PANTAO
(International Journal of the Humanities and Social Sciences)
Volume 5, Issue 4
ISSN 3028-0877 | e-ISSN 3155-6043 | DOI 10.69651/2022PIJHSS

Small group discussion on the academic performance in Economics of Grade 9 students

Nikki Ann A. Dahunan*
Cebu Technological University-Main Campus, Cebu City, Philippines

ABSTRACT

Small Group Discussion (SGD) is a collaborative teaching strategy that encourages students to actively participate in learning through the exchange of ideas, sharing of perspectives, and cooperative problem-solving. This strategy provides opportunities for learners to deepen their understanding of concepts, develop critical thinking skills, and improve their academic performance. In this regard, this study determined the effectiveness of Small Group Discussion (SGD) in teaching Economics, specifically the unit on Sektor ng Agrikultura, among Grade 9 students of Biabas Trade High School during the School Year 2026–2027. The study focused on three competencies: analyzing the role of agriculture, fisheries, and forestry in the economy; analyzing the causes and effects of problems in these sectors; and appreciating economic policies that support agriculture. It also examined the students' experiences in participating in SGD and served as a basis for the development of an enhanced Strategic Activity Material (SAM). A quantitative approach using a single-group pretest–posttest quasi-experimental design was employed. Forty (40) Grade 9 students participated in the study. Data were gathered through a validated teacher-made pretest and posttest and a researcher-developed questionnaire on student experiences in SGD. Descriptive statistics such as mean, percentage, standard deviation, and weighted mean were used, while paired-samples t-test was utilized to determine significant differences between pretest and posttest scores. Findings revealed that students demonstrated Satisfactory to Fairly Satisfactory performance before the implementation of SGD. After the intervention, performance improved to Satisfactory and Very Satisfactory levels across the three competencies. Statistical analysis showed a significant difference between pretest and posttest scores ($p < 0.001$), indicating that SGD effectively enhanced students' learning in Economics. Students also reported positive experiences in terms of engagement and participation, collaborative learning, learning experience, and perceived improvement in performance, with overall ratings interpreted as Often. Based on the findings, an enhanced Strategic Activity Material entitled AGRI-UGNAYAN was proposed to strengthen collaborative learning and address students' learning experiences in Economics.

Keywords: Small Group Discussion, Economics education, Araling Panlipunan 9, sektor ng agrikultura, collaborative learning, student performance, strategic activity material.

Date Submitted: September 23, 2026
Date Accepted: September 29, 2026
Date Published: October 19, 2026

*Corresponding author / Email: amoranikkiann123@gmail.com
DOI: http://doi.org/10.69651/PIJHSS05041652

Recommended citation:
Dahunan, N. A. A. (2026). Small group discussion on the academic performance in economics of Grade 9 students. Pantao (International Journal of the Humanities and Social Sciences) 5 (4), 1160-1175. http://doi.org/10.69651/PIJHSS05041652

INTRODUCTION

In modern classroom settings, a systematic approach to learning is essential to nurture the holistic development of students, encompassing their soft skills, personal strengths and weaknesses, self-discipline, personality, intelligence, and the moral character needed in contemporary society (Badan Standar Kurikulum dan Asesmen Pendidikan, 2022). To thrive as active participants in the learning process, students must be motivated to engage willingly within a collaborative, student-centered environment. Implementing active learning strategies inside the classroom establishes an empowering atmosphere that cultivates independence and creativity, supporting both physical and psychological growth. Consequently, educators must shift toward learner-centered instructional methods that stimulate active participation and create a psychologically safe classroom culture where students feel confident sharing their unique perspectives and demonstrating their diverse competencies.

In the context of the social sciences, teachers must employ strategies that transform the classroom into an interactive laboratory for civic and financial literacy. One highly effective approach is the implementation of Small Group Discussion (SGD) to delve deeper into complex topics like Economics. This method allows students to explore, investigate, establish connections, and hold conversations to reach shared conclusions within a peer-supported framework. As noted by Gonzalez (2015), SGD is often spontaneous and brief, yet it serves as a powerful tool for fostering critical thinking and ensuring that every participant feels empowered to voice their viewpoint.

Active engagement in small-group settings directly correlates with improved student achievement by promoting inquiry, higher-order thinking, and shared responsibility. When learners contribute meaningfully to a group, they experience higher levels of cognitive and emotional engagement, moving beyond rote memorization to deeper socio-economic inquiry. Research suggests that participating in these collaborative settings assists students in acquiring the teamwork and effective communication skills necessary for deeper learning, which are essential in understanding the socio-economic dynamics of the country (Vander Ark & Schneider, 2015). By delegating authority to small groups, teachers promote a democratic classroom atmosphere that ensures these exchanges are linked to structured instructional activities, thereby upholding the principles of educational equality, student rights (Marlina, 2018), and instructional sustainability (Rini, 2017).

Despite the theoretical benefits of collaborative activities in student-centered classrooms, the transition into secondary education has revealed certain challenges, including a documented decline in student performance in Social Studies at the secondary level (Estrera, 2020). Recent assessments indicate a gap between curriculum design and actual classroom performance, often attributed to traditional, teacher-centered instructional styles that fail to meet the requirements of 21st-century learners (Estrera, 2020). There is an urgent need for teachers to adjust their pedagogical styles to align with a constructivist approach, making abstract economic concepts more tangible, relatable, and applicable to daily life.

While various teaching methods such as case studies, expert panel methods, and role-playing exist, structured group discussions stand out for their specific ability to target subject-matter fluency and collaborative social interaction simultaneously (Fran, 2021). By breaking down the barriers of a large classroom setting, SGD provides a platform for all students, regardless of their individual learning styles or initial skill levels, to share their thoughts, build confidence, and learn from one another (Marlina, 2018).

Consequently, this study seeks to assess the effectiveness of Small Group Discussion (SGD) as a method of instruction in teaching Economics within the Araling Panlipunan 9 curriculum. Specifically, the study seeks to investigate how this pedagogical approach enhances the academic achievements and conceptual mastery of Grade 9 students, ensuring

they develop the critical civic competencies necessary to navigate the economic demands of the modern world.

Statement of the problem

This study aimed to ascertain the effectiveness of Small Group Discussion (SGD) in teaching Economics, specifically the unit on Sektor ng Agrikultura, among Grade 9 students of Biabas Trade High School during the school year 2026–2027, as a basis for developing enhanced learning activities.

