Sociocultural Theory in the 21st-Century Philippine Secondary Classroom: A Systematic Review of Collaborative Learning and Student Achievement

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ABSTRACT

This systematic literature review explores the influence of collaborative learning strategies on academic achievement and student engagement among secondary school students in the Philippines. Grounded in Vygotsky's Sociocultural Theory, the review synthesizes findings from five peer-reviewed studies published between 2021 and 2024. These studies investigated a range of collaborative approaches, including Think-Pair-Share, peer tutoring, structured group discussions, cooperative reading tasks, and hybrid models that combine collaborative and individual learning. The analysis reveals that collaborative learning consistently supports improved academic performance across disciplines such as science, mathematics, reading, and economics. Students exposed to collaborative strategies demonstrated higher test scores, deeper critical thinking, and increased motivation to learn. Moreover, these approaches fostered positive behavioral and emotional engagement, evidenced by greater participation, peer communication, and classroom involvement. While contextual factors such as grade level influenced outcomes, the overall results affirm the value of collaborative learning as an effective pedagogical approach in 21st-century education. The study highlights the importance of integrating social interaction into instructional design to promote both cognitive and social-emotional growth.

Keywords: Collaborative Learning, Academic Achievement, Student Engagement, Secondary Education, Sociocultural Theory.

INTRODUCTION

In recent years, the Philippine education system has increasingly emphasized learner-centered, collaborative, and outcomes-based teaching methods, especially in response to evolving 21st-century competencies. Among these strategies, collaborative learning has gained traction in secondary classrooms, not only as a tool for engagement but as a proven method to improve academic achievement. This approach fosters communication, critical thinking, and teamwork; skills recognized as essential for today's learners. In 2022, the Philippines ranked 77th out of 81 countries in reading, mathematics, and science performance according to the Programme for International Student Assessment (PISA), underscoring the urgent need for effective pedagogical interventions like collaborative learning (Palisbo et al., 2025).

Collaborative learning aligns closely with Sociocultural Theory, particularly Vygotsky's notion of the Zone of Proximal Development (ZPD), which asserts that learners can perform better through guided interaction with peers or mentors. Studies in Philippine secondary schools support this premise. For instance, students exposed to collaborative rotation strategies in Geometry classes showed significant gains in academic performance and classroom engagement (Palisbo et al., 2025). Similarly, collaborative-individual approaches have been shown to significantly boost critical thinking among Grade 10 students (Viado & Espiritu, 2023). These outcomes suggest that when structured correctly, peer-based learning environments can be powerful catalysts for

academic growth.

Kong (2021) found that collaborative activities not only improved academic performance among struggling students but also encouraged the development of teamwork skills and learner autonomy in senior high schools. Additionally, Gaad (2022) demonstrated that Online Collaborative Learning (OCL) significantly enhanced both achievement and engagement in physical science classes, affirming its relevance in both in-person and digital environments. These findings contribute evidence to the growing call for integrating collaborative pedagogies within standard curricular practices.

Despite growing interest, there remains a notable gap in systematic syntheses of how collaborative learning affects academic achievement at the secondary level in the Philippines, especially through the lens of sociocultural theory. While individual studies highlight isolated improvements, few attempts have been made to comprehensively review and consolidate findings across multiple regions and subject areas. The lack of consolidated insights makes it difficult for educators and policymakers to create standardized, evidence-based interventions. Additionally, the impact of classroom variables such as teaching strategies, peer interaction formats, and subject context remains underexplored.

This study has significant implications for improving secondary education in the country. By systematically analyzing collaborative learning practices and their academic outcomes within the theoretical framework of sociocultural learning, this research can guide educators, curriculum developers, and school leaders in refining classroom strategies. Furthermore, identifying which collaborative models work best and under what conditions, can inform teacher training, student support systems, and educational policy.

This study seeked to conduct a systematic literature review focused exclusively on Philippine-based research (2021–2025) examining the link between collaborative learning and student achievement in secondary schools, viewed through the lens of Sociocultural Theory. The objective is to identify, analyze, and synthesize key findings that illustrate how social interaction facilitates learning, and to determine which strategies are most effective in fostering academic success among Filipino secondary students.

Research Problem

To better understand the current state of collaborative learning and its impact on student achievement in Philippine basic education, this systematic review aimed to synthesize empirical findings from recent studies.

Specifically, it sought to answer the following questions:

1. How is collaborative learning implemented in secondary-level Philippine classrooms to enhance student academic achievement?
2. What effects of collaborative learning on academic performance have been reported in Philippine secondary school?
3. How do secondary school studies in the Philippines apply Sociocultural Theory to explain the relationship between collaborative learning and student achievement?

