NUSANTARA EDUCATION STUDIES
Volume 1, Issue 2, December 2023 | pp. 89-104
https://doi.org/10.54518/nes.1.2.2023.1231

Collaborative Learning and Academic Performance in Higher Education

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ABSTRACT

Collaborative learning has become an important student-centered instructional approach for improving academic performance in higher education. This study examines the relationship between collaborative learning and academic performance through a Systematic Literature Review (SLR) using the PRISMA 2020 framework. Studies published between 2019 and 2023 were systematically collected from major academic databases and analyzed using thematic analysis. The findings indicate that collaborative learning positively influences academic performance by enhancing student engagement, knowledge construction, communication skills, teamwork, and critical thinking. Effective implementation depends on instructor facilitation, balanced group participation, supportive learning environments, and appropriate collaborative activities. However, challenges such as unequal participation, group coordination, communication barriers, and technology integration continue to affect learning effectiveness. The study concludes that collaborative learning is an effective instructional strategy for improving academic achievement while developing essential professional competencies in higher education.

Keywords: *Collaborative Learning, Academic Performance, Higher Education, Teamwork, Student Engagement, Critical Thinking.*

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ARTICLE HISTORY
Received : July 27, 2023
Final Revised : September 29, 2023
Accepted : November 25, 2023
Published : December 30, 2023

1. | INTRODUCTION

Collaborative learning has become one of the most widely adopted instructional approaches in higher education because it encourages students to construct knowledge through interaction, communication, and shared problem-solving. Rather than learning individually, students work together to achieve common academic goals, exchange perspectives, and develop deeper understanding through active participation. As higher education increasingly emphasizes student-centered learning, collaborative learning has gained significant attention as an effective pedagogical strategy for improving both academic performance and essential interpersonal competencies.

Collaborative learning refers to an instructional approach in which students actively engage in learning by working together in small groups to accomplish shared learning objectives. This approach is grounded in the belief that knowledge is constructed through social interaction, discussion, and cooperation rather than passive reception of information. Panitz and Panitz (2021) explain that collaborative learning promotes mutual responsibility among learners, encouraging students to contribute equally while learning from one another. Similarly, Herrera-Pavo (2021) argues that collaborative learning has become increasingly important in higher education because it supports meaningful interaction and knowledge construction in both traditional and virtual learning environments.

The growing demand for graduates equipped with communication, teamwork, and problem-solving skills has further strengthened the implementation of collaborative learning in universities. Contemporary workplaces require professionals who can work effectively in multidisciplinary teams, communicate ideas clearly, and solve complex problems collaboratively. Consequently, higher education institutions increasingly integrate collaborative learning into teaching practices to prepare students for professional environments. Robbins and Hoggan (2019) note that collaborative learning contributes not only to academic development but also to graduate employability by strengthening interpersonal and collaborative competencies required in modern workplaces.

One of the primary educational advantages of collaborative learning is its positive influence on academic performance. Learning through collaboration enables students to exchange ideas, clarify misunderstandings, and construct knowledge collectively, resulting in deeper understanding of learning materials. Rafique et al. (2021) found that integrating collaborative learning with learning analytics significantly improves students' academic performance by supporting active participation and continuous monitoring of learning activities. Likewise, Vlachopoulos, Jan, and Buckton (2020) demonstrate that team-based learning, as one form of collaborative learning, enhances students' academic achievement by promoting active engagement and shared responsibility during learning.

Collaborative learning also contributes to the development of higher-order thinking skills. Through group discussions, collaborative problem-solving, and peer interaction,

students are encouraged to analyze information critically, justify their opinions, and evaluate alternative perspectives. Warsah et al. (2021) report that collaborative learning significantly improves learners' critical thinking skills because students actively participate in knowledge construction through discussion and reflection. Similarly, Saputra et al. (2019) demonstrate that integrating collaborative learning with problem-based learning effectively develops students' critical thinking abilities while improving learning outcomes.