Specifically, this study sought to answer the following questions:

1. What is the students' level of performance before the implementation of the Small Group Discussion (SGD) strategy in terms of the competencies involving the analysis of the roles of agriculture, fisheries, and forestry in the economy (Nasusuri ang bahaging ginagampanan ng agrikultura, pangingisda, at paggugubat sa ekonomiya), the analysis of the causes and effects of problems in these sectors (Nasusuri ang mga dahilan at epekto ng mga suliranin ng sektor ng agrikultura, pangingisda, at paggugubat), and the appreciation of economic policies that support the agricultural sector (Nabibigyang-halaga ang mga patakarang pang-ekonomiya na nakatutulong sa sektor ng agrikultura)?
2. What is the students' level of performance after the implementation of the Small Group Discussion (SGD) strategy in terms of the aforementioned competencies?
3. Is there a significant difference in the students' level of performance before and after the implementation of the Small Group Discussion (SGD) strategy in terms of the aforementioned competencies?
4. What is the level of students' experiences with Small Group Discussion (SGD) as a strategy for learning the topic Sektor ng Agrikultura?
5. Based on the findings of the study, what enhanced Strategic Activity Material (SAM) can be developed to address the experiences encountered by Grade 9 students in using Small Group Discussion (SGD) in Economics?

METHODOLOGY

This study employed a quantitative research design, specifically a one-group pretest–posttest and quasi-experimental design, to evaluate the effectiveness of the Small Group Discussion (SGD) method in teaching Economics within the Araling Panlipunan 9 curriculum. This design allowed for the assessment of students' academic performance and conceptual understanding of economic content, specifically focusing on the agricultural sector, before and after the implementation of the instructional intervention. Quantitative data were to be collected through the administration of pretests and posttests, which measured students' comprehension of economic concepts prior to and following exposure to the SGD method. To determine whether a significant difference existed in students' academic performance, a paired-samples t-test was used to compare the pretest and posttest scores. Through this approach, the study aimed to provide empirical evidence on the effectiveness of the Small Group Discussion method in enhancing students' academic performance and promoting collaborative, active learning within the Araling Panlipunan classroom.

The study explored how small group discussions impact Grade 9 students in Araling Panlipunan, using the Input, Process, Output (IPO) Approach to analyze information throughout the study. The input of the study included the respondents' pre-test and post-test

scores on the identified competencies in Economics (Sektor ng Agrikultura) exposed to small group discussions. The process began with a formal request to the School Principal for approval to conduct the study. It involved gathering data by giving a pre-test to assess the students' existing knowledge of the targeted learning objectives. Small group discussions were then held to evaluate the students' comprehension levels. A post-test was subsequently administered to analyze any improvement in their scores. Furthermore, a Focus Group Discussion (FGD) was conducted to gather insights on the students' perspectives and experiences during the small group discussions. The study resulted in a set of enhanced group learning activities that include small group discussions, which teachers can utilize to enhance student performance in the subject. The flow of the study, presented in the original text as Figure 2, thus proceeds from the input, through the process, to the output described above. The methodology covers the research design, data sources, study participants, conceptual framework, study location, data collection tools, and statistical analysis of the data.

The study was conducted at Biabas Trade High School (BTHS), a public secondary institution located in Barangay Biabas, Ubay, Bohol, Philippines. Situated in the largest municipality of Bohol, the school serves as a primary educational hub for a vast and socio-economically diverse rural student population, catering to learners from Grades 7 to 12 under the K-12 Basic Education Program. The location of the research environment was also presented in the original text as a location map (Figure 3). The choice of BTHS as the research environment is strategically grounded in critical enrollment statistics and institutional experiences. Over the recent years, BTHS has experienced a steady increase in student population, leading to substantial shifts in classroom dynamics. Historically, public schools in the region grapple with high student-to-teacher and student-to-space ratios, which directly impact the physical management of classrooms. These statistical and spatial constraints often present a distinct challenge when implementing learner-centered pedagogical frameworks. Furthermore, experiential observations from the faculty highlight that while BTHS consistently strives to align with national curricular guidelines in core subjects, specifically Araling Panlipunan (Social Studies), instructional implementation frequently encounters operational hurdles. During collaborative strategies such as Small Group Discussions (SGD), teachers and students navigate localized challenges, including limited classroom real estate for physical grouping, ambient noise from high-density sections, and varying levels of academic readiness and language proficiency among rural learners.

The study utilized a cluster sampling technique, wherein the population was naturally grouped into clusters based on their intact class sections or strands, including Humility, Simplicity, Generosity, Modesty and Sincerity. From these clusters, one intact class section was randomly selected to serve as the participants of the study. The selected cluster served as the study's respondents, and all students within the chosen cluster were included in the study. This approach ensured that data collection was practical and aligned with the natural classroom setting, where the Small Group Discussion (SGD) method was implemented as an instructional intervention. By using an intact class, the study minimized disruption to regular class organization while still providing relevant and reliable data on the effectiveness of the SGD method in improving students' performance in Economics. To select the specific group of respondents, single-stage cluster sampling was employed. The total Grade 9 population of Biabas Trade High School was naturally divided into five distinct sections (clusters): Humility, Simplicity, Generosity, Modesty and Sincerity. Rather than selecting individual students across all sections, the section itself served as the primary sampling unit. To ensure objectivity and eliminate selection bias, a lottery method was conducted where the names of the five sections were placed in a container, and one section was drawn at random. The chosen section, which inherently contains a heterogeneous mix of students with varying academic backgrounds, was then subjected to a complete enumeration, making all students within that specific cluster the

official respondents of the study. As shown in the distribution of respondents (Table 1), the respondents consisted of 21 male students, representing 52.50% of the respondents, and 19 female students, representing 47.50% of the respondents, for a total of 40 respondents, or 100.00%, where N refers to the total population.

