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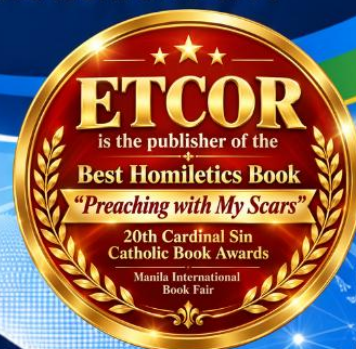
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Flipped classroom learning activity sheets and horseshoe modified seating arrangement: A one-group pretest-posttest study of Grade 10 Araling Panlipunan learners

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Abstract

Aim: This study aimed to determine whether there was a significant change in the academic performance of Grade 10 learners in Araling Panlipunan following the implementation of Flipped Classroom Learning Activity Sheets combined with a Horseshoe Modified Seating Arrangement at Camalog National High School.

Methodology: A quantitative pre-experimental one-group pretest-posttest design was employed involving 27 Grade 10 learners selected through total enumeration. A 30-item Division Assessment Test was administered before and after the intervention. Learners' mastery levels were determined using the mean and Mean Percentage Score, while a paired-samples t-test was used to determine whether a statistically significant difference existed between the pretest and posttest scores.

Results: Learners' performance increased from a pretest mean of 18.48, equivalent to a Mean Percentage Score (MPS) of 61.60% and an Average mastery level, to a posttest mean of 23.37, equivalent to an MPS of 77.90% and a Moving Towards Mastery level. The paired-samples t-test indicated a statistically significant pretest-posttest difference, $t(26) = -7.84$, $p < .001$, in favor of the posttest. The negative sign reflects the order used to compute the paired differences and does not indicate a decline in performance.

Conclusion: The combined use of Flipped Classroom Learning Activity Sheets and a Horseshoe Modified Seating Arrangement was associated with improved academic performance among Grade 10 learners in Araling Panlipunan. The intervention may be adopted and further evaluated as a practical strategy for secondary Araling Panlipunan classes. However, the one-group design does not establish definitive causation, and the proposed instructional processes were not independently measured.

Keywords: *academic performance, Araling Panlipunan, flipped classroom, learning activity sheets, seating arrangement*

INTRODUCTION

International educational research has increasingly examined learner-centered and active-learning approaches that move instruction beyond teacher-dominated classroom delivery. Across educational systems, flipped learning has been investigated in relation to academic achievement, self-efficacy, participation, and the conditions necessary for successful implementation. Evidence indicates that outcomes vary according to learner characteristics, subject area, instructional design, teacher facilitation, intervention duration, and access to learning resources (Satparam & Apps, 2022; Sun et al., 2023; Turan, 2023). These variations show that the value of an instructional innovation cannot be assumed across settings and must be examined within specific educational contexts.

Within this changing educational environment, the flipped classroom transfers learners' initial exposure to lesson content to the pre-class phase, thereby allowing classroom time to be used for clarification, guided application, collaborative activities, and immediate feedback. Recent evidence suggests that flipped instruction can support learning

outcomes and self-efficacy when pre-class materials are accessible, classroom activities are purposefully designed, and teachers provide appropriate guidance and feedback (Gong et al., 2024; Sun et al., 2023; Turan, 2023).

Despite its potential, successful flipped learning requires more than merely providing materials before class. Learners must complete the assigned preparation, understand the purpose of the activities, and apply their initial learning during classroom sessions. Careful instructional design is therefore needed to connect pre-class preparation with interactive classroom tasks and formative assessment (Gong et al., 2024).

The physical arrangement of the classroom can also influence opportunities for communication, collaboration, and participation. Conventional rows may support direct instruction and individual work but can limit face-to-face interaction. In contrast, semicircular and horseshoe arrangements can improve sightlines and support interaction. Yang et al. (2022) reported that semicircular seating was more supportive than rows-and-columns seating for communication, concentration, classroom environment, and cooperative-learning participation. Research examining learners' collaboration and social interaction further provides a related perspective on the importance of peer interaction in learning (Ortiz, 2026). Similarly, Rands and Gansemer-Topf (2017) emphasized that classroom design becomes educationally meaningful when aligned with active-learning practices.

The Horseshoe Modified Seating Arrangement used in this study placed learners in two concentric semicircles facing a common instructional space. The arrangement was intended to improve sightlines, provide room for teacher movement, and support discussion, peer explanation, collaborative problem-solving, formative assessment, and immediate teacher support. The arrangement was treated as an instructional resource whose value depended on its alignment with purposeful classroom activities.