In addition to cognitive development, collaborative learning strengthens communication and interpersonal skills. Students working collaboratively learn to express ideas, negotiate differences, resolve conflicts, and coordinate group activities to achieve common objectives. Hidayati et al. (2020) found that collaborative learning positively influences communication and collaboration skills alongside cognitive learning outcomes. Furthermore, Okolie et al. (2022) report that collaborative learning increases student engagement and supports practical skill acquisition by encouraging active participation throughout the learning process.

Despite these educational benefits, implementing collaborative learning effectively presents several challenges. Unequal participation among group members, communication barriers, ineffective group formation, and limited instructor facilitation may reduce the effectiveness of collaborative activities. Technology-supported collaborative learning also introduces additional challenges related to digital competence, group coordination, and maintaining meaningful interaction in online learning environments. Maqtary, Mohsen, and Bechkoum (2019) identify group formation as one of the major factors influencing collaborative learning success, while Yadegaridehkordi et al. (2019) emphasize that successful adoption of online collaborative learning depends on technological readiness, user acceptance, and institutional support.

Although collaborative learning has been widely investigated, previous studies often focus on individual aspects such as teamwork, peer learning, technology-supported collaboration, or critical thinking separately. Fewer studies provide a comprehensive synthesis of how collaborative learning contributes to academic performance while simultaneously examining the factors influencing its effectiveness, educational benefits, and implementation challenges within higher education. A systematic synthesis is therefore necessary to consolidate current evidence and identify common findings across existing research.

Therefore, this study employs a Systematic Literature Review (SLR) following the PRISMA 2020 framework to examine the relationship between collaborative learning and academic performance in higher education. By synthesizing studies published between 2019 and 2023, this review aims to identify the principles of collaborative learning, factors influencing its effectiveness, educational benefits, and implementation challenges. The findings are expected to provide valuable insights for educators,

researchers, and higher education institutions seeking to strengthen collaborative teaching practices and improve student academic performance.

2. | LITERATURE REVIEW

Collaborative Learning in Higher Education

Collaborative learning has become an important pedagogical approach in higher education because it encourages students to actively construct knowledge through interaction, discussion, and shared problem-solving. Unlike traditional teacher-centered instruction, collaborative learning places students at the center of the learning process by promoting cooperation among learners to achieve common educational goals. This approach recognizes learning as a social process in which students develop understanding through communication, reflection, and collective participation.

Collaborative learning refers to instructional activities in which students work together in small groups to accomplish shared learning objectives while taking responsibility for both individual and group learning outcomes. Panitz and Panitz (2021) describe collaborative learning as an educational philosophy that emphasizes cooperation, shared responsibility, and active participation rather than competition among learners. Similarly, Herrera-Pavo (2021) explains that collaborative learning creates meaningful learning experiences by encouraging interaction, knowledge sharing, and collective problem-solving in higher education, including virtual learning environments.

The theoretical foundation of collaborative learning is based on social constructivism, which suggests that knowledge develops through social interaction and collaboration. Through discussion and cooperation, students exchange perspectives, challenge existing ideas, and construct deeper conceptual understanding. Collaborative learning therefore extends beyond completing group assignments by fostering communication, critical reflection, and shared knowledge construction. De Hei et al. (2020) further argue that collaborative learning promotes intercultural competence by enabling students from diverse backgrounds to learn through meaningful interaction and collaborative experiences.

Higher education institutions increasingly adopt collaborative learning because it aligns with student-centered education and competency-based learning. Universities seek to prepare graduates who possess not only academic knowledge but also communication skills, teamwork abilities, leadership, and collaborative problem-solving competencies required in professional environments. Robbins and Hoggan (2019) emphasize that collaborative learning contributes to graduate employability by developing interpersonal skills that are highly valued in contemporary workplaces. Consequently, collaborative learning has become an integral instructional strategy across various academic disciplines.