METHODOLOGY

This study utilized a systematic literature review (SLR) design to examine how collaborative learning influences student academic achievement in Philippine secondary schools, using Sociocultural Theory as a guiding framework. The review aimed to synthesize existing empirical evidence to provide a clear understanding of the patterns, outcomes, and theoretical applications of collaborative learning in the 21st-century classroom. Research articles were sourced exclusively from Google Scholar, using a structured search strategy that included combinations of key terms such as “collaborative learning,” “academic achievement,” “secondary education,” “Philippines,” and “Sociocultural Theory.” The review focused on literature published between 2021 and 2025, ensuring that only recent and relevant studies reflecting contemporary educational practices were included in the analysis.

Studies were selected based on predefined inclusion and exclusion criteria. To be included, research must be empirical, peer-reviewed, conducted within the Philippine secondary education context, and directly examine the effects or outcomes of collaborative learning on student academic achievement. Only studies published in English and accessible in full text were considered. Conversely, studies were excluded if they focused on elementary or tertiary education levels, lacked empirical data, or discussed collaborative learning without linking it to measurable academic outcomes. After careful screening, the selected studies were analyzed thematically, identifying recurring patterns, instructional strategies, and theoretical implications. The analysis was conducted manually to preserve the integrity and contextual depth of the findings across studies.

REVIEWED LITERATURE

Sociocultural Foundations of Collaborative Learning and Their Influence on Academic Achievement

Collaborative learning in secondary education is deeply grounded in Sociocultural Theory, particularly Vygotsky's concepts such as the Zone of Proximal Development (ZPD), scaffolding, and social mediation, which emphasize learning as a socially situated process. Peer interaction, dialogic exchange, and co-construction of knowledge enable learners to perform tasks beyond their independent abilities, aligning with the principle that cognitive development is inherently linked to social context. Recent studies validate these theoretical underpinnings. For instance, Rana and Rana (2022) found that although traditional pedagogies still dominate in some secondary classrooms, collaborative strategies like group work and peer support facilitate meaningful language learning and cognitive engagement when properly implemented. Similarly, Omodan et al. (2024) emphasized that Vygotsky's framework provides a practical structure for collaborative teaching, enabling both students and co-teachers to construct inclusive learning environments that nurture critical thinking and social skills.

Sociocultural Theory's relevance to academic achievement is further reinforced by evidence from experimental and thematic studies. Akinoso et al. (2021) demonstrated that while collaborative strategies may not always significantly impact test scores in mathematics, they positively shift students' attitudes toward learning which is a crucial precursor to academic success in 21st-century skills. Furthermore, Scotland (2022) highlighted that collaborative dialogue, a core aspect of Vygotskian mediation, enhances grammatical learning in second-language contexts by allowing learners to engage in scaffolded interaction and mutual regulation. These studies demonstrate how structured peer collaboration, grounded in sociocultural principles, not only supports knowledge acquisition but also builds students' confidence and metacognitive skills necessary for sustained academic performance.

Collaborative Learning Strategies Used in Philippine Secondary Schools

The reviewed literature highlights a range of collaborative learning strategies implemented in secondary schools across the Philippines from 2021 to 2024. These strategies vary in form and complexity but are all rooted in student-centered interaction, aligned with Vygotsky's Sociocultural Theory which emphasizes learning as a social process. One commonly used approach is Online Collaborative Learning (OCL), which was found effective during the pandemic through tools like Google Docs and Think-Pair-Share (TPS). This digital adaptation allowed students to collaboratively write and reflect in real time, significantly boosting engagement and comprehension in science classes (Gaad, 2022).

In face-to-face settings, other studies applied structured group work and peer tutoring, particularly in Mathematics and Economics. For instance, Montemayor and Lumabi (2022) implemented small group problem-solving and peer explanation tasks in math classes, showing improved academic performance. Viado and Espiritu (2023) introduced a hybrid model combining collaborative and individual learning, where students engaged in peer tasks during some lessons and worked independently in others. This approach promoted both social interaction and personal reflection, enhancing critical thinking in the context of Economics.

Similarly, Delos Reyes et al. (2024) employed cooperative learning frameworks that promoted team-based tasks, although the impact on achievement varied depending on students' grade levels. Their findings emphasize the importance of appropriate grouping and classroom maturity in maximizing collaborative benefits. Finally, Delima, Risonar, and Digamon (2024) used a Collaborative Learning Approach (CLA) to improve reading proficiency among Grade 7 learners. The strategy included group reading, peer discussions, and cooperative evaluation, fostering active engagement even among struggling readers.

Across these studies, the most prevalent strategies include Think-Pair-Share, small group discussions, peer tutoring, and hybrid collaborative-individual frameworks. These approaches not only support academic development but also foster essential 21st-century skills such as communication, critical thinking, and teamwork. The variation in implementation ranging from digital to in-person, from literacy to numeracy, shows that collaborative learning is a flexible and widely adopted pedagogical tool in secondary education.

