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AUGMENTED PEER LEARNING IN TEACHING ARALING PANLIPUNAN 9

Danica Marie E. Titan
Laguna State Polytechnic University Sta. Cruz Laguna 4009 Philippines

ABSTRACT

Araling Panlipunan teachers face challenges in selecting teaching strategies that cater to students' needs, interests, and subject complexity, as social studies often focus on memorization. This study aims to determine the effect of augmented peer-learning on Grade 9 students in teaching Araling Panlipunan 9. It sought to find the following: the level of use of Jigsaw Technique; Augmented Peer-Learning; knowledge acquisition; pre-test and post-test scores with the use of augmented peer-learning. It also to apprehend the significant effect between different types of jigsaw technique and augmented peer-learning on knowledge acquisition. Lastly, to get the differences between pre- and post-test scores before and after using jigsaw technique.

This study utilized descriptive research design to compare the scores of the respondents before and after the intervention. The instrument used in the study was validated self-made questionnaire consisted of five questiond per variable. Respondents are one hundred twenty-one (121) Grade 9 students who are purposively selected at Ibayiw Integrated National High School Alaminos, Laguna.

Result shows that the different types of jigsaw satisfactorilyn terms of chronological, procedural, and model/human, are all very high; augmented peer-learning in terms of active participation, engagement and motivation, diversity and inclusion, and adaptability are all very high; knowledge acquisition in terms of visual literacy, critical thinking, and collaboration were all very high; pre-test scores suggest that most of students performed fairly satisfactorily; post-test scores most of the students performed satisfactory. Also, substantial improvement in the students' performance in Araling Panlipunan. Therefore, there is a significant difference between students' pre-test and post-test scores. In addition, among the components of Augmented Peer Learning, Visual Literacy showed a notable significant effect. Lastly, Human Model and Chronological types of Jigsaw Technique showed a significant effect on the knowledge acquisition of the students.

Moreover, it shows that significant difference on pre-test and post-test were identified and the significant effect as well on augmented peer-learning and jigsaw technique on knowledge acquisition. Therefore, all the hypotheses were rejected. This means that augmented peer-learning is beneficial in teaching Araling Panlipunan 9 and it will help the learners to express their ideas freely and show their uniqueness in learning.

Findings have been gathered, and recommendations for consideration have been made. The study was confined to four parts thus, more research is necessary to be carried out in the future to get more precise and reliable findings.

KEYWORDS: *teaching strategies; students' needs; subject complexity*

1. INTRODUCTION

Teaching methods have been cited as one of the difficult areas of education by numerous scholars and educators. Children only enter the cognition stage when they get to understand themselves, which is one of the objectives of modern educational techniques to foster critical and creative thinking. The most frequent issues that Araling Panlipunan teachers run into are the lack of interest of the students, the difficulty of enhancing the activities to meet the needs of the students and the complexity of the subject. These issues result in disruptive behaviour during class discussions, a lack of motivation to learn, and most importantly, failure to complete the task assigned to the students.

For the students of the twenty-first century, innovation is essential. Educators are mainly concerned with the authenticity of the learning environment and the learners should be skilled at integrating a range of abilities, including critical thinking, problem-solving, and teamwork. Teachers must be familiar with the learning theory that underpins 21st-century methods to educate learners on how to learn effectively. The educational learning theory explains how knowledge is received, processed, and retained by students while they are learning. There are numerous techniques and strategies for facilitating the process of learning, including variation theory (Cheng, 2016). Students who work together for a similar goal are exhilarated to study and become better in progress in class. Collaborative learning allows people who don't know as much to learn while working alongside those who do. Kenneth Bruffee first popularized the Classroom Consensus Group teaching strategy in 1972. In this approach, students are divided into groups and given questions or issues to address collectively refer to E-learning Essentials, (2020).

The Jigsaw method is one of the techniques that can encourage student collaboration; it has been found that when this method is used in collaborative learning, students' critical thinking processes when it comes to their capacity for expression and communication skills develop. In a Jigsaw classroom, the identically enrolled students are divided into 5–6 groups known as Jigsaw groups. The lecture has been divided up into parts. Each group member is given a part that is unique from the others. The class is then divided up again according to the

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section that was given to them. The new group is identified as the expert group, and each member is required to research and work together on the section that has been assigned. Students from various groups who have the same learning component assigned to them come together to discuss and tutor one another on the topic at hand, forming expert groups members return to their Jigsaw group to teach their separate allotted segments after having learned them. An exam is given to each student separately. Research by Salabuyba (2018) mentioned that it has convincingly demonstrated the effectiveness of this teaching strategy in a specific context.