In the Philippine basic education context, the Department of Education's MATATAG Agenda, the country's basic education reform agenda, emphasizes a relevant curriculum, improved educational service delivery, learner well-being, inclusive education, positive learning environments, and stronger support for teachers (Department of Education, 2023). These directions highlight the need for classroom practices that respond to learning gaps while enabling active participation.

This concern is particularly important in Araling Panlipunan, which develops historical, cultural, geographic, socioeconomic, and political understanding. The subject requires learners to examine evidence, recognize different perspectives, establish relationships among events and issues, and apply social concepts to community and national concerns. These competencies require opportunities to read independently, discuss interpretations, analyze sources, and construct evidence-based explanations.

At Camalog National High School, Grade 10 quarterly assessment performance indicated a continuing need for instructional support. The class MPS remained within a category showing that several learners had not attained the expected competency level. Related research has also examined how learning challenges are associated with student performance and how findings can inform enhanced instructional strategies (Zipagan & Dumalig, 2026). The similarity of first- and second-quarter results further indicated the need to examine an intervention that would strengthen preparation before class and increase opportunities for guided application during classroom instruction.

The intervention integrated Flipped Classroom Learning Activity Sheets with a Horseshoe Modified Seating Arrangement. The activity sheets provided structured content, guide questions, and preparatory tasks before classroom discussion. During class, the seating arrangement was used to facilitate sightlines, peer interaction, teacher movement, and feedback. The components performed complementary functions: the activity sheets supported initial preparation, while the classroom arrangement supported interactive and guided application.

Previous studies have commonly examined flipped classrooms and alternative seating arrangements separately. Flipped-classroom research has focused on achievement, self-efficacy, satisfaction, and digital content, whereas classroom-design research has often examined communication, preferences, physical space, and participation. Research on stakeholders' experiences during the resumption of in-person classes in Philippine public schools provides additional context for understanding classroom-based learning environments (Cacabelos et al., 2026). Much of the evidence has also come from higher education, science-related disciplines, technology-intensive environments, and settings outside Philippine public secondary schools.

Limited practice-based evidence therefore exists on the combined use of teacher-developed Flipped Classroom Learning Activity Sheets and a modified horseshoe seating arrangement in Grade 10 Araling Panlipunan. Internationally, examining this integration may extend flipped-learning research to secondary-school settings where digital resources, classroom space, and learner characteristics vary. Locally, it may provide context-responsive evidence for Philippine public schools.

The study differs from previous research by treating instructional materials and classroom space as complementary elements of a single intervention. It combined quality-assured pre-class learning activity sheets with a classroom configuration designed for discussion, monitoring, collaboration, and formative feedback in a Grade 10 Araling Panlipunan class. The relevance of selecting appropriate learning resources is also reflected in research examining students' assessments of engaging books and instructional materials (Ansagay, 2026).

The findings may have practical implications for teachers designing competency-aligned activities, school leaders supporting learner-centered environments, curriculum developers developing context-responsive resources, and teacher education programs preparing educators to connect pre-class learning with active classroom application. The study may also contribute to literature on low-technology, teacher-developed approaches to flipped learning in resource-variable secondary-school settings.

Thus, the study examined whether there was a significant change in the academic performance of Grade 10 learners in Araling Panlipunan following the implementation of the combined intervention. It determined learners' mastery levels before and after implementation and tested whether a statistically significant difference existed between the paired scores.

Review of Related Literature and Studies

Flipped Classroom as an Instructional Strategy

The flipped classroom is a learner-centered strategy in which learners study introductory materials before class and use classroom time for discussion, guided practice, collaboration, and feedback. Recent studies indicate that flipped instruction may support achievement when pre-class materials are accessible and directly connected to purposeful in-class activities (Gong et al., 2024; Turan, 2023). In Philippine basic education, Macale et al. (2021) found higher academic performance and classroom participation among learners exposed to flipped instruction with peer activities. Implementation, however, depends on learner accountability, teacher guidance, accessible resources, and carefully designed activities (Satparam & Apps, 2022).