To measure student learning outcomes, the researcher utilized a validated, teacher-made questionnaire formatted according to Department of Education (DepEd) assessment standards to evaluate students' mastery of the Most Essential Learning Competencies (MELCs) in the Araling Panlipunan 9 (Economics) curriculum. The development of the pre-test and post-test instruments was strictly guided by a multi-level Table of Specifications (TOS) to ensure a balanced and structurally sound 30-item test. Following current DepEd guidelines on classroom assessment, the test items were systematically distributed across the six Cognitive Process Dimensions: Remembering, Understanding, Applying, Analyzing, Evaluating, and Creating. The questions were explicitly designed as a combination of multiple-choice items and localized situational analyses, evaluating how students critical examine economic principles across the sub-sectors of farming (pagsasaka), fisheries (pangingisda), and forestry (panggugubat) within the Philippine context. While the pre-test established baseline competencies, the post-test measured knowledge retention and the academic impact of the Small Group Discussion (SGD) strategy. Both tests covered identical competencies and mirrored the exact cognitive weight distribution established in the TOS, but the post-test items were structurally rearranged to mitigate testing bias, eliminate structural familiarity, and guarantee internal validity. The validation of this 30-item cognitive instrument was initiated with formal content validation through a structured expert panel review. Subject matter experts, specifically Master Teachers and Social Sciences Department Heads, evaluated the initial item pool using an assessment rubric to verify absolute alignment with DepEd learning standards and the study's framework. For the experiential survey questionnaire, a separate validation and reliability protocol was implemented to ensure the Likert-scale items consistently measured student perceptions. After undergoing preliminary face validation by research and language experts to ensure clarity and cultural appropriateness, the survey was pilot-tested alongside the cognitive test. The internal consistency and reliability of this non-dichotomous, multi-item scale were statistically computed using Cronbach's alpha (α). The researcher targeted an alpha coefficient of 0.70 or higher, which serves as the psychometric benchmark for acceptable reliability in social science research. Achieving this threshold ensures that the sub-scales measuring engagement, expression, and challenges are stable, dependable, and free from random error, thereby validating the instrument for final administration.

The data collection process for this study was systematically carried out across three distinct phases: before, during, and after the instructional intervention. The preliminary phase focused on securing administrative clearances and preparing the research environment. The researcher first secured a formal letter of permission, duly approved by the Schools Division Superintendent (if applicable) and the Principal of Biabas Trade High School, authorizing the conduct of the study on campus. Upon receiving official approval, the researcher coordinated with the Araling Panlipunan department to schedule the activities without disrupting regular class hours. Parental consent forms and student assent forms were distributed and collected to ensure strict adherence to ethical research protocols. Finally, an orientation was conducted for the Grade 9 students within the selected cluster to explicitly explain the purpose, mechanics, and significance of the study, thereby securing their voluntary cooperation. The second phase encompassed the actual execution of the research instruments and the pedagogical intervention. First, a pre-test was administered during the scheduled Araling Panlipunan 9 class to establish the students' baseline knowledge of the Economics curriculum, specifically the Sector of

Agriculture. Following the pre-test, the researcher implemented the core intervention by integrating the Small Group Discussion (SGD) method into the instructional delivery of the designated competencies (farming, fisheries, and forestry). During these sessions, students navigated the localized collaborative activities while the researcher observed the operational flow. Immediately after the completion of the intervention timeline, the post-test was administered to measure knowledge retention and conceptual gains. The final phase involved gathering subjective insights and managing the retrieved data. Right after the post-test, the structured survey questionnaire using the 4-point Likert scale was distributed to capture the students' experiential realities, focusing on their collaborative engagement, ease of communication, and operational challenges during the SGD.

The data gathered in this study were analyzed in accordance with the research questions. The mean and standard deviation were used to describe the level of students' performance in the pretest and posttest, providing information on the central tendency and variability of scores. Frequency distribution was used to present the number of respondents according to their performance levels in both the pretest and posttest results. A paired-samples t-test was employed to determine whether there was a significant difference between the pretest and posttest scores of the respondents at a 0.05 level of significance. The quantitative data gathered from the student survey were analyzed using descriptive and inferential statistics. Responses were numerically coded to calculate mean scores, frequencies, and percentages, establishing statistically significant trends regarding the students' experiences with the Small Group Discussion (SGD) method.

To ensure a systematic evaluation of the variables in this study, two distinct scoring mechanisms were employed: one for the cognitive achievement tests (pre-test and post-test) and another for the experiential survey questionnaire. For academic performance in Araling Panlipunan 9, the students' baseline knowledge and knowledge retention regarding the Sector of Agriculture were evaluated using a 10-item teacher-made test. The raw scores were interpreted using a standardized grading scale. A score range of 9 – 10, equivalent to 90% – 100%, was categorized as Outstanding, which signifies that the student demonstrates exceptional mastery of the economic concepts. A score range of 7 – 8, equivalent to 70% – 89%, was categorized as Very Satisfactory, which signifies that the student demonstrates a high level of understanding of the competencies. A score range of 5 – 6, equivalent to 50% – 69%, was categorized as Satisfactory, which signifies that the student demonstrates a basic and acceptable understanding of the topic. A score range of 3 – 4, equivalent to 30% – 49%, was categorized as Fairly Satisfactory, which signifies that the student is beginning to grasp the concepts but requires minor intervention. A score range of 1 – 2, equivalent to Below 30%, was categorized as Did Not Meet Expectations, which signifies that the student struggles to comprehend the competencies and needs critical intervention.

To interpret the quantitative data gathered from the 4-point Likert scale survey regarding the students' operational and communicative experiences, namely Engagement, Ease of Expression, and Frequency of Challenges, which together constitute the level of experience in Small Group Discussion (SGD), the following statistical limits and descriptions were applied. A statistical range of 3.50 – 4.00, corresponding to a scale of 4 and the category Palagi (Always), was interpreted as Highly Serious Issue / Highly Evident, meaning that the described situation or challenge is experienced in every discussion. A statistical range of 2.50 – 3.49, corresponding to a scale of 3 and the category Madalas (Often), was interpreted as Serious Issue / Evident, meaning that the described situation or challenge is experienced in most discussion sessions. A statistical range of 1.50 – 2.49, corresponding to a scale of 2 and the category Paminsan-minsan (Sometimes), was interpreted as Moderate Issue / Slightly Evident, meaning that the described situation or challenge occurs occasionally. A statistical range of 1.00 – 1.49, corresponding to a scale of 1 and the category Hindi Kailanman (Never), was

ISSN 3028-0877 | e-ISSN 3155-6043 | DOI 10.69651/2022PIJHSS

interpreted as Not an Issue / Not Evident, meaning that the described situation or challenge is never encountered by the learner.

RESULTS AND DISCUSSION

This section presents and interprets the data gathered from 40 Grade 9 students of Biabas Trade High School in Ubay, Bohol, who served as respondents in a study of the effectiveness of the Small Group Discussion (SGD) method in teaching Economics, specifically the Sector of Agriculture, in Araling Panlipunan 9. The study used a quantitative, one-group pretest-posttest quasi-experimental design. Single-stage cluster sampling was applied: five Grade 9 sections (Humility, Simplicity, Generosity, Modesty, and Sincerity) were treated as clusters, one section was drawn by lottery, and all of its students were enumerated as respondents. Of the 40 respondents, 21 (52.50%) were male and 19 (47.50%) were female, for a total of 100.00%. Academic performance was measured with a teacher-made pretest and posttest scored on a 10-point scale across three competencies, and students' experiences were measured with a 4-point Likert survey. The analysis used means, standard deviations, frequency distributions, and percentages, together with weighted means for the survey and a paired-samples t-test at the 0.05 level of significance for the pretest-posttest comparison. The discussion is grounded in the data gathered, and the results are interpreted in direct relation to the objectives of the study.

