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EXAMINING THE INFLUENCE OF COLLABORATIVE LEARNING ON ACADEMIC SUCCESS AMONG PRE-SERVICE TEACHERS: A MIXED-METHODS STUDY

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Abstract

Creating classrooms for learners to participate is becoming an integral element of a comprehensive educational initiative for actively learning students in institutions of higher education. Students collaborate to attain goals through collaborative learning. The idea behind collaborative learning is that students may help each other learn and build a deeper comprehension of the subject matter by working together. The study examines the effect of collaborative learning on the academic success and classroom engagement at B.Ed. level (2.5 &1.5) pre-service teachers. Social Constructivism theory was used to observe student success. Data collected through questionnaires from five private university students for quantitative data and for qualitative 10 interviews conducted. Findings evaluated through IBM SPSS, the composite reliability of the instrument was measured as α=0.954. The Pearson Correlation also showed a positive, strong and significant association among all variables, which means that all variables are important in the context of the research. . Finally, the results of Regression Analysis confirmed and accepted all three hypotheses. It can be concluded that all three independent variables that student's interaction with peers, interaction with teachers, and use social factors positively influence collaborative learning and students improve their academic success and achieve their goals. The results of this study suggest that collaborative learning is an effective approach to enhancing academic success of pre service teachers, and that social factors play an important role in promoting collaboration among students. Overall, this research highlights the importance of collaborative learning in promoting academic development of pre-service teachers.

Introduction:

The transmission of knowledge from instructor to student in today's classrooms has developed into its own distinct art form. (Wieman,2019). Teaching in the twenty-first century is an endeavor in collaborative dilemma that seeks to cultivate in students the ability to think critically, communicate properly, and work with others to find solutions to complex issues (Soipimai & Sanrattana, 2023; Lashari, Umrani & Buriro,

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2021). Consequently, educators are shifting away from the traditional role of simply delivering facts to act as mentors who create engaging and active learning environments for their students.

Collaborating is a philosophy to interpersonal relationships and way of life that encourages personal accountability for their acts, including the pursuit of knowledge and an appreciation for the skills and insights of their peers. It promotes a method of working with people that acknowledges and appreciates the unique skills and experiences of each member of a group whenever possible (Khan, Lashari & Iqbal, 2021). All members of the group contribute to decision-making and are held equally accountable for the collective's actions. Collaborative learning differs worldwide. As countries compete for global influence, instructor-based learning is evolving internationally in the classroom (Acharya et al, 2024). Collaborative learning requires students to work together, establish connections, and create material (Qureshi et al, 2021). A collaboratively rich atmosphere improves students' metacognition, social skills, and cognitive success (Gangmei,2024). Students in an interactive classroom serve as learning resources for one another by engaging in conversation, observing the work of their peers, contributing to group discussions, and ultimately achieving solutions as a group (Fayaz et al., 2023, Huang, 2021).

Collaborative learning (CL) is considered an effective teaching approach that promotes communication, teamwork, leadership skills, and academic achievement. Through group activities, students learn to share ideas, solve problems, and work with individuals from diverse backgrounds (Lashari & Umrani, 2023; Raza et al., 2020). However, the effectiveness of collaborative learning is often affected by unequal participation, lack of responsibility, dominant group members, and overdependence on others, which can reduce trust, engagement, and the quality of group work (Chen & Huang ,2024). These challenges may limit the benefits of collaborative learning and negatively influence students' learning experiences. Therefore, this research aims to examine students' opinions on how collaborative learning affects their academic success in the B.Ed. program. This study aims to clarify the effectiveness and importance of collaborative learning in higher education by investigating the experiences of learners, perspectives, and ideas.

Independent Variables:

a) Interaction with Peers:

In terms of questionnaire development, numerous research studies have been reviewed in order to select the most appropriate and reliable data collection instrument. Section 'B' of questionnaire includes statements on students' perceptions regarding overall interaction with Peers. The starting six statements are adapted from the research of Emmanuel & Wang in 2021.

b) Students Interaction with Teacher

In the same way, students' teacher interaction portion of research instrument was adapted from some other study conducted by Abrantes et al., 2007.

c) Interaction through Social Media:

In this part the student's perceptions regarding social media interaction**.** The statements are adapted from the research which conducted by Sarwar et al in 2019, Rawski, Yang, & Johnson, 2014; Sa´nchez , & Javed, 2014

Mediating Variable

a) Collaborative Learning

Collaborative learning statements are adapted from the research which constructed by Al-Rahmi & Othman, 2013.