Flipped Classroom Learning Activity Sheets

Learning activity sheets provide a practical low-technology alternative to video-based pre-class instruction. They enable learners to examine essential concepts, examples, guide questions, and preparatory tasks at their own pace. Their effectiveness depends on clarity, contextual relevance, curriculum alignment, and a direct connection to subsequent classroom tasks. The relationship between learning-material use and learner competence is also a relevant area of investigation among Grade 10 students (Esteves, 2026). Research suggests that outcomes are stronger when teachers check preparation and follow it with guided discussion, individual exercises, collaborative work, and formative assessment (Gong et al., 2024).

Classroom Seating and Learner Participation

Classroom seating influences visibility, communication, movement, concentration, and interaction. Semicircular and horseshoe arrangements are more compatible with discussion and collaborative learning than conventional rows. Yang et al. (2022) found that semicircular seating supported communication, concentration, classroom environment, and cooperative-learning participation. Gracyalny and Hurtienne (2023) likewise identified collaboration, learner engagement, positive classroom behavior, and teacher facilitation as features of effective secondary active-learning spaces. The physical arrangement alone, however, does not guarantee learning gains; it must be aligned with objectives, activities, and facilitation (Rands & Gansemer-Topf, 2017).

Integration of Flipped Learning and Horseshoe Seating

The integration of Flipped Classroom Learning Activity Sheets and a Horseshoe Modified Seating Arrangement combined two complementary components of instruction. The learning activity sheets supported structured preparation before class, while the seating arrangement provided an environment for discussion, peer interaction, teacher monitoring, and immediate feedback. Together, the strategies shifted classroom time from extended content delivery to the guided application of knowledge.

This integrated approach was relevant to Araling Panlipunan because the subject required learners to analyze evidence, compare perspectives, explain relationships, and apply concepts to social issues. Learners could examine foundational content through the activity sheets and use classroom time for source analysis, collaborative inquiry, and evidence-based discussion. The horseshoe arrangement supported these tasks by allowing learners to see and respond directly to the teacher and their classmates.

Synthesis and Research Gap

Collectively, the reviewed literature indicated that flipped instruction could improve academic performance when pre-class materials were accessible, competency-aligned, and connected to meaningful classroom activities. The literature also showed that semicircular and horseshoe arrangements could support communication, collaboration, and participation when combined with learner-centered pedagogy. However, neither strategy independently guaranteed improved learning outcomes. Their effectiveness depended on instructional design, learner accountability, classroom management, and teacher facilitation.

Most studies have investigated flipped instruction and classroom seating separately, and much of the flipped-learning evidence comes from higher education and technology-intensive settings. Limited research has examined teacher-developed activity sheets together with an interaction-oriented classroom layout in Grade 10 Araling Panlipunan. From an international perspective, the present study extends inquiry into how flipped learning may be adapted to secondary contexts with varying digital access and classroom constraints.

Theoretical Framework

Constructivist Learning Theory

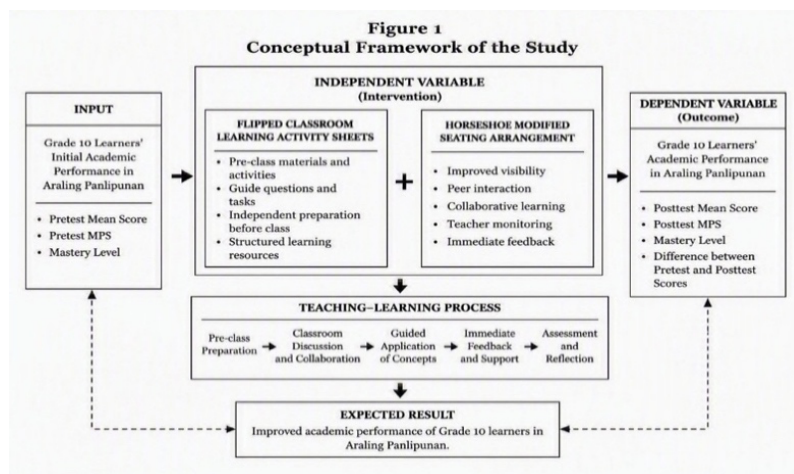
Constructivist Learning Theory explains that learners actively construct knowledge by connecting new information with prior understanding and participating in meaningful learning experiences (Piaget, 1973). Learning is strengthened when students examine information, exchange ideas, solve problems, receive feedback, and reflect on their understanding rather than passively receive teacher-led instruction.