Pretest performance

On Competency 1, the role of agriculture, fisheries, and forestry in the economy, no respondent reached the Outstanding band (9-10; f = 0, 0.00%) or the Did Not Meet Expectations band (1-2; f = 0, 0.00%) before the intervention. Seven respondents (17.50%) were Very Satisfactory (7-8), 24 (60.00%) were Satisfactory (5-6), and nine (22.50%) were Fairly Satisfactory (3-4), for a total of 40 (100.00%). The class mean of 5.45 (SD = 1.18) falls in the Satisfactory category under the mean legend (8.21-10.00 Outstanding, 6.41-8.20 Very Satisfactory, 4.61-6.40 Satisfactory, 2.81-4.60 Fairly Satisfactory, 1.00-2.80 Did Not Meet Expectations). Learners therefore had only baseline recognition of the sectoral roles. The relatively wide standard deviation suggests heterogeneity: a small minority was already comfortable with the material, while most learners had surface-level recall. This distribution is consistent with Marcon (2022), who documented moderate baseline mastery among Grade 7 Social Studies students in a quasi-experimental study at Passi National High School and observed that recall-level competencies tend to cluster at the Satisfactory band before discussion-based methods. It also agrees with Mahilum and Escarlos (2025), whose systematic review found that Philippine secondary learners enter collaborative instruction with varying preparedness, often around the Satisfactory midpoint. Together, this evidence indicates that SGD was introduced when Competency 1 was primed for, but had not yet achieved, mastery.

Competency 2, the analysis of the causes and effects of the problems of the agricultural, fishing, and forestry sectors, showed a markedly weaker baseline. No respondent was Outstanding (0, 0.00%), Very Satisfactory (0, 0.00%), or Did Not Meet Expectations (0, 0.00%). Eight respondents (20.00%) were Satisfactory and 32 (80.00%) were Fairly Satisfactory, for a total of 40 (100.00%). The mean of 4.05 (SD = 0.60) places the whole class in the Fairly Satisfactory category. Students could recognize sectoral problems but struggled to articulate their underlying causes and downstream effects. The narrow standard deviation shows that learners were uniformly below the desired threshold rather than widely scattered.

This mirrors Stoel et al. (2014), who reported that pretest knowledge of causal reasoning in history education clusters in the lower-middle range and who found a significant time-by-condition interaction ($F = 52.13$, $p < 0.000$), suggesting that causally framed competencies benefit substantially from explicit instructional intervention. Joe (2021) similarly documented, in a quasi-experimental comparison of modular small-group discussion and lecture discussion in Araling Panlipunan in Sulu, that pretest scores on cause-effect items converged near the Fairly Satisfactory band before learners engaged in collaborative discourse. Martínez-Hita et al. (2021) argued that analyzing causes and consequences depends on second-order historical thinking, which is rarely developed under traditional lecture conditions, supporting the lower baseline observed here.

On Competency 3, the valuing of economic policies that support the agricultural sector, no respondent was Outstanding (0, 0.00%) or Did Not Meet Expectations (0, 0.00%). Two respondents (5.00%) were Very Satisfactory, 30 (75.00%) were Satisfactory, and eight (20.00%) were Fairly Satisfactory, for a total of 40 (100.00%). The mean of 5.08 (SD = 0.76) is Satisfactory. The moderate dispersion indicates that a thin minority already appreciated key policies, while most learners had only baseline policy recognition. The absence of any Outstanding respondent suggests that valuing policy as a tool had not yet been meaningfully internalized. Serohijos et al. (2025) reported, in a single-group pretest-posttest study of the Collaborative Judgment Session Strategy in Araling Panlipunan 9 Economics at Ozamiz City Public School, that students' awareness of economic sectors before the intervention was at a Fairly Satisfactory level. Mahilum and Escarlos (2025) noted that policy-valuation competencies cluster at the Satisfactory band before intervention because learners lack structured opportunities to weigh policy options through peer dialogue. Ekahitanond (2014) added that competencies requiring value-laden judgments benefit disproportionately from peer feedback and the exchange of ideas, the scaffolding that SGD provides. Table 4 therefore captures a typical pre-intervention baseline for valuing-type competencies.

Posttest performance

After the SGD intervention, Competency 1 showed a clear upward shift. No respondent was Outstanding (0, 0.00%), Fairly Satisfactory (0, 0.00%), or Did Not Meet Expectations (0, 0.00%). Thirty-two respondents (80.00%) were Very Satisfactory and eight (20.00%) were Satisfactory, for a total of 40 (100.00%). The posttest mean of 6.95 (SD = 0.60) is Very Satisfactory. This is a gain of 1.50 raw points over the pretest mean, equivalent to a Cohen's d of approximately 1.27 against the pretest standard deviation. The standard deviation contracted from 1.18 to 0.60, so the distribution became markedly more homogeneous, and nearly all students converged on a competent understanding of how agriculture, fisheries, and forestry contribute to the economy. This compression of variability alongside gains in mean mastery is consistent with Tutal's (2023) meta-analysis of active learning in K-12 settings, which reported an overall effect of $g = 1.005$ for academic achievement and $g = 1.204$ for retention. Antony and Arya (2025) corroborated the pattern in a meta-analysis of 20 empirical studies, with an overall effect of $d = 0.70$ favoring active learning and strong outcomes in secondary social-science settings. Marcon (2022) likewise reported substantial movement toward upper mastery bands under team discussion. Mahilum and Escarlos (2025) argued that collaborative strategies provide scaffolding that compresses between-student variance through peer-assisted inquiry.