Dependent Variable:

a) Student`s academic Success

Students' academic success statements are adapted from the research which constructed by Ainin, Naqshbandi, Sedigheh, & Ismawati, 2015 and Gress, Fior, Hadwin, & Winne, 2010.

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Research Objectives:

- To examine the influence of collaborative learning on the academic success of pre-service teachers.
- To explore pre-service teachers perceptions and experiences regarding collaborative learning and academic success.
- To integrate quantitative and qualitative findings to develop a comprehensive understanding of how collaborative learning influences academic success among B.Ed. (2.5&1.5) students.

Research Questions:

RQ1: To what extent does collaborative learning influence the academic success of B.Ed. (2.5&1.5) pre-service teachers?

RQ2: How do B.Ed. (2.5&1.5) students perceive and experience collaborative learning in relation to their academic success?

RQ3: How do the qualitative findings explain and complement the quantitative results regarding the impact of collaborative learning on students' academic success?

Significance of the Study:

This study is significant because it indicates that students' quality and performance improve when they communicate to each other and work together. This research is significant as it provides crucial insights into how collaborative learning affects the academic success of B.Ed. students. The results aim to guide teacher educators in identifying effective collaborative practices that boost student learning, participation, and classroom engagement. Furthermore, by exploring students' personal experiences and perspectives, this study helps educators address common obstacles like unequal participation and cooperation issues within group settings. The findings also offer valuable direction for curriculum developers and administrators, facilitating the design of instructional strategies that foster meaningful collaboration and improved outcomes. Through a mixed-methods approach, this study contributes both statistical evidence and qualitative depth to the existing literature, establishing a foundation for future academic research in teacher education.

Literature Review:

Learning via collaboration is known by a variety of names, including group work, learning in the communities, team learning, and other names. Working together is something that every one of these character traits has in common. There is more to collaboration than merely working together effectively. It encompasses every aspect of the educational process. Every student is accountable for their own actions as well as those of the group. In order for the aim to be accomplished, all of the students need to collaborate with one another in order to locate, integrate, and review knowledge, as well as evaluate and accept the ultimate choice.

The phrase "collaborative learning" is often used to refer to a broad category of instructional strategies that urge for student participation and problem-solving together. Specific instructional collaborative learning activities in which students must rely on each other to complete the tasks, which in turn helps them learn and retain more information (Bukhari et al., 2023; Fayaz et al., 2023). Collaborative learning, as defined by Malhotra (2009), involves students achieving defined goals through a collaborative effort.

This review of the literature compiles research on collaborative grouping best practices and their effects on higher education student involvement. The review defines engagement, talks about how it's measured, and examines how it affects learning in the classroom (Raza et al, 2021) Numerous studies have been shown positive impact in collaboration (Contreras & Chapetón, 2017), Educational institutions use a wide variety of methods to encourage students to work together (Khan, Lashari & Iqbal, 2022). Used appropriately, it can be a powerful tool for fostering higher levels of analytical thought (Kwangmuang et al, 2021). Create a group of

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students who all possess the same experiences and needs "strength" by means of team support, and boost both your academic success and your social skills (Jillani, Lashari & Bukhari, 2022; Van Ryzin et al 2020).

In higher education today, traditional lecture halls are giving way to effective learning systems aimed to foster student-centered learning. Improving students' involvement and academic success is a central goal of the active learning approach, which is part of a wider educational trend (Buriro et al., 2023; Fayaz et al., 2023). It describes the results of a teacher's deliberate and intentional effort to promote student involvement in a class. CL is a useful tactic used in the classroom since it helps students learn more quickly and improves overall academic success. Researchers have found a correlation between the use of collaborative forms of learning and improvements in students' views toward their instructors and their own self-esteem, social interaction and peer support also increases diversity due to more interaction with others from different backgrounds. (Loes et al, 2018). In collaborative learning environment, students are anticipated to take part in conversations with one another and gain the majority of their knowledge via these interactions. (Casquero et al, 2022).

Project-based learning is an approach that relies on developing a specific commodity as you learn. A teacher poses a problem and an assignment is given to each student in the group. Students then decide when, where and how to solve the given problem. Each individual solves a given problem independently and finally presents it to the group (Lashari, Umrani & Buriro, 2021; Supena et al , 2021). This type of collaborative learning requires a small but diverse group. This allows advanced learners to engage groups in field research, literature exploration, research conduct, independent study, and other work (Buriro et al., 2023; Ramdani & Susilo, 2022).