Constructivist Learning Theory was relevant to the present study because the combined intervention required learners to participate actively during both the pre-class and in-class phases. The Flipped Classroom Learning Activity Sheets introduced essential concepts, examples, and guide questions before classroom instruction. These materials enabled learners to activate prior knowledge, study foundational content at an appropriate pace, and identify concepts requiring clarification. During the classroom session, learners applied their initial understanding through guided discussion, collaborative activities, problem-solving, and formative assessment.

The Horseshoe Modified Seating Arrangement supported the social dimension of constructivist learning by improving visibility, communication, and interaction among learners and the teacher. The arrangement provided an instructional space appropriate for peer explanation, group discussion, collaborative inquiry, and immediate feedback. Studies on semicircular and active-learning arrangements indicated that classroom space could support communication, concentration, collaboration, and learner-centered participation when it was aligned with appropriate teaching practices and learning activities.

The theory guided the research design by framing the intervention as a structured sequence of individual preparation and collaborative application. It guided data collection through the administration of a pretest before the intervention and a posttest after its implementation. It also guided the interpretation of the results by relating changes in mastery scores to the learners' opportunities to prepare independently, participate in collaborative learning, apply concepts, and receive immediate feedback.

Conceptual Framework



The conceptual framework proposed that the combined implementation of Flipped Classroom Learning Activity Sheets and the Horseshoe Modified Seating Arrangement could contribute to improved academic performance in Grade 10 Araling Panlipunan. The two components performed complementary instructional functions. The learning activity sheets supported structured preparation before class, while the seating arrangement supported active and collaborative application during class.

The intervention followed a consistent instructional sequence. The teacher-researcher first identified the learning objectives and prepared competency-aligned learning activity sheets. The materials were distributed before the scheduled lessons to allow learners to examine the content and complete preparatory activities. During class, learners participated in retrieval activities, clarification, discussion, collaborative problem-solving, guided application, synthesis, and formative assessment within the Horseshoe Modified Seating Arrangement. Research on flipped instruction emphasized that achievement gains were more likely when teachers connected pre-class preparation with individual and collaborative classroom activities and follow-up assessment.

At the end of the intervention, the learners' posttest mastery scores were compared with their pretest mastery scores. The independent variable was the combined instructional intervention, while the dependent variable was academic performance as measured by test scores and Mean Percentage Scores. Learner preparation, classroom interaction, collaboration, teacher monitoring, and immediate feedback represented intended instructional processes, but they were not independently measured as outcomes.

Statement of the Problem

Improving the academic performance of Grade 10 learners in Araling Panlipunan remained an instructional concern at Camalog National High School. Quarterly assessment results indicated that several learners had not attained the expected level of mastery. This performance gap highlighted the need for an intervention that would strengthen preparation before class and provide opportunities for guided application and feedback.

Although flipped classroom strategies and alternative seating arrangements had separately been associated with active learning, limited evidence was available on their combined application in Philippine public secondary schools, particularly in Araling Panlipunan. It was therefore necessary to examine whether implementation of the combined intervention was associated with changes in learners' mastery.

The study examined the change in academic performance of 27 Grade 10 learners following implementation of Flipped Classroom Learning Activity Sheets combined with a Horseshoe Modified Seating Arrangement. The investigation was limited to comparing mastery scores before and after implementation.

General Objective

To determine whether there was a statistically significant change in the academic performance of Grade 10

learners in Araling Panlipunan following the implementation of Flipped Classroom Learning Activity Sheets combined with a Horseshoe Modified Seating Arrangement.

Specific Objectives

Specifically, the study aimed:

1. To determine the mastery level of the Grade 10 learners in Araling Panlipunan before the implementation of Flipped Classroom Learning Activity Sheets and the Horseshoe Modified Seating Arrangement.
2. To determine the mastery level of the Grade 10 learners in Araling Panlipunan after the implementation of Flipped Classroom Learning Activity Sheets and the Horseshoe Modified Seating Arrangement.
3. To determine whether a statistically significant difference existed between the learners' pretest and posttest mastery scores.

Research Questions

The study sought to answer the following questions:

1. What was the mastery level of the Grade 10 learners in Araling Panlipunan before the implementation of Flipped Classroom Learning Activity Sheets and the Horseshoe Modified Seating Arrangement?
2. What was the mastery level of the Grade 10 learners in Araling Panlipunan after the implementation of Flipped Classroom Learning Activity Sheets and the Horseshoe Modified Seating Arrangement?
3. Was there a statistically significant difference between the pretest and posttest mastery scores of the Grade 10 learners?