To engage students and help them understand difficult issues relating to human behavior, civilizations, and cultures, social science teachers must employ a variety of strategies. Effective social science education sometimes needs a variety of strategies to accommodate various learning styles and objectives. Furthermore, building a supportive and inclusive learning atmosphere is critical for successful social science education this is the reason why the the researcher came up with the study of Augmented Peer Learning in Teaching Araling Panlipunan 9.

1.1 Statement of the Problem

Specifically, it sought to answer the following questions:

1. What is the level of use of Jigsaw Technique with regards to:
   - 1.1 Chronological Jigsaw;
   - 1.2 Procedural Jigsaw; and
   - 1.3 Model/Human Jigsaw?
2. What is the level of Augmented Learning in terms of:
   - 2.1 Active Participation;
   - 2.2 Engagement and Motivation;
   - 2.3 Diversity and Inclusion; and
   - 2.4 Adaptability?
3. What is the level of knowledge acquisition of the Grade 9 students in terms of:
   - 3.1 Visual Literacy;
   - 3.2 Critical Thinking; and
   - 3.3 Collaboration?
4. What is the level of pre-test scores of the students before using augmented peer learning?
5. What is the level of post-test scores of the students after using augmented peer learning?
6. Is there a significant effect between different types of jigsaw techniques and knowledge acquisition?
7. Is there a significant effect between augmented peer learning and knowledge acquisition?
8. Is there significant differences between the pre-test and post-test scores of the students in Araling Panlipunan 9 before and after using the jigsaw technique?

2. METHODOLOGY

As cited by Xueting Xiong, (2022) the definition of quantitative research varies amongst academics, although it usually includes similar essential components. Mohajan, Haradhan. (2021), "Quantitative" denotes number or quantities (how many) data collected during a study is analyzed using mathematical methods, including statistics, to answer questions such as who, what, when, where, how much, how many, and how. It deals with statistics, logic, and an objective viewpoint. In addition, Ghanad, Anahita, (2023) said in order to collect accurate and trustworthy data regarding variables, quantitative researchers must ask clear and focused questions to identify variables. An instrument is a sophisticated tool for measuring, monitoring, and recording quantitative data that includes customized options for questions and responses established by the researcher. Surveys, standardized examinations, and checklists are examples of research instruments that researchers might use to perform studies and collect numerical data.

3. RESULTS AND DISCUSSION

The chapter examines data revealing significant differences in pre-test and post-test scores among students, highlighting the influence of various teaching methods on knowledge acquisition and performance.

Level of Augmented Peer learning in terms of Chronological Jigsaw

This study assesses augmented peer learning, incorporating chronological, procedural, and human model jigsaw techniques, using mean and standard deviation.

Table 1 illustrates the degree of augmented peer learning utilization based on chronological jigsaw implementation. Students always employ sequential articulation (M=3.80, SD=0.48) and description of information (M=3.82, SD=0.48), alongside discussing information in order it is always easy to comprehend the sub-topic (M=3.79, SD=0.59). Additionally, they always organize information chronologically, prioritizing the importance of gathering data that helps them to improve their understanding (M=3.72, SD=0.71). These practices contribute to a consistent enhancement of respondents' understanding (M=3.75, SD=0.62). With a mean of 3.78 and a standard deviation of 0.58, the chronological jigsaw method significantly facilitated peer learning.

Participants in several research have consistently used these tactics, demonstrating their efficiency in improving understanding and efficiently organizing information.