Prior studies have shown a positive interaction between student collaboration and academic success (Lagat & Concepcion, 2022; Khan, Lashari & Iqbal, 2022). 21st-century dilemmas demand collaboration solving (Graesser et al, 2018). Learning focuses on the process of problem solving instead of classical lectures and grading, teachers monitor students' work, thinking and creativity (Buriro et al., 2023; Fayaz et al., 2023). Students self-manage the learning process and work in groups. It is Crucial in this process that students and teachers discuss issues (Lashari & Umrani, 2023). Both should have a good interest in solving problems (Nieminen et al, 2022). During the student's problem-solving process, the teacher does not have to present the solution or be directly involved in the process.CL improve the ability of student problem solving and the interaction with peers and others give this opportunity.

A well-planned collaboration activity in the classroom allows students to realize the importance of their individual contributions and develop the confidence to learn from their mistakes and to teach each other (García et al, 2022). Students' social experiences encourage collaborative learning. Group exercises and presentations throughout the semester promote social support. The teacher actively facilitates and interacts with students (Fugui et al, 2021; Lashari & Umrani., 2023) Administrators, faculty members, and parents are key members of the collaborative process, which creates numerous opportunities for help for students with outside pressures including financial, emotional, or familial issues. Collaborative Learning (CL) improves student abilities including communication and leadership. Leadership skills are the abilities, actions, and capacities that a person requires in order to be effective in motivating and leading other people. These skills are essential for a person to have in order to achieve their goals. (Benmira & Agboola , 2021).

Researchers from Malaysia have recommended for collaborative learning as a successful learning in an effort to boost students' academic success and interpersonal communication skills, based on the results of their research into the area.

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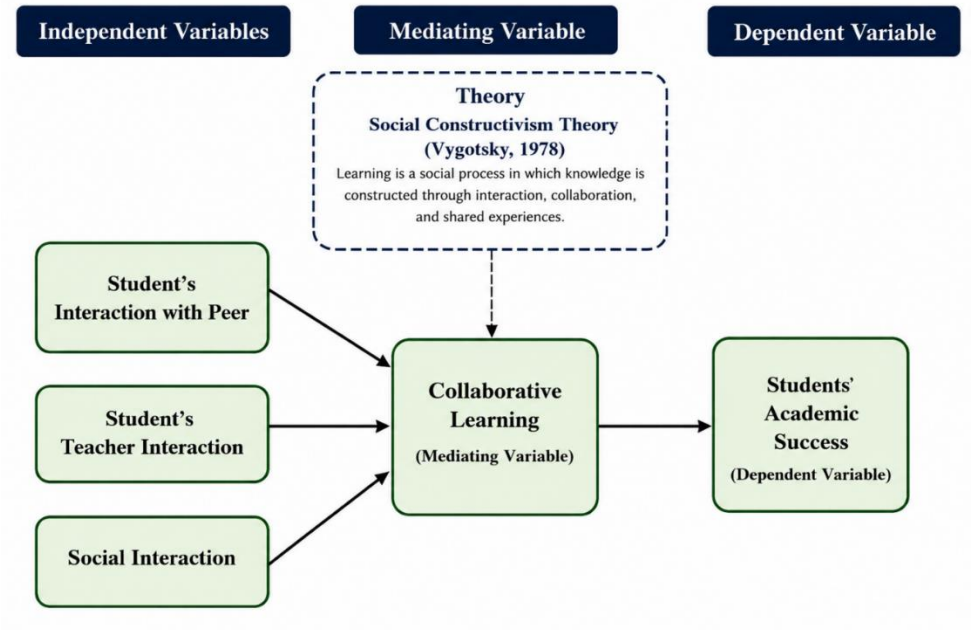
This study uses Vygotsky's (1978) theory of social constructivism as the theoretical framework in order to further the researchers' knowledge of developing views and issues which teaching faculty and learners confront in higher education organizations. This study was carried out in order to advance the investigator's comprehension of developing perspectives and challenges (Amineh 2015). Social constructivism is a theory of communication and knowledge that focuses at how people build their understandings of their surroundings via interaction with one another.

Additionally, Akpan et al. (2020) expound that Social constructivism is a way of learning in which students work together to learn by interacting, conversing, and sharing what they know. In other words, the theory of social constructivism is based on the idea that people learn best when they talk to each other, work together, and do projects as a group (Fayaz et al., 2023). According to Akpan et al. (2020). It focuses on interaction, collaboration and group work for effective learning. Students, teachers, and fellow students all work together to create a shared understanding of the world. Facilitators lead groups of students in activities that encourage them to learn from one another. Because of these principles, including the idea that learning involves a group effort, this theory was chosen with the explicit goal of encouraging students to work together to solve problems, expand upon existing knowledge, and increase their understanding of a topic (Akpan et al., 2020).