Competency 2 showed the most pronounced shift. No respondent was Outstanding (0, 0.00%) or Did Not Meet Expectations (0, 0.00%). Six respondents (15.00%) were Very Satisfactory, 32 (80.00%) were Satisfactory, and two (5.00%) remained Fairly Satisfactory, for a total of 40 (100.00%). The posttest mean of 5.67 (SD = 0.77) is Satisfactory. It represents a gain of 1.62 raw points over the pretest mean of 4.05, equivalent to a Cohen's d of

approximately 2.70 against the pretest standard deviation, which is well above the conventional threshold for a large effect. The standard deviation widened slightly from 0.60 to 0.77 because the distribution stretched upward as several respondents climbed into the Very Satisfactory band, reflecting differentiated but generally upward movement. This matches Stoel et al. (2014), who reported a time-by-condition interaction effect (partial eta squared = 0.51) on knowledge of causal strategies once explicit, discussion-based support was introduced. Bennett et al. (2009) concluded in their systematic review that small-group discussion consistently enhances conceptual understanding, with the largest effects on explanatory and causal items. Zhan et al. (2023) reported that peer-mediated discussion yields large effects on convergent higher-order thinking (g = 0.97), an effect-size magnitude comparable to the d of 2.70 here. Lee et al. (2026) reported g = 0.54 for general learning outcomes and g = 0.58 for content acquisition in secondary social studies interventions, indicating that SGD-type interventions tend to produce favorable gains on causally structured competencies.

For Competency 3, the posttest mean rose to 5.90 (SD = 0.72) from the pretest mean of 5.08 (SD = 0.76). This is a gain of 0.82 raw points, equivalent to a Cohen's d of approximately 1.08 against the pretest standard deviation, within the conventional large-effect range. The redistribution was striking: 80.00% of respondents (f = 32) occupied the Satisfactory band and 20.00% (f = 8) reached Very Satisfactory, for a total of 40 (100.00%). No one remained at Fairly Satisfactory (0, 0.00%), Outstanding (0, 0.00%), or Did Not Meet Expectations (0, 0.00%). The standard deviation declined marginally from 0.76 to 0.72, suggesting slightly more uniform mastery even though the absolute gain was smaller than for the other competencies. This is consistent with Kozanitis and Nenciovici (2022), whose meta-analysis showed gains of approximately 0.489 SD for active learning in college humanities and social sciences and emphasized that effects are moderated by the depth and complexity of the target competency. Ekahitanond (2014) similarly noted that competencies requiring critical questioning and value-laden judgments benefit from peer feedback aimed at higher-order thinking, which matures more gradually than recall. Serohijos et al. (2025) found that awareness-oriented competencies in Araling Panlipunan 9 Economics improve strongly but not maximally after a single intervention cycle. Gregg and Bowling (2023) noted that cooperative discussion groups deepen understanding of value-oriented content when paired with reflective prompting, supporting the shift toward Very Satisfactory mastery in a fifth of the respondents.

Summary of pretest and posttest results

Across the three competencies, the pretest means were 5.45 (Satisfactory), 4.05 (Fairly Satisfactory), and 5.08 (Satisfactory), and the posttest means were 6.95 (Very Satisfactory), 5.67 (Very Satisfactory), and 5.90 (Satisfactory). The average weighted means were 6.70 (Very Satisfactory) for Competency 1, 5.36 (Satisfactory) for Competency 2, and 5.49 (Satisfactory) for Competency 3. The overall pretest mean of 4.86 (Satisfactory) rose to an overall posttest mean of 6.17 (Very Satisfactory), with a total average weighted mean of 5.85, interpreted as Satisfactory. These values follow the summary legend (8.21-10.00 Outstanding, 6.41-8.20 Very Satisfactory, 4.61-6.40 Satisfactory, 2.81-4.60 Fairly Satisfactory, 1.00-2.80 Did Not Meet Expectations or Needs Improvement).

The competency with the highest overall performance was the role of agriculture, fisheries, and forestry in the economy, with a pretest mean of 5.45, a posttest mean of 6.95, and an average weighted mean of 6.70. This implies that SGD enabled learners to understand these economic roles through active exchange of ideas, peer explanation, and collaborative analysis. By discussing real-life and community-based situations, students connected abstract economic

concepts to actual sectoral functions. Teachers can sustain this strength through collaborative tasks such as community mapping, agricultural case analysis, and sectoral role-play. The competency with the lowest overall performance was the analysis of the causes and effects of sectoral problems, with a pretest mean of 4.05, a posttest mean of 5.67, and an average weighted mean of 5.36, interpreted as Satisfactory. Although this competency showed the largest gain from pretest to posttest, learners still found causal analysis and evaluation of sectoral problems more demanding than identifying economic functions. Structured cause-and-effect organizers, problem-solution matrices, guided questioning, and evidence-based discussion prompts, together with repeated exposure to analytical tasks, may help students strengthen higher-order thinking and explain complex economic issues. The overall improvement from 4.86 to 6.17 demonstrates the effectiveness of SGD in Araling Panlipunan 9 Economics, as students became more engaged, participated actively, and developed greater confidence in expressing economic ideas and evaluating sectoral issues. Continued use of SGD, coupled with well-designed follow-up activities and timely teacher feedback, can further move learners toward higher levels of mastery.

Test of significant difference between pretest and posttest scores

A paired-samples t-test was used to determine whether the pretest and posttest scores differed significantly at the 0.05 level of significance. For Competency 1, the pretest mean of 5.45 (SD = 1.17) and the posttest mean of 6.95 (SD = 0.60) yielded a mean difference of -1.5, an effect size of -1.48, and $t = -9.37$ with $p < 0.001$, so the null hypothesis was rejected and the difference was significant. For Competency 2, the pretest mean of 4.05 (SD = 0.60) and the posttest mean of 5.67 (SD = 0.77) yielded a mean difference of -1.6, an effect size of -2.06, and $t = -13.01$ with $p < 0.001$, again rejecting the null hypothesis. For Competency 3, the pretest mean of 5.08 (SD = 0.76) and the posttest mean of 5.90 (SD = 0.71) yielded a mean difference of -0.825, an effect size of -1.50, and $t = -9.50$ with $p < 0.001$, also rejecting the null hypothesis. The null hypothesis of no significant difference between pretest and posttest scores was therefore rejected in every competency, well below the alpha of 0.05, and the magnitudes of the t-statistics ($|t| = 9.37$, 13.01, and 9.50) indicate deviations from the null distribution that are robust against Type I error. This strength of effect is corroborated by Tutal's (2023) meta-analysis of 398 K-12 studies ($g = 1.005$ for academic achievement and $g = 1.204$ for retention) and by Lee et al. (2026), whose meta-analysis of 68 social-studies intervention studies (146 effect sizes) found a moderate overall effect of $g = .54$ for secondary students, with the largest gains for content acquisition ($g = .58$) and social-studies writing ($g = .58$).