Collaborative learning can be implemented through multiple instructional models, including team-based learning, peer learning, cooperative learning, project-based learning, and problem-based learning. These approaches encourage students to actively

participate in learning while supporting one another in achieving shared educational objectives. Vlachopoulos, Jan, and Buckton (2020) identify team-based learning as an effective collaborative learning methodology that improves both academic engagement and knowledge acquisition. Likewise, Idris, Ion, and Seery (2019) demonstrate that peer learning strengthens students' academic experiences by facilitating knowledge exchange and social integration within higher education.

Overall, collaborative learning represents a learner-centered instructional approach that integrates cooperation, communication, and shared responsibility throughout the educational process. By encouraging students to participate actively in constructing knowledge, collaborative learning supports both academic development and the acquisition of essential professional competencies.

Collaborative Learning and Academic Performance

Academic performance represents one of the most widely investigated outcomes of collaborative learning in higher education. Numerous studies demonstrate that students participating in collaborative learning activities achieve higher levels of understanding, stronger academic performance, and improved learning outcomes compared with those learning individually. Through collaborative interaction, students actively exchange ideas, clarify misconceptions, and develop deeper conceptual understanding, contributing to more effective learning.

One important contribution of collaborative learning is its ability to strengthen knowledge construction through discussion and shared problem-solving. Students working collaboratively explain concepts to one another, compare alternative perspectives, and collectively solve academic problems, resulting in improved understanding of learning materials. Rafique et al. (2021) found that integrating collaborative learning with learning analytics significantly improves students' academic performance by encouraging active participation and continuous monitoring of learning activities. Similarly, Vlachopoulos, Jan, and Buckton (2020) report that team-based learning enhances students' academic achievement by promoting collaborative responsibility and active engagement throughout the instructional process.

Collaborative learning also improves academic performance by increasing student motivation and engagement. Working within groups encourages students to participate more actively in classroom discussions, complete learning tasks responsibly, and support peers in achieving shared learning objectives. Dunbar et al. (2018) demonstrate that collaborative learning environments positively influence students' academic performance by strengthening social self-efficacy and leadership behaviors. Likewise, Manickam and Selvam (2019) found that collaborative learning supported through social media platforms contributes positively to students' academic achievement by increasing interaction and collaborative participation.

Beyond academic achievement, collaborative learning supports meaningful learning experiences by encouraging students to become active participants rather than

passive recipients of information. Continuous interaction among learners enables students to develop confidence in expressing ideas, asking questions, and evaluating alternative viewpoints. As a result, collaborative learning contributes not only to improved academic performance but also to the development of lifelong learning skills that are essential for success in higher education and future professional practice.

Factors Influencing Collaborative Learning

The effectiveness of collaborative learning is influenced by multiple factors related to students, instructors, learning environments, and group organization. Although collaborative learning encourages active participation and shared knowledge construction, successful implementation depends on how collaborative activities are designed and facilitated. Appropriate instructional support and positive group interaction are therefore essential for achieving meaningful learning outcomes.

One of the most important factors is effective communication among group members. Collaborative learning requires students to exchange ideas, discuss problems, provide feedback, and negotiate solutions throughout the learning process. Open communication encourages learners to express different perspectives while developing mutual understanding and shared responsibility. Hidayati et al. (2020) found that collaborative learning significantly improves students' communication skills, which subsequently contribute to stronger cognitive learning outcomes and collaboration abilities. Similarly, Chein and Choo (2021) report that communication supported through social media platforms positively influences student engagement during collaborative learning activities.

Group dynamics also play a significant role in determining the success of collaborative learning. Productive groups are characterized by mutual trust, balanced participation, effective leadership, and constructive interaction among members. Conversely, unequal participation or interpersonal conflict may reduce collaboration quality and negatively affect learning outcomes. Arashpour, Lamborn, and Farzanehfar (2020) explain that group composition and inclusive participation influence collaborative learning effectiveness by shaping group interaction and decision-making processes. Likewise, Maqtary, Mohsen, and Bechkoum (2019) emphasize that appropriate group formation strategies are fundamental for creating productive collaborative learning environments.

