focused on secondary and higher secondary level e.g. Ahmed & Mahmood, 2010; Khan & Inamullah; Arif et al., 2011; Perveen & Batool, 2012; Najamonna et al., 2019; Hashmi et al., 2020; Akber & Akhter, 2021. Therefore, this study mainly explores the impact of CL on critical thinking and interpersonal communication skills at higher education systems of Karachi, Pakistan

Objectives of the Study

- To study the impact of CL on students' critical thinking and interpersonal communication skills at higher education, Karachi, Pakistan, perceptions of students and teachers.
- To identify the impact of CL on students' critical thinking skills at higher education.
- To determine the impact of CL on students' interpersonal communication skills of at higher education.

Hypotheses

- There will be no significant impact of CL on students' critical thinking s at higher education.
- There will be no significant impact of CL on students' interpersonal skills of students at higher education.

LITERATURE REVIEW

There are five components that are commonly used to define CL i.e. Positive interdependence, promotive interaction, individual accountability, social skills, and group processing. According to both classic and modern reviews (Johnson, Johnson et al., 2014; Slavin, 2014), CL improves achievement, peer relationships, and psychological well-being all of which are closely related to communication competence when compared to competitive or individualistic structures. The strategy is based on the Social Interdependence Theory, which holds that goal structures influence interaction patterns, which in turn influence results (Johnson & Johnson, 2009). It usually has structured roles and

accountability systems, which are particularly relevant in the large or diverse classes that are typical in Pakistani universities, according to the literature.

Johnson and Johnson (2013) identified the benefit of cooperative learning for the individual i.e. critical thinking, social and communication skills, self-esteem and interpersonal skills. Further, Akanwa and Odo (2014) also highlight the importance of cooperative learning for the promotion of civic values, personal growth and development of positive attitudes towards active learning. As, indicated in experimental research by Yang Blood and Bitz (2001) at nursing college that active methods of teaching enhance the critical thinking. Klimovien , Urbanien and Barzdžiukien (2006) in an experimental study at Lithuanian University of Agriculture found the relationship of cooperative learning to certain skills of critical thinking i.e. identify, analyze, criticize, question, evaluate, summarize and communicate.

Further, it is identified by Shinde, (2012) that cooperative learning is a medium to share, help, understand and communicate with each other. In addition, is an activity where student participate as a team member and develop their social interaction, conflict resolution and communication in group. (Wood, 2015; Drussell, 2012). In a higher education context, there have been several researches addressing the cooperative learning as an effective learning strategy in all over the globe (Cavanagh, 2011; Tombak & Altun, 2016). Further, Tadesse and Gillies (2015), Neo (2005), Loh and Teo (2017), Singh (2013), Malatji (2016), investigated the effectiveness and benefit of cooperative learning in higher education. There are many studies and comparisons that explain how cooperative learning can make students good critical thinkers. Gillies, (2004) compared students who were learning in a proper cooperative structure with students who were not. He gathered that the group of students who were learning in a cooperative structure showed good teamwork and social skills.

METHODOLOGY

The study was descriptive in nature and conducted in the form of a quantitative survey method. This study was conducted in two parts to collect the responses of students and teachers simultaneously of education department from all the public and private universities. Researcher used stratified random sampling in this research.

Further, selected 3 public and 4 private general education universities of Karachi having program of education to draw the sample. The sample size for this research was 58 teachers and 175 students from department of education. It is identified by Kish, (1965) that, "when attribute is present 20 to 80 percent of the time. (i.e., the distribution approaches normality), 30 to 200 no of elements are enough" (as cited in Singh & Masuku, 2014). In addition, according to Hair et al., (2018) as cited in Memon et al., (2020) "at least 50 samples and generally 100 samples for most research situations is needed in simple regression".

In this study the questionnaire was developed from each variable to collect data from the participant. Further, each variable distributed with suitable items such as cooperative learning consist of 18 items adopted from Fernández-Rio, et al. (2017) used with the permission of author. Critical thinking consists of 10 items from taxonomy of critical thinking skills (Davies, 2015). Interpersonal communication skills consist of 10 items from elements of social and communication skills (Mercendetti, 2010; Jalaludin & Inkasan, 2014).

There are altogether 38 items. Reliability statistics of the tool was .85 Chronbach's Alpha. Further, face validity of tool is ensured by 2 professors from department of education of University of Karachi. All items in questionnaire are applicable for both teachers and students. Data was collected from students and teachers by in person visit to universities. Researcher used regression analysis in this research. This technique is the combination of correlation analysis, ANOVA and regression analysis, and it is used to analyze the association between measured variables and latent constructs (Beran & Violato, 2010).

DATA ANALYSIS

Impact of CL on critical thinking and interpersonal communication skills at higher education, Karachi, Pakistan, perceptions of students.