The most pronounced treatment effect occurred in Competency 2, where the largest t-statistic ($|t| = 13.01$) coincided with the lowest pretest mean (4.05) and the steepest gain to a posttest mean of 5.67. This very large t-value reflects both the substantial pretest-to-posttest change and the relatively low pretest variability. The pattern aligns with Stoel et al. (2014), who found that explicit pedagogy fostering causal reasoning produced a significant time-by-condition interaction ($F = 52.13$, $p < .001$), a large effect by Cohen's conventional benchmarks. Bennett et al. (2009) reported that understanding improves most on tasks where competing perspectives must be reconciled, the cognitive demand embedded in Competency 2. Antony and Arya (2025) found an overall $d = 0.70$ favoring active learning across 20 secondary social-science studies, supporting the magnitude of this gain. Competencies 1 ($|t| = 9.37$) and 3 ($|t| = 9.50$) registered comparably strong but more modest effects, consistent with the grand mean effect size of 0.489 reported by Kozanitis and Nenciovici (2022). The hierarchy of t-values thus echoes the meta-analytic pattern in which causally framed competencies show the steepest gains, while valuation-oriented competencies advance more gradually.

The significant differences across all three competencies are consistent with Serohijos et al. (2025), whose single-group pretest-posttest study in Araling Panlipunan 9 at Ozamiz City Public School showed that structured collaborative methods produce statistically significant differences in favor of the intervention. Mahilum and Escarlos (2025) argued that sociocultural mechanisms embedded in SGD, particularly the redistribution of expertise among groupmates, supply peer-mediated scaffolding that compresses within-class dispersion and lifts mastery bands collectively. Marcon (2022) observed gains in upper-mastery band frequencies analogous to those for Competency 1, which moved from a Satisfactory to a Very Satisfactory interpretation (5.45 to 6.95). Taken together, the rejection of the null hypothesis for all three competencies and the convergent literature constitute strong evidence that SGD is an empirically supported approach for teaching the economics content of Araling Panlipunan 9, especially for tasks requiring students to weigh sectoral causes, effects, and policy implications.

Students' level of experiences in Small Group Discussion

Students' experiences were examined across four components using the 4-point scale (3.50-4.00 Always or Palagi, 2.50-3.49 Often or Madalas, 1.50-2.49 Sometimes or Paminsan-minsan, 1.00-1.49 Never or Hindi Kailanman). On Engagement and Participation (Pakikilahok at Atensyon), the 40 respondents reached a component mean of 3.41, interpreted as Often. The statement on actively participating in SGD activities on the Sector of Agriculture had the highest weighted mean at 3.58 (Always), followed by the statement on contributing to the completion of group tasks at 3.53 (Always). Remaining at Often were staying focused during discussions of agriculture, fisheries, and forestry (3.48), confidently sharing ideas and opinions (3.38), and feeling motivated to join SGD sessions in Economics (3.08), the lowest in the set but still positive. The narrow spread of 0.50, from 3.08 to 3.58, indicates uniformly elevated engagement. This agrees with Mahilum and Escarlos (2025), who found that structured group activities raise participation scores into the highest qualitative bands and reduce the silent-participation pattern typical of lecture-dominated settings. Marcon (2022) reported higher involvement in collaborative formats than in traditional lectures. The fact that the two highest items describe active and contributory behaviors confirms Bennett et al. (2009), who argued that small-group discussion produces stronger engagement when students make genuine content contributions rather than merely listening.

On Collaborative Learning (Pagtutulungang Pagkatuto), the component mean was 3.16, again Often. The statement that the group encouraged everyone to participate and express their views led at 3.33, followed by respectful listening to one another's ideas on agriculture (3.28), learning from classmates' shared knowledge (3.23), and working together to answer questions and resolve economic-policy issues in agriculture (3.15). The lowest was the statement that discussions helped the group reach a single conclusion on agricultural development, at 2.80, still Often and above the 2.50 threshold, with a range of 0.53 across items. These ratings align with Stoel et al. (2014), who found that collaborative classroom discourse correlates with higher student-rated perceptions of group efficacy and greater comfort with peer-mediated exchange. Serohijos et al. (2025) likewise reported elevated group-work ratings among Filipino ninth-graders, with item means clustered around 3.00-3.50. The lower rating on the consensus item fits a recurring pattern in which students rate process items (listening, encouraging, sharing) above outcome items (consensus-building), because consensus requires adjudicating disagreements that learners do not always feel equipped to handle. Zhan et al. (2023) interpret such a gap as a useful diagnostic signal for teachers to scaffold consensus procedures more explicitly in later cycles.

On Learning Experience (Karanasan sa Pagkatuto), the component mean was 3.15, Often. The highest item was connecting agricultural concepts to real situations in the community through SGD (3.33), followed by remembering economic policies and agricultural problems better after SGD (3.25) and better understanding Economics lessons on the Sector of Agriculture (3.23). The item on topics becoming more meaningful through group discussion scored 3.18, and the item on SGD increasing interest in studying the importance of agriculture to the economy scored 2.78, all within Often, with a range of 0.55. These values align with Martínez-Hita et al. (2021), who showed that contextualized learning experiences raise comprehension above lecture-only settings and enhance ratings of meaningfulness. Joe (2021) observed a similar pattern in rural Sulu, with a component mean near 3.20 and the situational-application item rated highest. The leading position of the real-life connection item suggests that SGD turned abstract economic content into concrete community-grounded understanding. The lower interest item reflects the challenge noted by Lee et al. (2026) that affective outcomes such as interest and motivation develop over time and respond to reinforcement beyond a single intervention cycle.

On Perceived Improvement in Performance (Inaasahang Pagpapabuti sa Perpormans), the component mean was 3.29, Often. The statement that SGD improved the ability to analyze economic issues harming farmers, fisherfolk, and forest workers scored 3.63 (Always), the only item across the four components to exceed 3.60. Next were answering tests on the Sector of Agriculture more effectively after SGD (3.45), SGD raising classroom performance and participation in the Economics unit (3.33), and greater confidence in expressing knowledge about the role of agriculture (3.15). The statement that SGD generally raised the level of learning in Economics scored 2.90. The range of 0.73 reflects variability in perceived improvement, with analytical ability showing the strongest effect. This pattern is consistent with Kozanitis and Nenciovici (2022), whose grand mean effect size of 0.489 across 119 effect sizes and 8,856 students was larger where posttests measured analytical skills matching the instructional focus. Antony and Arya (2025) reported $d = 0.70$ with positive perceived-performance measures among social-science students, and Tutal (2023) reported $g = 1.005$ on academic achievement in K-12 settings. The lower overall-learning item echoes Ekahitanond (2014), who found that critical-thinking and performance outcomes need continued peer feedback and interaction to consolidate. Gregg and Bowling (2023) noted that cooperative discussion deepens understanding when paired with reflective prompting, so sustained gains are achievable when SGD is followed by continued peer-mediated application.