Hypothesis

H₀₁: There was no statistically significant difference between the pretest and posttest mastery scores of the Grade 10 learners in Araling Panlipunan following the implementation of Flipped Classroom Learning Activity Sheets and the Horseshoe Modified Seating Arrangement.

METHODOLOGY

Research Design

The study employed a quantitative pre-experimental one-group pretest-posttest design to examine changes in academic performance following implementation of Flipped Classroom Learning Activity Sheets combined with a Horseshoe Modified Seating Arrangement. A pretest established the initial mastery level, the intervention was implemented during the eight-week fourth grading period of School Year 2025-2026 through four class meetings per week covering four competencies, and a posttest measured subsequent performance. Because no control or comparison group was included, the observed change was interpreted as associated with the intervention rather than conclusive evidence of causation.

Population and Sampling

Table 1

Distribution of Participants

Grade Level	Group	Number of Participants
Grade 10	Intervention Group	27
Total		27

Table 1 shows the distribution of participants. The participants consisted of 27 Grade 10 learners enrolled at Camalog National High School-Main during School Year 2025-2026. Total enumeration was used because all learners in the identified class participated and completed both assessments. The exact number, selection method, and study setting were retained to allow clear understanding of the participant group.

Total enumeration was appropriate because the action research addressed an instructional concern affecting the entire class. Including all learners also allowed the researcher to implement the intervention as part of regular Araling Panlipunan instruction without disrupting the established class organization and schedule.

Research Instrument

The primary data-gathering instrument was the 30-item Fourth Quarter Araling Panlipunan Division Assessment Test developed by the Schools Division of Kalinga. The examination was an adopted instrument designed to measure learners' mastery of the prescribed fourth-quarter competencies in Grade 10 Araling Panlipunan.

Each correct answer was assigned one point, while every incorrect or unanswered item received zero. The highest possible score was 30. The same instrument and scoring procedure were used in the pretest and posttest to ensure comparability of the results.

Content Validation and Quality Assurance

The 30-item Fourth Quarter Araling Panlipunan Division Assessment Test was adopted from the Schools Division of Kalinga. On July 18, 2023, one validator, the Education Program Supervisor for the Learning Resource Management and Development Section (EPS for LRMDs) of the Schools Division of Kalinga, conducted assessment-tool validation and quality assurance. The review covered competency alignment, content appropriateness, clarity of directions and test items, construction and plausibility of response options, and answer-key accuracy. The instrument was recommended for use after completion of the prescribed quality-assurance process. No separate reliability coefficient was recalculated for this classroom-based action research.

Data Collection Procedure

Data collection was conducted during the fourth grading period of School Year 2025-2026 at Camalog National High School-Main. The intervention covered eight weeks, with four Araling Panlipunan class meetings per week, and addressed four fourth-quarter competencies. The pretest was administered before implementation. Flipped Classroom Learning Activity Sheets were distributed before scheduled lessons, while classroom meetings were used for retrieval, clarification, collaborative learning, guided application, formative assessment, and feedback within the Horseshoe Modified Seating Arrangement. The same Division Assessment Test was administered as the posttest under comparable conditions at the end of the intervention. Scores were checked using the official answer key, and encoded for analysis. Repeated use of the same test was recognized as a possible testing effect.

Treatment of Data

Appropriate descriptive and inferential statistical tools were used to analyze the data in relation to the research objectives. The mean summarized average performance, the Mean Percentage Score interpreted mastery using the adopted Department of Education categories (Department of Education, 2012), and the standard deviation described score dispersion. A paired-samples t-test compared the pretest and posttest raw scores of the same 27 learners at the .05 significance level. The mean score was used to determine the average performance of the learners before and after the intervention. This measure was appropriate because the 30 assessment items were equally weighted and contributed uniformly to the total score.

Table 2

Mean Percentage Score

MPS	Descriptive equivalent
96-100%	Mastered
86-95%	Closely approximating Mastery
66-85%	Moving towards mastery
35-65%	Average
15-34%	Low
5-14%	Very low
0-4%	No mastery

MPS

Descriptive equivalent

Table 2 shows the Mean Percentage Score matrix which was used to determine and interpret the learners' mastery levels.