Descriptive Statistics

The number of data set is recorded 175. The average of the answer by the respondent against the variable critical thinking shown in the mean column is 3.95 with Standard deviation 0.521. The average of the answers by the respondent against the variable cooperative learning is shown in the mean column is 4.02 with standard

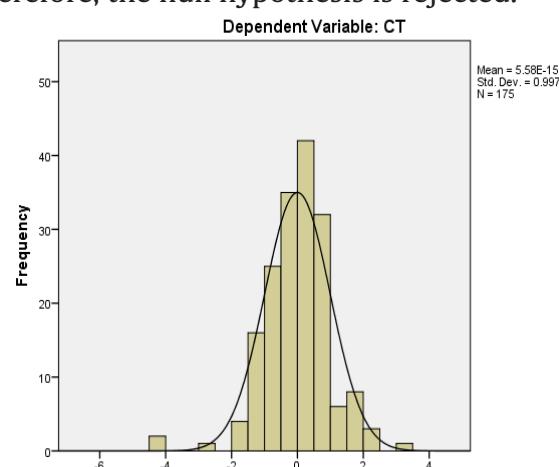
deviation 0.462. The descriptive statistics of this study states that the value of mean for interpersonal communication skills 3.98 with standard deviation 0.498, for cooperative learning is 4.02 with standard deviation 0.462.

Impact of CL on Students' Critical Thinking

To study the impact of CL on critical thinking skills of students at higher education. The finding shows significant relationships between two variable i.e. cooperative learning (CL) and critical thinking as $r = .731$, $p < 0.01$. Hence, H_a is accepted. The correlation of observed and predicted values is represented by the value of R in the above table. Coefficient of determination is represented as R square. Here, the value of R square is .543 for the independent variable (cooperative learning). Therefore, the 53.4% variance is predicted by the model in dependent variable (critical thinking). The model's F-value is 198.526 and the value of p is 0.000 less than 0.05, so the null hypothesis is not accepted and it is inferred that there is a significant impact of CL on critical thinking skills of students at higher education Karachi, Pakistan.

Coefficient is a source used for finding statistical value. The above coefficient table depicts the value of constant coefficient and the significance. Further, the equation for predicting the critical thinking can be constructed. Thus, by using the regression coefficient and the constant term given under the column labelled B. The regression equation can be represented as: Critical thinking = .640 + (.823) (cooperative learning)

If we test the hypothesis, we see that the predictor is significantly impacting on dependent variable. Cooperative learning (CL) sig value is 0.000 that shows significantly impact on critical thinking (CT) as sig value is less than 0.05. The regression coefficient is not zero. Therefore, the null hypothesis is rejected.



The above image of histogram outline shows the leftover worth of relapse, mean and standard deviation of lingering model. Roughly, the worth of mean and standard deviation are 0 and 1, which implies there least possibility of mistake in the exploration model and indicators cooperation on subordinate factors CT. The adequacy of fitted mode can be seen in scattered plot. The above figure shows that data does not follow any particular pattern and in scattered form. Hence, it is concluded that the chances of error in the fitted model are minimum. The typical likelihood plot for relapse normalized lingering displays the relapse line that contacts the highest number of focuses in the model, as well as the model's accuracy.

Impact of CL on Students' Interpersonal Communication Skills

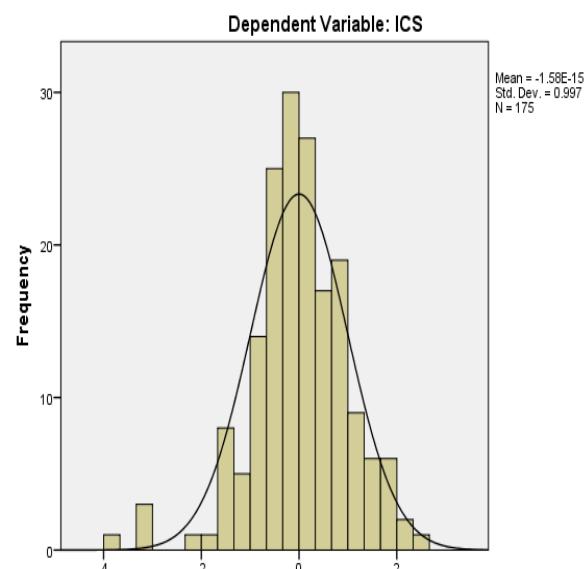
To analyze the impact of CL on interpersonal communication skills of students at higher education. The finding shows the significant relationships between cooperative learning (CL) and interpersonal communication skills (ICS) as $r = .711$, $p < 0.01$. Hence, H_a is accepted. The value of R in the above table representing the correlation of observed and predicted values. The coefficient of determination is represented as R square. Here, the value is .506 for R square of independent variable (cooperative learning) has. Therefore, the 50.6% variance is predicted by the model in dependent variable (interpersonal communication skills). The model's F-value is 177.233 and the value of p is 0.000 less than 0.05, so the null hypothesis is rejected. Therefore, it is inferred that there is a significant impact of CL on interpersonal communication skills of students at higher education, Karachi, Pakistan.