Instructor facilitation represents another critical factor influencing collaborative learning. Rather than acting solely as knowledge providers, instructors function as facilitators who design collaborative activities, monitor group progress, encourage participation, and provide guidance when necessary. Effective facilitation ensures that collaborative learning remains focused on achieving educational objectives while supporting meaningful interaction among students. Panitz and Panitz (2021) argue that instructors play an essential role in creating learning environments that encourage cooperation, shared responsibility, and active participation throughout collaborative learning processes.

The learning environment and technological support further influence collaborative learning effectiveness. Increasing use of digital learning platforms has expanded opportunities for collaboration beyond traditional classrooms, allowing students to communicate and work together regardless of location. However, successful technology-supported collaboration requires reliable digital infrastructure and students' willingness to utilize collaborative learning tools. Yadegaridehkordi et al. (2019) found that technology acceptance significantly influences the adoption of online collaborative learning tools in higher education, while Lämsä et al. (2021) emphasize that well-designed computer-supported collaborative learning environments strengthen interaction and learning effectiveness.

Benefits of Collaborative Learning

Collaborative learning provides numerous educational benefits that extend beyond improved academic performance. Through continuous interaction with peers, students develop cognitive, interpersonal, and professional competencies that support lifelong learning. As higher education increasingly emphasizes graduate competencies alongside academic achievement, collaborative learning has become an important instructional approach for preparing students to succeed in both academic and professional settings.

One of the primary benefits of collaborative learning is the improvement of critical thinking and problem-solving skills. Group discussions encourage students to analyze information from multiple perspectives, evaluate evidence, justify opinions, and collaboratively solve complex problems. Warsah et al. (2021) found that collaborative learning significantly improves learners' critical thinking abilities by promoting active discussion and reflective learning. Similarly, Saputra et al. (2019) demonstrate that combining collaborative learning with problem-based learning strengthens students' critical thinking skills while improving academic achievement. Ramdani and Susilo (2022) further confirm through meta-analysis that collaborative learning has a positive effect on critical thinking, creative thinking, and metacognitive skills.

Collaborative learning also strengthens communication skills and teamwork competencies. Students working collaboratively learn how to express ideas clearly, listen to alternative viewpoints, negotiate differences, and coordinate group activities effectively. These interpersonal competencies are increasingly valued in higher education because they prepare graduates for multidisciplinary professional environments. Hidayati et al. (2020) report that collaborative learning improves communication skills alongside cognitive learning outcomes, while Okolie et al. (2022) found that collaborative learning increases student engagement and supports practical skill development through active participation and teamwork.

Another important benefit is increased student engagement and motivation. Collaborative activities create interactive learning environments in which students become more actively involved in discussions, group projects, and shared learning

responsibilities. Students are generally more motivated to participate when learning involves meaningful interaction with peers rather than passive information delivery. Espey (2018) explains that team-based collaborative learning enhances student participation while encouraging deeper understanding of learning materials. Consequently, collaborative learning contributes not only to improved academic performance but also to the development of essential professional competencies including teamwork, communication, leadership, and lifelong learning skills.

Challenges of Collaborative Learning

Despite its educational benefits, collaborative learning presents several challenges that may reduce its effectiveness if not managed appropriately. Successful collaboration requires balanced participation, effective communication, appropriate group organization, and continuous instructional support. When these conditions are absent, collaborative activities may fail to achieve their intended learning objectives and instead create unequal learning experiences among students.

One of the most frequently reported challenges is unequal participation among group members. In many collaborative learning activities, some students actively contribute to discussions and task completion, whereas others participate minimally and rely on their peers to complete the work. This imbalance may reduce learning opportunities for all group members while creating dissatisfaction within the group. Robbins and Hoggan (2019) identify unequal contribution as one of the primary obstacles to successful collaborative learning in higher education because it affects both academic performance and students' perceptions of fairness.