Table 1. Level of use of Jigsaw Technique in terms of Chronological

Indicators	Mean	SD	Remarks
I used a listing in sequence of information while I was in my home group.	3.80	0.48	Always
I describe to myself in order all the information that I listed.	3.82	0.48	Always
When I am in the expert group, I discuss the information that I read in order so that it will be easy for us to understand the given sub-topic.	3.79	0.59	Always

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Using chronological I can arrange the information according to its importance or based on the information accrued.	3.72	0.71	Always
Chronological (listing, describing, or discussing) information helps me to improve my understanding.	3.75	0.62	Always

Overall Mean = 3.78
Standard Deviation = 0.58
Verbal Interpretation = Very High

The findings highlight the critical role that such strategies play in improving comprehension and long-term retention of learned knowledge. This highlights the need of incorporating such effective strategies into instructional methodologies to improve learning outcomes and promote long-term mastery of learned knowledge. By incorporating these techniques into instructional procedures, educators can foster a more complete grasp of the subject matter and long-term retention of taught content. Adopting these tactics not only improves the learning process, but also enables students to acquire strong cognitive skills that extend well beyond the classroom, promoting lifelong learning and intellectual progress.

Table 2. Level of use of Jigsaw Technique in terms of Procedural Jigsaw

Indicators	Mean	SD	Remarks
I used the art of questioning in my expert group so that we can recognize the information that are not clear.	3.67	0.65	Always
In my home group, I can easily identify the tasks that we need to do as a group.	3.76	0.59	Always
Procedures can help me identify my ideas in order.	3.78	0.54	Always
It is easy for me to perform a group activity presentation because of the procedures that I followed.	3.77	0.51	Always
In doing procedural jigsaw, I am confident about the outcome of the performance task.	2.57	1.85	Often

Overall Mean = 3.51
Standard Deviation = 1.09
Verbal Interpretation = Very High

Table 2 demonstrates the extent of augmented peer learning utilization about procedural jigsaw methodology. It indicated that students always pose questions to enhance their comprehension (M=3.67, SD=0.65), they are always able to recognize the collective task they need to accomplish (M=3.76, SD=0.59), a process can assist them in organizing their ideas (M=3.78, SD=0.54), they always find it easy to engage in group activities when they adhere to procedures (M=3.77, SD=0.51) often, respondents exhibit confidence in the anticipated outcome of the performance task (M=2.57, SD=1.85). With a mean of 3.51 and a standard deviation of 1.09, the procedural jigsaw technique significantly enhances peer learning. It fosters collaborative comprehension and knowledge exchange among participants.

Table 3. Level using of use of Jigsaw Technique in terms of Model/Human Jigsaw

Indicators	Mean	SD	Remarks
It is more engaging when the human model serves as a visual aid.	3.82	0.43	Always
It provides clear explanations of the concepts.	3.76	0.52	Always
It helps me to recall the content of the information because of human model visuals.	3.77	0.57	Always
It improves my comprehension and helps me illustrate complex ideas.	3.84	0.48	Always
It helps me to be more attentive.	3.80	0.51	Always

Overall Mean = 3.80
Standard Deviation = 0.50
Verbal Interpretation = Very High

Table 3 displays the extent of augmented peer learning utilization categorized by model/human jigsaw. It's always observed that respondents exhibit high engagement when human models serve as visual aids (M= 3.82, SD=0.43). They always receive clear explanations of concepts (M=3.76, SD=0.52), aiding in their recall of information (M=3.77, SD=0.57). Furthermore, it consistently enhances their comprehension and facilitates the illustration of complex ideas (M= 3.84, SD = 0.48), while also promoting attentiveness (M=3.80, SD = 0.51).

With an overall mean of 3.80 and a standard deviation of 0.50, the results consistently highlight the significant efficacy of implementing the human model jigsaw method in fostering peer learning.

Human models in collaborative learning have proven effective in fostering active engagement, knowledge exchange,

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comprehension improvement, and social-emotional skills among Araling Panlipunan learners.

Augmented Peer-Learning

In this study features of different types of jigsaws comprised active participation, engagement and motivation, diversity and inclusion, and adaptability and were statistically measured by mean and standard deviation.