Effects of Collaborative Learning on Academic Achievement

The integration of collaborative learning strategies into secondary education has consistently shown a positive effect on students' academic achievement, as demonstrated in the five reviewed Philippine-based studies. Across subjects such as science, mathematics, economics, and reading, collaborative frameworks not only enhanced comprehension but also yielded statistically significant improvements in test performance. For instance, Gaad (2022) reported that senior high school students who engaged in Online Collaborative Learning (OCL) through Think-Pair-Share activities on Google Docs demonstrated a marked increase in their post-test scores in physical science, moving from a mean of 17.17 to 31.00. This suggests that even in virtual environments, collaborative strategies can foster academic gains when thoughtfully designed and facilitated.

In the field of mathematics, Montemayor and Lumabi (2022) found that students exposed to collaborative group problem-solving performed significantly better on post-tests than those taught using traditional lecture methods. Their findings reinforce the idea that peer discussion and joint reasoning lead to deeper understanding and higher achievement in computational subjects. A similar effect was observed by Viado and Espiritu (2023), whose hybrid collaborative-individual learning model improved students' critical thinking and academic performance in economics. Their data showed a statistically significant increase in test scores ($t = 3.316$, $p < 0.05$), indicating that alternating between group work and independent tasks may provide cognitive benefits across learning contexts.

Although Delos Reyes et al. (2024) noted that cooperative learning had no significant effect on academic performance when grouped by age or gender, a significant improvement was found when grouped by grade level, suggesting that academic maturity may influence the effectiveness of collaborative strategies. Meanwhile, in the area of reading, Delima, Risonar, and Digamon (2024) documented a meaningful gain in reading proficiency among Grade 7 learners using a Collaborative Learning Approach (CLA). The experimental group scored a higher post-test average ($M = 28.04$) than the control group ($M = 23.04$), supported by a highly significant p-value (0.000), indicating that CLA was effective in enhancing even foundational literacy skills.

Taken together, these findings affirm that collaborative learning positively impacts academic performance across subject areas and grade levels. However, outcomes may vary depending on student readiness, grouping methods, and implementation context. The use of structured, theory-informed collaboration, particularly those rooted in Vygotsky's principles, appears crucial in driving academic gains.

Influence of Collaborative Learning on Student Engagement

Collaborative learning does not only influence academic performance as it also significantly enhances student engagement, motivation, and participation in the learning process. The five reviewed studies provide consistent evidence that when students are placed in interactive, peer-supported environments, they show higher levels of emotional, behavioral, and cognitive engagement. In Gaad's (2022) study on Online Collaborative Learning (OCL), student engagement was quantitatively measured using the CIP (Cooperation, Interest, Participation)

Engagement Questionnaire. Results showed statistically significant increases in all three dimensions, with students reporting heightened enthusiasm for learning and greater comfort in expressing ideas during group tasks. This underscores the idea that structured online collaboration can meaningfully replicate, and even enhance, the engagement found in face-to-face settings.

Montemayor and Lumabi (2022), although not using a formal engagement scale, noted that students participating in collaborative problem-solving in mathematics classes displayed greater enthusiasm, more active involvement, and willingness to explain their reasoning to peers. These behavioral cues were interpreted as indicators of deeper learning engagement. Similarly, Viado and Espiritu (2023) emphasized that their hybrid collaborative-individual model promoted participation, initiative, and peer communication, especially during the generalization and discussion phases of the lesson. Their rubric-based evaluations revealed students becoming more invested in the learning process when given opportunities to construct knowledge socially.

Delos Reyes et al. (2024) observed a similar pattern. Although cooperative learning's effect on academic performance was mixed, students involved in group tasks exhibited enhanced self-confidence, communication, and peer trust, especially in higher grade levels. These outcomes reflect the affective benefits of collaboration, reinforcing its role in developing students' social-emotional competencies. Lastly, in a literacy-focused intervention, Delima et al. (2024) noted that students became more engaged in reading activities when participating in collaborative group reading sessions. Peer encouragement and shared accountability were crucial in motivating struggling readers, even though their reading proficiency levels remained below national standards.

Together, these findings affirm that student engagement thrives in collaborative settings, regardless of subject area. Whether in science, math, economics, or reading, when students are given opportunities to learn with and from one another, their participation deepens, their interest in lessons increases, and their willingness to take ownership of learning is strengthened. These engagement outcomes are essential for promoting lifelong learning and achieving the goals of 21st-century education.

CONCLUSIONS

Based on the findings of the study, the following conclusions were drawn:

Collaborative learning strategies commonly used in Philippine secondary schools include Think-Pair-Share, peer tutoring, small group discussions, and hybrid collaborative-individual models. These methods promote peer interaction and active participation, supporting 21st-century learning goals.

Collaborative learning has a positive impact on academic achievement. Students exposed to group-based strategies consistently showed improved test scores and critical thinking across subjects like science, math, economics, and reading.

Collaborative learning also enhances student engagement. Learners became more motivated, participative, and communicative during collaborative tasks, contributing to improved classroom involvement and learning experiences.

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