Ranked by component mean, Engagement and Participation placed first (3.41), Perceived Improvement in Performance second (3.29), Collaborative Learning third (3.16), and Learning Experience fourth (3.15), all interpreted as Often. The overall grand mean was 3.25, also Often. This confirms that SGD is an effective, highly engaging, and academically enriching strategy for Grade 9 Araling Panlipunan (Ekonomiks) at Biabas Trade High School.

Synthesis

Overall, the results show that SGD was associated with significant gains in all three Economics competencies. The overall mean rose from 4.86 (Satisfactory) to 6.17 (Very Satisfactory), the null hypothesis was rejected at $p < 0.001$ for each competency ($|t| = 9.37$, 13.01, and 9.50), and the strongest effect appeared on the causally framed Competency 2. Students also reported frequent engagement, collaboration, meaningful learning, and perceived performance gains (grand mean = 3.25, Often), with relative weaknesses in consensus-building and sustained interest. These findings address the objectives on students' performance before and after the intervention, the significance of the difference, and students' experiences, and they contribute context-specific evidence from a rural Philippine public school to the literature

on collaborative pedagogy. They also point to the need for structured scaffolds in causal analysis, consensus-building, and interest development, which prepares the reader for the conclusions and recommendations, including the enhanced group learning material that is the output of this study.

CONCLUSION

This study concluded that Small Group Discussion (SGD) is an effective pedagogical strategy for teaching Economics in Grade 9 Araling Panlipunan, specifically the unit on Sektor ng Agrikultura, among the forty (40) Grade 9 students of Biabas Trade High School for the 2026–2027 academic year. The findings showed that students began the intervention with academic performance concentrated at lower mastery levels across all three Most Essential Learning Competencies (MELCs). In the first competency, which concerns the role of agriculture, fishing, and forestry in the economy, the pre-test mean was 5.45 (SD=1.18), a Satisfactory rating, with 60.00% of students scoring in the 5 to 6 range and none reaching the Outstanding band. The second competency, which concerns the causes and effects of the problems of the agricultural, fishing, and forestry sectors, registered the lowest baseline, with a mean of 4.05 (SD=0.60), a Fairly Satisfactory rating, and 80.00% of respondents within the 3 to 4 range. The third competency, which concerns the valuing of economic policies that support the agricultural sector, recorded a mean of 5.08 (SD=0.76), a Satisfactory rating, with 75.00% of respondents in the 5 to 6 range. These results established the baseline learning gaps that the strategy was intended to address.

Following exposure to SGD, marked gains were recorded in all three competencies. The post-test mean for the first competency rose to 7.95 (SD=0.60), a Very Satisfactory rating, with 77.50% of the class advancing to the 7 to 8 range. The second competency rose to 6.67 (SD=0.77), moving from Fairly Satisfactory to Satisfactory, with 80.00% of respondents in the 5 to 6 range and 15.00% reaching Very Satisfactory. The third competency reached 5.90 (SD=0.72), remaining in the Satisfactory category, although 20.00% of students advanced to the Very Satisfactory band and none remained in Fairly Satisfactory. The paired-samples t-test confirmed that these improvements were statistically significant, with $t=-9.37$, $p<0.001$ for the first competency, $t=-13.01$, $p<0.001$ for the second, and $t=-9.50$, $p<0.001$ for the third. Because all p-values were well below the 0.05 level of significance, the null hypothesis was rejected in each case, which indicates that SGD produced statistically meaningful gains in student learning outcomes. By shifting instruction from traditional, teacher-centered lecturing to interactive, peer-led collaboration, SGD addressed the baseline gaps and fostered higher levels of conceptual mastery, analytical thinking, and value internalization regarding the Philippine agricultural sector. The sharpest gains were observed in the causal analysis competency, which suggests that structured peer dialogue helps reduce cognitive load and expands the students' Zone of Proximal Development (ZPD).

The experiential findings further supported this conclusion. Students reported highly favorable experiences across all four measured dimensions, with every overall construct mean falling under the verbal interpretation of Often (Madalas). Engagement and Participation obtained a component mean of 3.41, and its highest-rated indicator was active participation in SGD activities regarding the Agricultural Sector (Weighted Mean = 3.58, Always). Collaborative Learning obtained a component mean of 3.16, with respectful listening among group members receiving the highest evaluation (Weighted Mean = 3.28, Often) and the formation of a single shared consensus scoring the lowest within the construct (Weighted Mean = 2.80, Often). Learning Experience obtained a component mean of 3.15, with the connection

of agricultural concepts to real-world community situations emerging as its strongest aspect (Weighted Mean = 3.33, Often). Perceived Improvement in Performance obtained a component mean of 3.29, and the statement that SGD improved students' ability to analyze economic issues affecting farmers, fisherfolk, and forestry workers recorded the highest weighted mean in the entire survey at 3.63 (Always). Taken together, these responses demonstrate that SGD increases student engagement, reinforces social constructivist learning, and bridges abstract economic policies with real-world community issues.

Nevertheless, the findings also revealed specific operational hurdles, such as the difficulty of consensus-building and of sustaining long-term subject interest, which highlight the need for structured instructional materials designed to guide group dynamics. Integrating SGD with tailored Strategic Activity Materials such as AGRI-UGNAYAN therefore offers a sustainable approach to elevating academic achievement in secondary Social Studies education. In light of these conclusions, Araling Panlipunan teachers are encouraged to incorporate SGD systematically into daily instruction, particularly for complex and policy-oriented economics topics, and to act as facilitators who monitor group mechanics, scaffold consensus-building tasks, and use localized activity guides to maximize peer learning. School administrators and department heads are encouraged to integrate SGD facilitation techniques into professional development programs, such as Learning Action Cell (LAC) sessions under DepEd Order No. 35, s. 2016, and to support instructional innovation through adequate classroom layouts, flexible seating arrangements, and reproduction support for collaborative activity sheets. Curriculum developers and Learning Resource Management Systems (LRMS) managers are encouraged to endorse and adopt the proposed AGRI-UGNAYAN: Strategic Activity Material (SAM) so that standardized, peer-supported learning activities may address the documented roadblocks in collaborative classrooms. Grade 9 learners are likewise encouraged to engage actively in collaborative learning, listen respectfully to peer viewpoints, and take shared accountability for group outcomes, thereby building essential 21st-century skills such as critical thinking, communication, and civic engagement.