Group formation and group dynamics also influence collaborative learning outcomes. Differences in academic ability, motivation, communication styles, and interpersonal relationships may affect the quality of collaboration. Poorly organized groups often experience conflict, ineffective communication, and difficulties reaching shared decisions. Maqtary, Mohsen, and Bechkoum (2019) emphasize that appropriate group formation strategies are essential for maximizing collaboration and minimizing interpersonal challenges. Similarly, Arashpour, Lamborn, and Farzanehfar (2020) report that group composition and inclusive participation significantly influence collaborative learning effectiveness.

The integration of digital technology introduces additional challenges for collaborative learning. Online collaborative environments require students to possess adequate digital literacy while maintaining active communication through technological platforms. Technical problems, inconsistent participation, and limited interaction may reduce the quality of online collaboration compared with face-to-face learning. Yadegaridehkordi et al. (2019) found that technology acceptance is a major factor influencing students' willingness to adopt online collaborative learning tools. Likewise, Silva, Mendes, and Gomes (2020) highlight that computer-supported collaborative learning requires careful instructional design to maintain meaningful interaction and effective collaboration.

Instructor facilitation represents another important challenge. Collaborative learning is most effective when instructors actively monitor group progress, provide timely guidance, and address collaboration problems during learning activities. Without appropriate facilitation, students may struggle to coordinate group tasks, resolve disagreements, or maintain equal participation. Therefore, instructors require sufficient pedagogical knowledge to design collaborative activities that encourage productive interaction and shared responsibility among learners.

Overall, the literature suggests that successful collaborative learning depends on careful instructional planning, balanced group participation, effective communication, and supportive learning environments. Addressing these challenges enables higher education institutions to maximize the educational benefits of collaborative learning while promoting equitable participation and meaningful knowledge construction.

3. | RESEARCH METHOD

This study employed a qualitative Systematic Literature Review (SLR) to examine the relationship between collaborative learning and academic performance in higher education. The review synthesized previous empirical studies to identify the principles of collaborative learning, factors influencing its effectiveness, educational benefits, and implementation challenges within university learning environments.

The review followed the PRISMA 2020 (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework proposed by Page et al. (2021). The review process consisted of four stages: identification, screening, eligibility assessment, and inclusion of relevant studies. This systematic procedure ensured transparency, consistency, and rigor throughout the literature selection process.

Relevant studies were identified through Scopus, ScienceDirect, SpringerLink, ERIC, Taylor & Francis Online, Wiley Online Library, IEEE Xplore, and Google Scholar. The search employed combinations of keywords including *collaborative learning*, *cooperative learning*, *peer learning*, *team-based learning*, *academic performance*, *higher education*, *student engagement*, *critical thinking*, *communication skills*, and *group dynamics*. Only English-language publications published between 2019 and 2023 were included to reflect contemporary developments in collaborative learning research.

The inclusion criteria comprised peer-reviewed journal articles, conference proceedings, systematic literature reviews, and scholarly book chapters focusing on collaborative learning within higher education. Studies discussing academic performance, student engagement, teamwork, communication skills, critical thinking, peer learning, and technology-supported collaborative learning were included. Editorial articles, duplicate publications, opinion papers, and studies conducted outside higher education contexts were excluded from the review.

The selected studies were analyzed using thematic analysis. The findings were organized into five themes: (1) collaborative learning in higher education, (2)

collaborative learning and academic performance, (3) factors influencing collaborative learning, (4) benefits of collaborative learning, and (5) challenges of collaborative learning. This thematic organization enabled a comprehensive synthesis of current evidence regarding how collaborative learning contributes to improving academic performance in higher education.

The analytical framework positions collaborative learning as a student-centered instructional approach that improves academic performance through active interaction, shared knowledge construction, communication, and teamwork. The framework also recognizes instructor facilitation, group dynamics, communication quality, technological support, and student participation as important factors influencing the successful implementation of collaborative learning in higher education.

4. | RESULTS

The findings of this systematic literature review indicate that collaborative learning has a positive influence on academic performance in higher education. Across the reviewed studies, collaborative learning consistently promotes deeper knowledge construction, higher student engagement, improved communication skills, stronger critical thinking, and enhanced teamwork competencies. The literature also demonstrates that successful collaborative learning depends on effective group interaction, instructor facilitation, and appropriate learning environments.