The standard deviation was used to determine the variability of the learners' scores around the mean. A lower standard deviation indicated that the scores were more closely grouped, while a higher standard deviation indicated greater variation in performance.

To address the objective concerning the difference between the pretest and posttest scores, a paired-samples t-test was employed. The statistical test was appropriate because the two sets of scores were obtained from the same 27 learners before and after the intervention.

The test was conducted at the 0.05 level of significance. The null hypothesis was rejected when the computed p-value was less than .05. The paired-samples t-test was performed using the learners' individual raw scores rather than the two group Mean Percentage Scores.

Ethical Considerations

Ethical standards were observed throughout the study. Approval was obtained from the Schools Division Office and the school administration. Because the participants were minors, written informed consent was obtained from parents or legal guardians, and learner assent was secured before data collection. Participation was voluntary, withdrawal carried no academic penalty, names were replaced with assigned codes during data encoding and analysis, and the data were used only for academic and research purposes.

RESULTS and DISCUSSION

This section presents and discusses the results of the study based on the action research questions.

Table 3

Mastery Levels of Learners on the Pretest and Posttest

Participants	N	Pretest		Posttest		MPS Difference
		MPS (%)	Descriptive Rating	MPS (%)	Descriptive Rating	
One Group Pre-Post Test	27	61.60	Average	77.90	Moving Towards Mastery	16.30 percentage points

Note. MPS = Mean Percentage Score. The MPS difference is $77.90\% - 61.60\% = 16.30$ percentage points. The corresponding raw mean difference is $23.37 - 18.48 = 4.89$ points.

Table 3 shows the mastery levels of learners on the pretest and posttest. Before the intervention, the learners obtained a mean score of 18.48 out of 30, equivalent to an MPS of 61.60% and interpreted as Average. Four learners were classified under the Low category, 12 were in the Average category, five were Moving Towards Mastery, five were Closely Approximating Mastery, and one learner had already reached the Mastered category.

The pretest results indicated that most learners had not yet attained the expected mastery level in the identified Araling Panlipunan competencies. Sixteen of the 27 learners, or 59.26%, were classified within the Low and Average categories. This finding established the need for additional instructional support.

After the intervention, the mean score increased to 23.37, corresponding to an MPS of 77.90% and interpreted as Moving Towards Mastery. Seven learners reached the Mastered category, three were Closely Approximating Mastery, 10 were Moving Towards Mastery, and seven remained in the Average category. No learner was classified under the Low, Very Low, or No Mastery categories.

The increase from 61.60% to 77.90% represented a gain of 16.30 percentage points in MPS. The mean score likewise increased by 4.89 points. The shift in the distribution showed that learners who had initially been classified in the lower mastery categories generally moved toward higher levels of performance after the intervention. In particular, the absence of learners in the Low category after implementation suggested that the combined strategy may have provided useful support to learners who required additional instructional assistance.

The observed improvement may be associated with the complementary functions of the two intervention components. The Flipped Classroom Learning Activity Sheets provided learners with structured content, examples, and guide questions before formal classroom instruction. This preparation allowed classroom time to be devoted to clarification, collaborative discussion, problem-solving, and guided application. Research has shown that flipped instruction is more effective when pre-class materials are directly connected to individual and collaborative activities conducted during class (Gong et al., 2024; Turan, 2023).

The Horseshoe Modified Seating Arrangement was intended to support visibility, peer communication, teacher movement, and access to immediate feedback. Yang et al. (2022) found that semicircular seating provided better conditions for communication, concentration, and cooperative-learning engagement than rows-and-columns seating. However, these mechanisms were not directly measured in the present study, and the educational value of the configuration depended on its alignment with purposeful activities.

The present findings were also consistent with the Philippine study of Macale et al. (2021), in which learners exposed to flipped instruction with peer activities demonstrated higher academic achievement and stronger classroom participation. Similarly, a systematic review of flipped-classroom research in K to 12 education found that most studies reported positive learning outcomes, although results varied according to the design of the learning activities, learner accountability, teacher preparation, and access to resources (Satparam & Apps, 2022).

Nevertheless, seven learners remained in the Average category after the intervention. This result indicated that the combined strategy improved group performance but did not eliminate individual learning gaps. Some learners may have required additional remediation, more scaffolded activity sheets, extended practice, or differentiated teacher support. Flipped learning does not automatically improve achievement because its effectiveness depends on whether learners complete the preparatory tasks and whether the classroom activities address their specific learning needs.