Conceptual Framework

The conceptual framework chart has been constructed on the basis of the above literature. The model is intended to demonstrate that collaborative learning have an impact on student`s academic success. It is hypothesized that collaborative learning has significant relationship with student`s academic achievement after reviewing the literature. The model also decorates the relationship between the social factors, collaborative learning and students' achievement it was also significantly hypothesized from literature. Research will be checking each factor's impact individually on academic success of the students. The conceptual model is as follow:



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Hypothesis:
H1: Students Interaction with peer significant impacts on collaborative learning.
H2: Students Interaction with teacher significant impacts on collaborative learning.
H3: Social media Use significant impacts on collaborative learning.
H4: Collaborative learning significant impacts on student`s academic success.
Methodology:

Research Design
This research is Explanatory Sequential Mixed-Methods Design (QUAN → QUAL). The participants in this study were five private universities pre-service teachers in Karachi. The sample size is N=300 B.Ed. (2.5&1.5) students. In qualitative 10 interviews collected from B.Ed. (2.5 &1.5) students.
As a quantitative study, the five-point Likert scale questionnaire comprising 35 close-ended questions with options ranging from Strongly Disagree (SD) to Strongly Disagree (SA) was used to get the information from five private universities teacher education department.
Targeting five private universities students specializing in B.Ed. (2.5 &1.5) in Karachi as participants enhances the relevance and specificity of the study to the context under investigation. Purposive sampling used for the research. Qualitative data collected from 10 B.Ed. (2.5 &1.5) students through interviews (face to face and online) . The qualitative data analyzed through thematic analysis, where interview responses coded and organized into themes. (Braun & Clarke, 2006).
The sample size of 300 students seems robust for quantitative research, allowing for sufficient statistical power to detect meaningful relationships. Utilizing a five-point Likert scale questionnaire comprising 35 close-ended questions demonstrates a structured approach to gathering data. By employing a standardized instrument, the researchers ensure consistency in measurement across respondents, facilitating comparability and analysis of results.
The quantitative data analyzed using SPSS. Descriptive statistics (frequency, percentage, mean, and standard deviation) and inferential statistics (correlation and regression) used to analyze the data. Finally, the quantitative and qualitative findings integrated to provide a comprehensive understanding of the influence of collaborative learning on students' academic success.
Overall, the methodology outlined in the paper demonstrates a structured and rigorous approach to conducting mix method research within the field of education. By clearly delineating the research design, participant selection, data collection instrument, and analysis approach, the researchers lay a solid foundation for generating meaningful insights and contributing to the body
of knowledge in the field.

Ethical Considerations
Participants aware the purpose of the study's and privacy of the participants is save by keeping the information anonymous and storing it in a secure environment. Participation voluntary and participants could withdraw at any time without penalty. Honest data collection, data analysis and reporting.

Limitation
The first limitation of this study is that it involves only student-teachers from private universities in Karachi, so the results may not apply to other areas or types of schools in Pakistan. The study focuses only on the influence of collaborative learning on academic success and does not examine other factors that may affect students' achievement. In addition, the qualitative findings based on participants' experiences and perceptions, which may be influenced by personal biases. Time and resource constraints may also limit the size of the sample and the scope of data collection.

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Data Analyses:

Qualitative findings:

The qualitative data were analyzed using thematic analysis. Three major themes emerged from the interviews:

Theme 1: Enhanced Academic Achievement

Participants perceived collaborative learning as an effective strategy for improving their academic success. Students reported that group discussions enabled them to understand complex concepts, exchange knowledge, and learn from different perspectives. As one participant stated:

"Working with my classmates helped me understand difficult concepts more easily, which improved my performance in assessments." (Participant 1 and 3)

Similarly, another participant shared:

"Collaborative learning allowed us to share ideas and solve problems together, which helped me achieve better academic results." (Participant 4 and 6)

Theme 2: Active Learning and Engagement

The interview findings indicated that collaborative learning promoted active participation and increased students' engagement in classroom activities. Participants explained that group work motivated them to contribute to discussions and become more involved in the learning process. One participant explained: Participant 7 said, *"Collaborative activities encouraged me to participate more actively in class and remain engaged throughout the lesson."*