One of the most consistent findings is the positive relationship between collaborative learning and academic performance. Students who participate actively in collaborative learning activities generally demonstrate better understanding of learning materials and achieve higher academic outcomes than those learning individually. Through discussion, shared problem-solving, and collective knowledge construction, learners are able to clarify concepts and strengthen their understanding. Rafique et al. (2021) found that integrating collaborative learning with learning analytics significantly improves students' academic performance by encouraging active participation and continuous monitoring of learning activities. Similarly, Vlachopoulos, Jan, and Buckton (2020) reported that team-based learning enhances academic achievement by increasing student engagement and shared responsibility throughout the learning process.

The review also highlights the contribution of collaborative learning to student engagement and knowledge construction. Collaborative activities encourage students to participate actively in discussions, exchange ideas, and support one another in achieving shared learning goals. This interactive learning process enables students to become active contributors rather than passive recipients of information. Herrera-Pavo (2021) explains that collaborative learning strengthens meaningful interaction and knowledge construction in both traditional and virtual higher education environments. Likewise, Okolie et al. (2022) found that collaborative learning increases student engagement while improving practical skill acquisition through active participation and teamwork.

Another important finding concerns the development of higher-order thinking skills through collaborative learning. Students working collaboratively are encouraged to analyze information critically, evaluate different perspectives, justify opinions, and solve problems collectively. These learning experiences contribute to stronger critical thinking and communication abilities alongside academic achievement. Warsah et al. (2021) report that collaborative learning significantly improves critical thinking by promoting discussion and reflective learning. Similarly, Ramdani and Susilo (2022) conclude through meta-analysis that collaborative learning positively affects critical thinking, creative thinking, and metacognitive skills. Hidayati et al. (2020) further demonstrate that collaborative learning simultaneously strengthens communication skills and cognitive learning outcomes.

The reviewed studies further indicate that instructor facilitation and group dynamics significantly influence collaborative learning effectiveness. Productive collaboration requires clear learning objectives, balanced participation, constructive communication, and appropriate instructional guidance. Panitz and Panitz (2021) emphasize that instructors play an important role in creating collaborative learning environments that encourage cooperation and shared responsibility. Likewise, Arashpour, Lamborn, and Farzanehfar (2020) report that group composition and inclusive participation strongly influence collaboration quality and learning outcomes.

Despite these educational benefits, several challenges continue to affect collaborative learning implementation. Unequal participation among group members, communication difficulties, ineffective group formation, and technological limitations may reduce collaboration quality and learning effectiveness. Maqtary, Mohsen, and Bechkoum (2019) identify group formation strategies as one of the key determinants of successful collaborative learning, while Yadegaridehkordi et al. (2019) emphasize that technology acceptance influences the successful adoption of online collaborative learning tools in higher education. Silva, Mendes, and Gomes (2020) similarly highlight the importance of appropriate instructional design in computer-supported collaborative learning environments.

Overall, the reviewed literature demonstrates that collaborative learning contributes substantially to improving academic performance by strengthening knowledge construction, student engagement, communication skills, teamwork, and critical thinking. However, maximizing these educational benefits requires effective instructional facilitation, balanced group participation, appropriate learning environments, and continuous institutional support.

5. | DISCUSSION

The findings demonstrate that collaborative learning is an effective student-centered instructional approach for improving academic performance in higher education. By encouraging interaction, cooperation, and shared responsibility, collaborative learning enables students to construct knowledge collectively while

developing essential interpersonal and professional competencies. The reviewed literature consistently indicates that collaborative learning contributes not only to academic achievement but also to the broader development of skills required for lifelong learning and professional success.

One of the principal findings of this review is the positive relationship between collaborative learning and academic performance. Students participating in collaborative learning activities generally demonstrate better understanding of course content because learning occurs through discussion, explanation, and shared problem-solving rather than passive knowledge acquisition. The exchange of ideas among peers encourages learners to clarify concepts, evaluate different perspectives, and strengthen conceptual understanding. These findings suggest that collaborative learning supports meaningful learning experiences that extend beyond memorization and contribute to long-term academic development.