Coefficient is a source used for finding statistical value. The above coefficient table depicts the value of constant coefficient and the significance. Furthermore, the equation for predicting interpersonal communication abilities can be created by combining the regression coefficient and the constant term in the column labelled B. So, the regression equation can be represented as:

$$\text{Interpersonal communication skills} = -.899 + (.767) (\text{cooperative learning})$$

If we test the hypothesis, we see that the predictor is significantly impacting on dependent variable. Cooperative learning (CL) sig value is 0.000 that shows significantly impact

on interpersonal communication skills (ICS) as sig value is less than 0.05. The regression coefficient is not zero. Hence the null hypothesis is not accepted.



The above histogram graphic depicts the residual value of regression, the mean, and the standard deviation of the residual model. The mean and standard deviation are close to zero and one, indicating that the study model and predictors' interaction on dependent variables ICS has the lowest possibility of error. The adequacy of fitted mode can be seen in the above scattered plot. As it can be seen in the above figure that data does not follow any particular pattern and in scattered form. Hence, it is concluded that the fitted model has minimum chances of error. The above normal probability plot for regression normalized residual displays the regression line that hits the highest number of points included in the model, as well as the correctness of the above model.

Findings & Discussion

The study's first objective was to ascertain the impact of CL on students' critical thinking skills. According to the perceptions of both students and teachers, cooperative learning and critical thinking abilities have a substantial impact on students at higher education institutions in Karachi, Pakistan. Similarly, Sadeghi (2012) conducted an experimental study in an Iranian university with an EFL background, which demonstrates this. He conducted a MANCOVA analysis to find out the impact of CL on critical thinking. Furthermore, the experimental group performed significantly better on the subscales of critical thinking than the control group.

Further, the second objective of the research was to investigate the impact of CL on students' interpersonal communication skills at higher education. According to the perceptions of both students and teachers, CL has a substantial impact on students' interpersonal communication abilities in higher education in Karachi, Pakistan. Similarly, Han and Son (2020) compare students' interpersonal abilities before and after cooperative learning by using paired sample t test.. The data indicate that cooperative learning improves students' interpersonal competency. Likewise, the study of the students' responses to the question about CL revealed that their interpersonal competence and social skills improved as a result of their participation in cooperative learning activities. Furthermore, Johnson et al. (1983) discovered that CL experiences enhance greater interpersonal attraction among homogeneous students from different ethnic groups. Moraddi et al. (2018) conducted an investigation among high school students in Tehran. They used structural equation modeling and PLS software to study the relationship between group learning and interpersonal abilities, with a focus on emotional intelligence as a mediator. The findings revealed that group learning has a direct effect on interpersonal skills, while emotional intelligence has an indirect effect on interpersonal skills through emotional intelligence.

CONCLUSION

The study determined the significant impact of CL on students' critical thinking and interpersonal skills at higher education, Karachi Pakistan. Therefore, the conclusion of the study is that a cooperative environment leads to high-quality learning which in turn back gaining academic, affective and social skills. In the global knowledge economy higher education serves as the producer of intellectual capital (Spring, 2008). For a developing country like Pakistan, CL would be a major shift from content-based pedagogy to context-based andragogy. In addition, when the skills like critical thinking, problem-solving, communication, creativity, social responsibility and global engagement increased, eventually students get the benefit of higher education. In addition, it harmonized culturally diverse environment of higher education.

Recommendations

According to the findings, the study makes the following recommendations.

- Instead of utilizing structured cooperative

practice like Group Investigation, Jigsaw, Think-Pair-Share, and sporadically, universities ought to incorporate them into their course outlines.

- The HEC Undergraduate Education Policy's faculty development programs can help instructors match cooperative assignments to learning objectives.
- Organize frequent workshops to help faculty members become more comfortable with group assessment strategies, facilitation techniques, and CL methods.
- Promote peer mentoring, in which seasoned faculty members serve as role models for new instructors in cooperative learning techniques.
- Exams that are solely lecture-based should be replaced with mixed assessments that emphasize problem-solving, collaboration, and communication.
- Include peer evaluations, reflective journals, and group presentations in summative and formative evaluations.
- To guarantee that every student participates, try to keep class sizes small or employ subgrouping techniques in large classes.
- To encourage constructive interdependence and personal responsibility, clearly define the roles and responsibilities of each group member.
- To enhance listening, empathy, and civil discourse, incorporate CL activities with organized peer discussions and feedback sessions.
- Provide resources to encourage interactive, cooperative learning, such as training funds, digital tools, and smart classrooms.
- Use digital tools like Google Docs, Padlet, and Microsoft Teams to improve teamwork outside of the classroom.
- Connect cooperative learning objectives with industry demands, placing a focus on communication and teamwork abilities that employers value.

Competing Interests

The authors did not declare any competing interest.

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