Table 4. Level of Augmented Peer learning in terms of Active Participation

Indicators	Mean	SD	Remarks
I actively participated in sharing my ideas with my home group and expert group.	3.83	0.44	Always
I exert extra effort to help my classmates when they are having a hard time understanding the information.	3.83	0.45	Always
I was eager to participate because these techniques are new to me.	3.74	0.57	Always
I am actively participating in doing the procedures that I list down to our performance task.	3.82	0.50	Always
I was very attentive in listening to my classmates' performance so that I could understand the sequencing of information.	3.76	0.59	Always

Overall Mean = 3.80
Standard Deviation = 0.51
Verbal Interpretation = Very High

Table 4 displays data concerning the level of engagement with different aspects of various Jigsaw techniques, particularly emphasizing active participation. Students consistently demonstrate active participation by exchanging ideas with both home and expert groups (M=3.83, SD=0.44) as well as by showing a willingness to assist classmates struggling with comprehension (M=3.83, SD=0.45). Moreover, the novelty of the techniques appears to motivate participants to engage enthusiastically (M=3.74, SD=0.57), learners consistently adhere to the procedures for the performance task (M=3.82, SD=0.50), and remain attentive while listening to their classmates' performances (M=3.76, SD=0.59).

The overall mean of 3.80 and the standard deviation of 0.51 it is evident
that various types of jigsaw techniques have facilitated a remarkably high level of active participation among participants, demonstrating consistent engagement throughout different facets of the learning process. Jigsaw methodologies promote interactive learning, encouraging active participation from learners throughout the process, and highlighting their versatility and effectiveness in fostering collaborative and participatory learning experiences. Recent research highlights the significant impact of this active involvement.

This incisive study provides light on the positive effects of peer learning methodologies in educational settings, demonstrating that collaborative interactions among students may successfully improve their grasp of historical themes while also encouraging the development of higher-order thinking skills.

These findings highlight the value of integrating peer learning practices as a pedagogical tool for enriching students' learning experiences and promoting academic accomplishment.

Table 5. Level of Augmented Peer learning in terms of Engagement and Motivation

Indicators	Mean	SD	Remarks
The new techniques motivate me to focus on my learnings.	3.82	0.43	Always
New techniques make me enthusiastic to exert effort to understand the information well.	3.86	0.36	Always
I felt dominant in my learning process.	3.81	0.45	Always
I enjoyed doing the types of jigsaw techniques.	3.82	0.49	Always
I am motivated to do the task with more effort than what's expected.	3.82	0.47	Always

Overall Mean = 3.82
Standard Deviation = 0.44
Verbal Interpretation = Very High

Table 5 presents data regarding the degree of involvement with various facets of different Jigsaw techniques, with a particular emphasis on engagement and motivation. It indicates that the newly introduced technique was found to be motivating for learning (M=3.82, SD=0.43) and encouraged participants to exert effort in understanding the information (M=3.86, SD=0.36). Participants consistently felt empowered in their learning process (M=3.81, SD=0.45) and enjoyed the variety of Jigsaw techniques (M=3.82, SD=0.49), as well as exerting effort beyond the expected level (M=3.82, SD=0.47). With a mean of 3.82 and a standard deviation of 0.44, the diverse jigsaw techniques significantly enhance learner engagement and motivation.

They indicate a strong willingness and enthusiasm to delve into the subject matter and actively contribute to learning. These methods accommodate various learning styles and preferences, fostering active participation and collaboration among students. This heightened engagement aligns with the principles of inquiry-based learning, as advocated by Slavit et al. (2018),

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where students collaboratively construct knowledge and solve historical puzzles with their peers.

Table 6. Level of Augmented Peer learning in terms of Diversity and Inclusion

Indicators	Mean	SD	Remarks
In using the different types of jigsaw techniques caters to our differences in learning style.	3.75	0.57	Always
The different types of jigsaw techniques give equal opportunities for us students to learn.	3.80	0.42	Always
I am open to considering the ideas of my classmates.	3.83	0.44	Always
I am fair-minded when evaluating suggestions from my classmates to improve my performance. I am comfortable sharing my ideas and suggestions regarding the given task.	3.77	0.51	Always

Overall Mean = 3.79
Standard Deviation = 0.50
Verbal Interpretation = Very High

Table 6 presents data regarding the degree of involvement with various facets of different Jigsaw techniques, with a particular emphasis on diversity and inclusion. This suggests that it accommodates variations in learning styles (M=3.75, SD=0.57) and provides equitable opportunities for all students to learn (M=3.80, SD=0.42). Participants demonstrate openness to considering others' ideas (M=3.83, SD=0.44) and exhibit fairness in evaluating suggestions from peers to enhance their performance (M=3.83, SD=0.44). Additionally, they express comfort in sharing ideas and suggestions related to the assigned task (M=3.77, SD=0.51).