Another participant remarked: *"I felt more motivated to learn when working with my peers because everyone was involved in discussing and completing tasks."* (Participant 10)

Theme 3: Development of Communication and Teamwork Skills

Students highlighted that collaborative learning enhanced their communication, teamwork, and interpersonal skills. They reported gaining confidence in expressing their ideas and learning how to work effectively with others. One participant noted: *"Group work improved my confidence and taught me how to communicate effectively with others."* (Participant 5)

Likewise, another participant stated:

"Collaborative learning helped me develop teamwork skills and taught me how to respect and value different opinions." (Participant 8)

Overall, the findings suggest that collaborative learning positively influences students' academic success by promoting active engagement, knowledge sharing, communication, and teamwork among B.Ed. (2.5 &1.5) students.

Quantitative Findings:

Reliability Analysis Using Cronbach's Alpha:

Reliability relates to the consistency of findings, whereas validity refers to the authenticity of findings" (Altheide & Johnson, 1994). The phrase "reliability" relates to the measurement that produces consistent findings with equivalent values (Mohajan, 2017). It evaluates a study's accuracy, reproducibility, consistency, and reliability (Chakrabartty, 2013). The instrument tool's reliability is applied to reveal how unbiased (error-free) the instrument is, so it guarantees that measurements are consistent throughout time and across the variety of things present in the instrument. Hence, a reliability test was conducted to determine the adaptable instrument's consistency.

Table 1: Cronbach`s Alpha (N=300)

Variables	Items	Cronbach's Alpha
Students Interaction with Peer (SIP)	08	.866
Social Interaction through Media (SIM)	08	.864
Collaborative Learning(CL)	05	.812
Academic Success (AC)	05	.814
All Variables	09	.954

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Table 1 show that the value is greater than 0.7. (Hair et al., 2010) recommended 0.7 as the minimum value for Cronbach's Alpha to establish internal consistency. The Cronbach's Alpha values are 0.866 for students' interaction with peers, 0.864 for students' interaction with teachers, 0.812 for social media, 0.814 for collaborative learning, and 0.868 for students' academic success. The composite reliability value was checked and resulted in 0.954, which meets the threshold level for reliability statistics.

Regression Analysis

Regression analysis is a statistical method to establish the relationship between a dependent variable and one or more independent variables. Regression analysis aims to identify the functional form of the relationship between the variables and estimate the model parameters that best describe this relationship. The Influence of collaborative learning on students' academic success can be investigated using regression analysis. Using regression analysis, quantitatively examine the Influence of collaborative learning on students' academic success and better understand the nature of this relationship. The table below shows multiple linear regression calculations based on collaborative learning to predict interaction with peers, teacher interactions, and Interaction through social media. The results have been presented below:

Table 2: Multiple Regression

Variables	R	R Square	Adjusted R Square	Std. Error of the Estimate
SIP>SIT>SIM	.663[a]	.440	.434	16.40991

a. Predictors (Constant), SIP,SIT,SIM

Table 3: ANOVA

Model		Sum of Squares	Df	Means Square	F	Sig
1	Regression	60481.433	3	20160.478	74.867	000[b]
	Residual	77015.550	286	269.285		
	Total	137496.983	289			

In the above model summary, which is multiple regression. Table 2 shows that the value of R is 0.663, R square = 0 .440 with a total variation of 44% in the dependent variable. The value of adjusted R2 is .434, which shows the goodness of fit for the regression model. The value of R shows multiple correlations of SIP, SIT, and SIM based on CL. Table 3 shows that the R2 value is 0.440 with a total variation of 44 %, so the ANOVA table shows that the R square is significantly impacted because the p-value is less than 0.05. It shows it is significant. The p-value is 0.000 in table 7, which shows the goodness of fit for the regression model. In addition, the unstandardized coefficient shows B= .028, which represents the slope of the line between the dependent (CL) and the predictor variable (SIP).