Table 4
Paired-Samples t-Test of Pretest and Posttest Scores

Variables	N	SD	Mean	t	p	Decision
Pretest	27	6.38	18.48	-7.84	< .001	Significant
Posttest	27	5.43	23.37			

Note. N = 27 for both assessments. SD = standard deviation. The negative t value reflects the pretest-minus-posttest order of the paired differences; the higher posttest mean establishes the direction of improvement.

Table 4 shows the paired-samples t-test of pretest and posttest scores. The paired-samples t-test revealed a statistically significant difference between the pretest and posttest scores, $t(26) = -7.84$, $p < .001$. Since the computed p-value was lower than the .05 level of significance, the null hypothesis was rejected. The result indicated that the learners' academic performance after the intervention was statistically significantly higher than their performance before implementation; however, the one-group design does not establish that the intervention alone caused the change.

The negative sign of the t-value reflected the order used in computing the paired differences. It did not represent a decline in performance. The higher posttest mean confirmed that the direction of change favored the posttest. The reduction in the standard deviation from 6.38 to 5.43 also suggested that the posttest scores became slightly more consistent, although differences in individual performance remained.

The statistically significant difference was consistent with studies reporting positive achievement outcomes when flipped instruction connected pre-class preparation with collaborative tasks, formative exercises, and immediate feedback (Gong et al., 2024; Sun et al., 2023). The present one-group design demonstrated within-group change but did not establish definitive causation.

The result also underscored the potential importance of aligning the physical learning environment with the intended teaching strategy. Active-learning spaces can promote collaboration and learner-centered instruction, but the

classroom arrangement must be supported by appropriate activities, clear expectations, classroom management, and teacher facilitation. Evidence from active-learning classroom research indicates that changes in physical space are most educationally meaningful when combined with learner-centered pedagogy and structured collaborative practices.

From an instructional perspective, the findings suggest that teachers may use Flipped Classroom Learning Activity Sheets to prepare learners for discussions and higher-order classroom tasks. The Horseshoe Modified Seating Arrangement may then be used to support peer interaction, source analysis, collaborative inquiry, teacher monitoring, and feedback. This combination is especially relevant to Araling Panlipunan, where learners are expected to analyze issues, compare perspectives, interpret evidence, and communicate reasoned conclusions.

However, the findings should be interpreted within the limitations of the research design. The study involved only one intact class of 27 learners and did not include a control or comparison group. Consequently, other factors such as repeated exposure to the assessment, maturation, additional learning experiences, or regular classroom instruction could not be completely excluded as possible influences on the results. A one-group pretest-posttest design can demonstrate change within a group, but it cannot establish the same level of causal certainty as a design involving a comparable control group.

Accordingly, the statistically significant improvement provides local evidence that the combined intervention was associated with increased academic performance among the participating learners. Future studies may strengthen this evidence by using larger samples, comparison groups, longer intervention periods, and separate measures of learner engagement.

Conclusions

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

1. The academic performance of Grade 10 learners in Araling Panlipunan improved from an Average mastery level in the pretest, with an MPS of 61.60%, to Moving Towards Mastery in the posttest, with an MPS of 77.90%.
2. A statistically significant difference was found between the learners' pretest and posttest scores, $t(26) = -7.84$, $p < .001$, in favor of the posttest. The combined use of Flipped Classroom Learning Activity Sheets and the Horseshoe Modified Seating Arrangement was therefore associated with improved academic performance.
3. The combined intervention integrated pre-class learning materials with classroom-based discussion, collaborative application, and teacher-supported learning. These instructional processes were not independently measured, and the one-group design did not permit definitive causal conclusions.

Recommendations

Based on the findings and conclusions, the following recommendations are proposed for consideration:

1. Araling Panlipunan teachers may integrate quality-assured and competency-aligned Flipped Classroom Learning Activity Sheets with the Horseshoe Modified Seating Arrangement when lessons require pre-class preparation, discussion, source analysis, collaboration, and guided application.
2. Teachers may monitor learners' completion of pre-class activities and provide targeted remediation, scaffolded exercises, and additional guided practice for learners who remain below the expected mastery level.
3. Future researchers may examine the intervention using larger samples, comparison groups, longer implementation periods, and validated measures of learner engagement to strengthen the evidence and determine the separate and combined contributions of the two strategies.

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