With an overall mean of 3.79 and a standard deviation of 0.50, the varied implementation of jigsaw techniques significantly fosters diversity and inclusivity among learners. These techniques accommodate and celebrate diverse learning styles and backgrounds, promoting collaboration, empathy, and mutual respect.

Table 7. Level of Augmented Peer learning in terms of Adaptability

Indicators	Mean	SD	Remarks
I can easily adapt to the new learning technique that my teacher instructed.	3.80	0.44	Always
I am flexible to follow the step-by-step process to help me explore more.	3.73	0.59	Always
Using the chronological, procedural, and human models, helps me to adapt to different learning environments.	3.88	0.46	Always
It helps me to assess my strengths and weaknesses in terms of my learning.	3.78	0.51	Always
Following the step-by-step process enables me to offer favorable assessments in my learning experience.	3.79	0.45	Always

Overall Mean = *3.80*
Standard Deviation = *0.49*
Verbal Interpretation = *Very High*

Table 7 provides insights into the level of engagement with various aspects of different Jigsaw techniques, focusing particularly on adaptability. This indicates that learners can readily adapt to the new learning techniques introduced by the teacher (M=3.80, SD=0.44) demonstrating flexibility in following step-by-step processes (M=3.73, SD=0.59). Employing chronological, procedural, and human models aids them in adjusting to diverse learning environments (M=3.88, SD=0.46) while they can easily evaluate their strengths and weaknesses in terms of learning (M=3.78, SD=0.51).

Moreover, adhering to step-by-step procedures enables them to provide favorable assessments of their learning experiences (M=3.79, SD=0.45).

With an overall mean of 3.80 and a standard deviation of 0.49, it becomes evident that the utilization of diverse Jigsaw techniques notably boosts learners' adaptability. The study's findings imply that incorporating Jigsaw approaches into instructional methodology improves learners' flexibility and promotes their performance in diverse learning situations. Jigsaw approaches can help instructors create a dynamic learning environment that stimulates cooperation, critical thinking, and mutual respect among students.

This strategy not only encourages academic success, but it also provides students with critical skills for navigating and flourishing in today's increasingly varied and interconnected society.

As a result, incorporating Jigsaw ideas into educational procedures has enormous promise for empowering students to flourish academically and thrive in different learning environments.

This personalized approach enables educators to adjust

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instructional strategies and activities to individual learners' particular strengths and limits, resulting in a learning environment that is highly responsive to each student's requirements. This technique helps learners not only achieve academic achievement but also acquire skills and confidence.

Level of Knowledge Acquisition

In this study student's knowledge acquisition includes visual literacy, critical thinking and collaboration and were statistically measured by mean and standard deviation.

Table 8. Level of knowledge acquisition of the Grade 9 students in terms of Visual Literacy

Indicators	Mean	SD	Remarks
It is easy for me to understand the lesson when there are available images, diagrams, and infographics.	3.82	0.47	Always
I successfully utilized visual information provided by the human model.	3.78	0.56	Always
The visual information provided by the human model is appropriate and aligned to the given task.	3.77	0.50	Always
Visual literacy through human models contributes to a more comprehensive understanding of complex concepts.	3.84	0.62	Always
I am confident in interpreting and understanding the visual information provided.	3.77	0.48	Always

***Overall Mean** = 3.79*
***Standard Deviation** = 0.53*
***Verbal Interpretation** = Very High*

Table 8 provides insights into students' perspectives regarding their acquisition of knowledge in visual literacy. Consistently, students express that visual aids facilitate easy comprehension of lessons (M=3.82, SD=0.47) and they effectively utilize visual information provided by human models (M=3.78, SD=0.56) the visual information provided by the human model is deemed suitable and relevant to the assigned task (M=3.77, SD=0.56). Moreover, they perceive that visual literacy, particularly through human models, significantly contributes to their comprehensive understanding of complex concepts (M=3.84, SD=0.62). Additionally, students demonstrate confidence in interpreting and understanding visual information, finding it suitable for the in given tasks (M= 3.77, SD=0.48).

The overall mean of 3.79 and the standard deviation of 0.53 it becomes evident that students exhibit a high level of knowledge acquisition in visual literacy. Students in the study recognize the significant role played by visual aids and the information conveyed by human models in enhancing their comprehension of lessons and intricate concepts.