Table 4: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	23.034	4.993		4.614	.000

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IP	.124	.028	.315	4.459	**.000**
STI	.123	.029	.294	4.282	**.000**
SIM	.128	.046	.319	4.464	**.000**

a. Dependent Variable: CL

Standardized coefficient, i.e., Beta β =0.315, the t value is 4.459. Beta, which reveals that the effectiveness of the predictor variable (SIP) on the dependent variable (CL) is quite strong, and the level of significance is P = .000, which is also significant because it is < 0.05. Hence, there is a significant relationship between SIP and CL. The second variable is student interaction with peers. The unstandardized coefficient, which shows B= .029, represents the slope of the line between the dependent (CL) and the predictor variable (SIT). Standardized coefficient, i.e., Beta β =0. .294, the t value is 4.282. Beta, which reveals that the effectiveness of the predictor variable (SIT) on the dependent variable (CL) is strong, and the level of significance is P = .000, which is also significant because it is < 0.05. Hence, there is a significant relationship between SIT and CL. The third variable is social media use; the unstandardized coefficient shows B= .046. Standardized coefficient, i.e., Beta β =0.128, the t value is 2.124. Beta, which reveals that the effectiveness of the predictor variable (SIM) on the dependent variable (CL) is strong, and the level of significance is P = .000, which is also significant because it is < 0.05. Hence, there is a significant relationship between the use of social media (SIM) and collaborative learning (CL)

Table 5: Hypothesis testing summary

Hypothesis	Regression Weight	Beta coefficient	R^2	F	t.value	p.value	Hypothesis supported
H1	**SIP > CL**	.617	0.380	177.134	13.309	0.000	**Supported**
H2	**SIT > CL**	.608	.370	169.300	13.012	0.000	**Supported**
H3	**SIM > CL**	.516	.266	104.307	104.30	0.000	**Supported**
H3	**CL > SAC**	.621	.385	180.63	13.440	0.000	**Supported**

Table 5 shows the summary of the findings. The first hypothesis **H1** there is significant relationship between SIP and CL. SIP significantly predicted CL, F=177.134 ,p<0.000, which indicates that the SIP can play a significant role in shaping CL(b=0.617,p<0.000).Moreover, the R^2 =0.380 depicts that student interaction with peer (SIP) accounts for 38% variation in (CL). This supports the first hypothesis stating "Students interaction with peer significantly impact on collaborative learning.

H2 there is significant relationship between student interaction with teacher (SIT) and collaborative learning (CL). SIT significantly predicted CL, F=169.300, p<0.000, which indicates that the SIT can play a significant role in shaping CL (b=0.617, p<0.000). Moreover, the R^2 =370 depicts that the model explain 37% of the variation in CL).

This supports the second hypothesis stating "Students interaction with teacher significantly impact on collaborative learning.

H3 there is significant relationship between SIM and CL. Use of Social media significantly predicted CL, F=104.307, p<0.000, which indicates that the SIM can play a significant role in shaping CL (b=.516, p<0.000).Moreover, the R^2 =0.266 depicts that (SIM) accounts for 26% variation in (CL). This supports the third

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hypothesis stating, "Social media use significantly impact on collaborative learning.

H4 there is significant relationship between CL and SAC. Collaborative Learning significantly predicted student`s academic success (SAC), F=180.631, p<0.000) which indicates that the CL is playing significant role in shaping student`s academic success (SAC) (b=0.621, p<0.000).Moreover, the R^2 =0.385, it can conclude that the use of collaborative learning (CL) accounts for 38% variation in (SAC). This supports the forth hypothesis stating "Collaborative learning significantly impact on student`s academic success. The forth hypotheses also accepted. Student`s interaction with peer (SIP), interaction with teacher (SIT) and the use of Interaction through social media (SIM) influence on CL and CL significantly impact on SAC. The entire hypothesis accepted.

Table 6: Results of Mediation Analyses

Hypotheses	Coefficient	P Value	LLCI	ULCI	Result	Conclusion
SIP >CL>SAC	.2170	.000	.0954	.3550	Supported	Partial mediation
SIT >CL>SAC	.3207	.000	.1979	.4634	Supported	Partial mediation
SIM>CL>SAC	.4865	.000	.3104	.7015	Supported	Partial mediation

*Note: SIP, student interaction with peers; SIT, student interaction with teachers; SIM, social media use; CL, collaborative learning; SAC, student academic success. SRW, ***denotes significance at 1%*

The study assessed the mediating role of CL. Table 6 shows the results revealed significant indirect effect of SIP on SAC through CL (b= .2170,p = 0.000)supported H1. LLCI is .0954 and ULCI is .3550. Since boots LLCI and ULCI value, there is no zero between the two values, as CL is significantly mediate for independent variables SIP, SIT, and SMU and the dependent variable SAC. This mediation is partial. The effect of SIT on SAC through CL (b=.3207, p = 0.000) has a significant indirect effect. The effect of SIM on SAC through CL (b=.4865, p = 0.000) has a significant indirect effect. The summary of the mediation analyses is presented in table 6 above.