Finally, because the present study employed a single-group design, future researchers are encouraged to conduct comparative studies using a two-group pre-test/post-test control group design across multiple public and private secondary schools to validate these findings. Further research may also examine the long-term retention effects of SGD across other quarter topics in Grade 9 Economics, such as Pambansang Ekonomiya and Impormasyon at Patakarang Panlabas, so that the contribution of peer-led collaborative learning to academic achievement can be established with greater generalizability.

REFERENCES

Antony, J. P., & Arya, R. (2025). Effect of active learning versus traditional lecturing on the learning achievement of school students in social sciences: A meta-analysis. BSSS Journal of Education, 14(1), 48–63. https://doi.org/10.51767/je1404

Badan Standar, Kurikulum, dan Asesmen Pendidikan. (2022). Kurikulum untuk pemulihan pembelajaran [Curriculum for learning recovery]. Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi.

Bennett, J., Hogarth, S., Lubben, F., Campbell, B., & Robinson, A. (2009). Talking science: The research evidence on the use of small group discussions in science teaching. International Journal of Science Education, 32(1), 69–95. https://doi.org/10.1080/09500690802713507

Biesel, M., & Brame, C. J. (2015). Group work: Using cooperative learning groups effectively. Vanderbilt University Center for Teaching.

Brame, C. J., & Biel, R. (2015). Setting up and facilitating small group discussions. Vanderbilt University Center for Teaching.

Chang, Y., & Brickman, P. (2018). When group work doesn't work: Insights from students. CBE—Life Sciences Education, 17(3), Article ar52.

Department of Education. (2016). Policy guidelines on daily lesson preparation for the K to 12 Basic Education Program (DepEd Order No. 42, s. 2016).

Department of Education. (2016). The Learning Action Cell (LAC) as a K to 12 school-based continuing professional development strategy for the improvement of teaching and learning (DepEd Order No. 35, s. 2016).

Ekahitanond, V. (2014). Promoting university students' critical thinking skills through peer feedback activity in an online discussion forum. Alberta Journal of Educational Research, 59(2), 247–265. https://doi.org/10.55016/ojs/ajer.v59i2.55617

Estrera, R. B. (2020). The K-12 social studies curriculum in the Philippines: A preliminary evaluation. Journal of Humanities and Social Sciences, 2(1), 15–25.

Fran, J. C. (2021). Teaching strategies and academic performance of students in social studies. International Journal of Educational Management and Development Studies, 2(3), 45–60.

Gonzalez, A. M. (2015). Small group discussion as an interactive strategy in the classroom. Educational Press.

González, J. M., & García-Meca, E. (2015). Social constructivism and active learning: The role of peer discussion in higher education. Journal of Education for Business, 90(3), 110–118.

Gregg, C., & Bowling, A. (2023). Undergraduate student perceptions of cooperative discussion groups as a classroom engagement tool. NACTA Journal, 67(1). https://doi.org/10.56103/nactaj.v67i1.92

Joe, N. M. (2021). Method of teaching Araling Panlipunan and its effect on the grade-10 students' performance in Indanan National High School Timbangan Campus Jolo, Sulu Philippines. International Journal of Research and Innovation in Social Science, 5(12), 68–72. https://doi.org/10.47772/ijriss.2021.51207

Johnson, D. W., & Johnson, R. T. (2019). Cooperative learning in the classroom (Rev. ed.). Association for Supervision and Curriculum Development.

Kirschner, P. A., Sweller, J., & Clark, R. E. (2020). Evolutionary and cognitive load perspectives on collaborative learning. Routledge.

Kozanitis, A., & Nenciovici, L. (2022). Effect of active learning versus traditional lecturing on the learning achievement of college students in humanities and social sciences: A meta-analysis. Higher Education, 86(6), 1377–1394. https://doi.org/10.1007/s10734-022-00977-8

Lee, S., Williams, M., Rice, M., & Wijekumar, K. (2026). A meta-analysis of social studies interventions for secondary students' learning. Review of Educational Research. https://doi.org/10.3102/00346543261418046

Mahilum, D. Z. E., & Escarlos, G. S. (2025). Sociocultural theory in the 21st-century Philippine secondary classroom: A systematic review of collaborative. International Journal of Research and Innovation in Social Science, 9(26), 8809–8814. https://doi.org/10.47772/ijriss.2025.903sedu0666

Marcon, J. M. (2022). Effects of team discussion on students' academic performance in social studies. Asian Journal of Advanced Research and Reports, 84–92. https://doi.org/10.9734/ajarr/2022/v16i12451

Marlina, L. (2018). The implementation of student-centered learning in social science education. Journal of Social Science Education, 7(2), 88–101.

Martínez-Hita, M., Carrasco, C. J. G., & Martínez, P. M. (2021). The effects of a gamified project based on historical thinking on the academic performance of primary school children. Humanities and Social Sciences Communications, 8(1). https://doi.org/10.1057/s41599-021-00796-9

Rini, S. (2017). Developing democratic values through collaborative learning in schools. Journal of Educational Policy and Practice, 12(4), 210–225.

Serohijos, C. J. S., Goc-ong, M. B., & Baluyos, G. R. (2025). Using collaborative judgment session strategy (CJSS) in enhancing student awareness of economic sectors. International Journal of Research and Innovation in Social Science, 1579–1588. https://doi.org/10.47772/ijriss.2025.908000131

Stoel, G., van Drie, J., & van Boxtel, C. (2014). Teaching towards historical expertise: Developing a pedagogy for fostering causal reasoning in history. UvA-DARE (University of Amsterdam), 47(1), 49–76. https://doi.org/10.1080/00220272.2014.968212

Tutal, Ö. (2023). Active learning improves academic achievement and learning retention in K-12 settings: A meta-analysis. I-Manager's Journal on School Educational Technology, 18(3), 1–1. https://doi.org/10.26634/jsch.18.3.19288

Vander Ark, T., & Schneider, C. (2015). The power of networking: Collaborative learning in the 21st century. Getting Smart.

Zhan, Y., Yan, Z., Wan, Z. H., Xiang, W., Zeng, Y., Yang, M., & Yang, L. (2023). Effects of online peer assessment on higher-order thinking: A meta-analysis. British Journal of Educational Technology, 54(4), 817–835. https://doi.org/10.1111/bjet.13310

Zhao, L., Wang, X., Wang, Q., Gao, Y., & Huang, J. (2020). Exploring the impact of student characteristics on collaborative learning outcomes. Frontiers in Psychology, 11, Article 584.