The review also emphasizes the importance of communication and teamwork in determining the effectiveness of collaborative learning. Productive collaboration depends on students' ability to communicate openly, share responsibilities, and work toward common learning objectives. Through collaborative activities, learners develop communication skills, interpersonal competence, and leadership abilities that are increasingly valued in higher education and professional environments. These competencies complement academic knowledge and prepare graduates to work effectively within multidisciplinary teams.

Another important finding concerns the contribution of collaborative learning to critical thinking and problem-solving. Group discussions encourage students to analyze information critically, justify their opinions using evidence, and consider alternative viewpoints before reaching conclusions. Such learning experiences promote deeper cognitive engagement compared with traditional lecture-based instruction. Collaborative learning therefore supports the development of higher-order thinking skills that are essential for addressing complex academic and professional challenges.

The findings further indicate that instructor facilitation plays a central role in successful collaborative learning. Effective instructors design meaningful collaborative activities, establish clear learning objectives, monitor group interaction, and provide guidance when students encounter difficulties. Well-structured collaborative learning environments encourage balanced participation and ensure that every student contributes to the learning process. Consequently, instructor competence remains a critical factor in maximizing the educational benefits of collaborative learning.

Despite these advantages, the review identifies several implementation challenges. Unequal participation among group members, communication barriers, ineffective group formation, and technological limitations continue to affect collaborative learning outcomes. Students may experience unequal workloads or interpersonal conflicts that reduce learning effectiveness, while online collaborative learning environments require additional technological and communication competencies. These challenges suggest

that collaborative learning should be supported by appropriate instructional planning, clear group responsibilities, and institutional resources that facilitate productive collaboration.

Overall, the findings indicate that collaborative learning represents a valuable instructional strategy for improving academic performance while simultaneously developing communication, teamwork, and critical thinking skills. Higher education institutions should continue integrating collaborative learning into teaching practices and provide instructors with appropriate pedagogical support to design effective collaborative learning experiences. Strengthening collaborative learning practices will help universities prepare graduates who possess both strong academic competencies and the collaborative skills required in modern professional environments.

6. | CONCLUSION

This study examined the relationship between collaborative learning and academic performance in higher education through a Systematic Literature Review (SLR) using the PRISMA 2020 framework. By synthesizing studies published between 2019 and 2023, the review identified the principles of collaborative learning, factors influencing its effectiveness, educational benefits, and implementation challenges within higher education.

The findings indicate that collaborative learning positively contributes to academic performance by promoting active participation, shared knowledge construction, communication, teamwork, and critical thinking. Students who engage in collaborative learning activities demonstrate stronger academic achievement while simultaneously developing interpersonal competencies that support lifelong learning and professional success. Furthermore, instructor facilitation, effective communication, balanced group participation, and supportive learning environments are essential factors for successful collaborative learning implementation.

However, collaborative learning also faces several challenges, including unequal participation, group coordination, communication barriers, and technological limitations in online learning environments. Addressing these challenges requires effective instructional design, appropriate group management, and institutional support to ensure that collaborative activities provide meaningful learning experiences for all students.

Overall, collaborative learning represents an effective student-centered instructional approach for improving academic performance and developing essential twenty-first-century competencies in higher education. Universities should continue strengthening collaborative learning practices through well-designed instructional strategies, professional development for instructors, and supportive learning environments. Future research may further explore innovative collaborative learning models across different disciplines and educational contexts to enhance student learning outcomes and graduate preparedness.

Acknowledgement

We gratefully acknowledge the contributions of individuals who supported the completion of this article.

Declaration of Conflicting Interests

The authors declare that there is no conflict of interest.

Ethical Approval and Originality Statement

Ethical approval was obtained for this study. The manuscript represents original work and has not been previously published, nor is it under consideration by another journal.

Data Disclosure Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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