Discussion:

The study investigated the direct associations between students' interactions with peers, instructors, and social media and their engagement in collaborative learning, as well as the subsequent impact of CL on academic success .(Qureshi et al., 2021) Findings indicate that CL acts as a partial mediator in these relationships. Qualitative thematic analysis of the data identified three primary themes: Enhanced Academic Achievement, Active Learning and Engagement, and Development of Communication and Teamwork Skills.(Jeppu et al., 2023, p. 736) Furthermore, these findings underscore how social media facilitates knowledge exchange and critical thinking by enabling students to evaluate diverse perspectives through structured online discourse (Bandono et al., 2023, p. 211; Zin et al., 2024, p. 262).

Quantitative results corroborated these observations, confirming that student interaction with peers, teachers, and social media platforms positively correlates with collaborative learning, which in turn fosters academic success. Consistent with existing empirical research, this study underscores that CL promotes knowledge construction, deeper comprehension, and critical thinking by facilitating effective information exchange and educator support.(Sappaile et al.,

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2025) Furthermore, the analysis validated all proposed hypotheses, demonstrating that students' interactions significantly influence academic success through the partial mediation of collaborative learning. These findings align with social constructivist frameworks, suggesting that the integration of digital tools and interpersonal engagement effectively nurtures a dynamic environment for collective knowledge building (Nazeef et al., 2024; Qureshi et al., 2021).

Recommendations:

- Higher education institutions should promote collaborative learning activities in classrooms to enhance students' academic success, engagement, communication, and teamwork skills.
- Teacher educators should provide structured opportunities for group work and ensure equal participation of all students during collaborative learning activities.

Recommendations for Future Researchers:

- Future researchers should employ longitudinal studies and use multiple data collection methods, such as interviews and observations, to gain a deeper understanding of collaborative learning.
- Future studies should investigate additional factors that may influence academic success, including learning styles, cognitive abilities, and motivation.
- Researchers are encouraged to use objective measures alongside self-reported data to improve the validity and reliability of findings.
- Future research should explore the role of digital technologies and online learning platforms in supporting collaborative learning and academic success.

References:

Acharya, B., Sigdel, S., & Poudel, O. (2024). Analysis of effectiveness of collaborative pedagogy practices. *NPRC Journal of Multidisciplinary Research, 1*(4), 172–184. https://doi.org/10.3126/nprcjmr.v1i4.70965

Adeyemo, O. A., Abiola, O. B., Ajibola, O., & Olatunji, K. A. (2021). Student-centered group-based learning system. *International Journal of Information, 10*(6).

Al-Rahmi, A. M., Shamsuddin, A., Wahab, E., Al-Rahmi, W. M., Alismaiel, O. A., & Crawford, J. (2022). Social media usage and acceptance in higher education: A structural equation model. *Frontiers in Education*.

Ariani, S., & Valiantien, N. M. (2022). Collaborative learning for enhancing student academic achievement in online grammar class: An experimental study. *Journal of English as a Foreign Language Teaching and Research, 2*(1), 50–58.

Bandono, A., Mukhlis, M., Susilo, A., & Prabowo, A. R. (2023). Collaborative learning in higher education in the fourth industrial revolution: A systematic literature review and future research. *International Journal of Learning, Teaching and Educational Research, 22*(10), 209–230. https://doi.org/10.26803/ijlter.22.10.12

Bukhari, S. U. P., Kalhoro, I. A., Lashari, A. A., Soomro, I. A., Batool, S., & Amur, A. (2023). The communication barriers and their impacts on the academic performance of the graduate students. *Journal of Positive School Psychology*, 7(5), 605-612.

Buriro, S. A., Mirjat, M. A., Pathan, R. L., Chandio, I., Lashari, A. A., & Gul, H. (2023). Eco-Friendly pedagogies for STEM education: A review. *Journal of Namibian Studies: History Politics Culture*, *34*(S2), 3018-3044.

Cerón-García, M. C., López-Rosales, L., Gallardo-Rodríguez, J. J., Navarro-López, E., Sánchez-Mirón, A., & García-Camacho, F. (2022). Jigsaw cooperative learning of multistage counter-current liquid-liquid extraction using Mathcad®. *Education for Chemical Engineers, 38*, 1–13.

ISSN (Online): 3006-2071 | ISSN (Print): 3006-2063
Volume 4 • Issue 2 • 2026

Chen, C., & Huang, M.-Y. (2024). Enhancing programming learning performance through a jigsaw collaborative learning method in a metaverse virtual space. *International Journal of STEM Education, 11*(1). https://doi.org/10.1186/s40594-024-00495-2

Fayyaz, S., Lashari, A. A., Channar, H. B., Chang, M. A., Bano, N., & Buriro, S. A. (2023). Impacts of newly government-inducted teachers' performance on learners' outcomes. *Al-Qanṭara*, *9*(4), 262-279.

Gangmei, D. P. (2024). Assessing the impact of collaborative learning strategies on pre-service teachers' teamwork, communication, and metacognitive abilities: A mixed-methods study. 7655–7665. https://doi.org/10.53555/kuey.v30i5.4219

Huang, H.-W. (2021). Effects of smartphone-based collaborative vlog projects on EFL learners' speaking performance and learning engagement. *Australasian Journal of Educational Technology*, 18–40. https://doi.org/10.14742/ajet.6623

Jeppu, A. K., Kumar, K. A., & Sethi, A. (2023). "We work together as a group": Implications of jigsaw cooperative learning. *BMC Medical Education, 23*(1), 734. https://doi.org/10.1186/s12909-023-04734-y

Jilani, S. A. A. S., Lashari, A. A., & Bukhari, S. S. H. (2022). Organizational Culture of Successful Secondary School in District Larkana: An Ethnographic Research. *Global Educational Studies Review*, *7*(2), 626-634.

Khan, E., Lashari, A., & Iqbal, N. (2022). Stakeholders' development: A paradigm shift of human resource development (HRD). *GMJACS*, *12*(2), 104-118.

Lashari, A. A., Umrani, S., & Buriro, G. A. (2021). Learners' self-regulation and autonomy in learning English language. *Pakistan Languages and Humanities Review*, *5*(2), 115-130.

Lashari, A. A., & Umrani, S. (2023). Reimagining self-directed learning language in the age of Artificial Intelligence: A systematic review. *Grassroots (1726-0396)*, *57*(1), 92.

Li, J., Lin, Y., Sun, M., & Shadiev, R. (2020). Socially shared regulation of learning in game-based collaborative learning environments promotes algorithmic thinking, learning participation and positive learning attitudes. *Interactive Learning Environments*, 1–12.

Nazeef, N. M., Khan, A. A., & Ali, J. (2024). Impact of collaborative learning on students' academic performance in teacher education program. *Journal of Asian Development Studies, 13*(1), 1054–1068. https://doi.org/10.62345/jads.2024.13.1.87

Qureshi, M. A., Khaskheli, A., Qureshi, J. A., Raza, S. A., & Yousufi, S. Q. (2021). Factors affecting students' learning performance through collaborative learning and engagement. *Interactive Learning Environments, 31*(4), 2371–2391. https://doi.org/10.1080/10494820.2021.1884886

Sappaile, B. I., Mokay, M. M., Supendi, D., Smas, M. H., & Rais, R. (2025). Analysis of the effectiveness of collaborative learning in enhancing academic achievement in junior high schools. *International Journal of Educational Research Excellence, 4*(1), 225–231. https://doi.org/10.55299/ijere.v4i1.925

Schwarz, B. B., Swidan, O., Prusak, N., & Palatnik, A. (2021). Collaborative learning in mathematics classrooms: Can teachers understand progress of concurrent collaborating groups? *Computers & Education, 165*, 104151.

ISSN (Online): 3006-2071 | ISSN (Print): 3006-2063
Volume 4 • Issue 2 • 2026

Soipimai, W., & Sanrattana, W. (2023). Collaborative practices to empower teachers' capacities for the 21st century. *World Journal of Education, 13*(1), 30–30. https://doi.org/10.5430/wje.v13n1p30

Wieman, C. (2019). Expertise in university teaching and the implications for teaching effectiveness, evaluation and training. *Daedalus, 148*(4), 47–78. https://doi.org/10.1162/daed_a_01760

Zhou, X., Chen, L. H., & Chen, C. L. (2019). Collaborative learning by teaching: Pedagogy between learner-centered and learner-driven. *Sustainability, 11*(4), 1174.

Zin, S. H. H. M., Zakaria, S. H., Hassim, N. H., Nor, R. C. M., Rosnan, S., & Shafee, C. M. N. M. (2024). The mediating role of social media usage as a learning tool on students' academic performance: A structural equation modelling (SEM-AMOS) approach. *Information Management and Business Review, 16*, 260–275. https://doi.org/10.22610/imbr.v16i2(i)s.3757