Table 9. Level of knowledge acquisition of the Grade 9 students in terms of Critical Thinking

Indicators	Mean	SD	Remarks
I can analyze and think critically based on the information given.	3.76	0.50	Always
Chronological and procedural jigsaw helps me to break down the information given into smaller parts, and I can analyze each component.	3.72	0.54	Always
Based on my experience in using the types of jigsaw I can critically evaluate the information, conclude, or form opinions.	3.76	0.58	Always
Through using the different types of jigsaw the information that I gain is credible and reliable.	3.77	0.53	Always
Using these types of jigsaw I develop my critical thinking skills.	3.81	0.49	Always

***Overall Mean** = 3.76*
***Standard Deviation** = 0.53*
***Verbal Interpretation** = Very High*

Table 9 presents insights from students regarding their level of knowledge acquisition regarding critical thinking. Students consistently noted their ability to analyze and think critically based on provided information (Mean=3.76, SD=0.50). They find that employing chronological and procedural methods helps them break down information into smaller parts for analysis (M=3.72, SD=0.54). Additionally, utilizing various types of jigsaw techniques enables them to critically evaluate information and formulate conclusions or opinions (M=3.76, SD=0.58). Students also perceive that the use of different types of jigsaw methods enhances the credibility and reliability of the information they acquire (M=3.77, SD=0.53). Furthermore, they believe that employing these jigsaw techniques contributes to the development of their critical thinking skills (M=3.81, SD=0.49).

The overall mean score of 3.76, with a standard deviation of 0.53, suggests that students have achieved a high level of knowledge acquisition in critical thinking. This indicates a strong recognition from students regarding their ability to engage in critical analysis, especially when confronted with information.

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These methods facilitate the breakdown of information into manageable components, thereby assisting students in effectively dissecting and analyzing complex concepts to improve students' critical thinking abilities, educators should utilize teaching techniques and frameworks that prioritize student involvement and creativity.

Table 10. Level of knowledge acquisition of the Grade 9 students in terms of Collaboration

Indicators	Mean	SD	Remarks
Collaborating with others helps me learn new concepts or tackling challenges	3.78	0.50	Always
I am active in listening and seeking clarification when needed.	3.74	0.54	Always
I am sharing ideas and accepting feedback openly and respectfully in collaborative work.	3.82	0.41	Always
I am responsible for my assigned roles and tasks given.	3.84	0.45	Always
Despite our differences in learning styles, collaborative work facilitated deeper learning and understanding.	3.79	0.46	Always

***Overall Mean** = 3.80*
***Standard Deviation** = 0.48*
***Verbal Interpretation** = Very High*

Table 10 presents insights from students regarding their level of knowledge acquisition regarding collaboration. It shows that students always help them learn new concepts when collaborating with others (Me=3.78, SD=0.50). They are always active in listening and seeking clarification when there is a collaboration (M=3.74, SD=0.54). Additionally, sharing ideas and accepting feedback openly and respectfully always adhere when they are collaborating (M=3.82, SD=0.41). Students are always responsible for the assigned task given (M=3.84, SD=0.45). Furthermore, despite their differences in learning styles, collaborative work facilitated deeper learning and understanding for them. (M=3.79, SD= 0.46).

With the overall mean score of 3.80, with a standard deviation of 0.48 suggests that students have achieved a high level of knowledge acquisition when doing collaborative work.

Table 11. Pre-test scores of the students before using Augmented Peer-Learning

Scores	Frequency	Percentage	Remarks
25-30	0	0.00%	Outstanding
19-24	3	2.48%	Very Satisfactory
13-18	31	25.62%	Satisfactory
7-12	82	67.77%	Fairly Satisfactory
0-6	5	4.13%	Needs Improvement

***Overall Mean** = 11.01*
***SD** = 3.27*
***Verbal Interpretation** = Fairly Satisfactory*

Table 11 presents the pre-test scores of students before using augmented peer learning, along with their frequencies and percentages. Most students (67.77%) fell into the Fairly Satisfactory range (7-12), suggesting that most students had a moderate level of performance. A significant portion of students (25.62%) scored in the Satisfactory range (13-18), indicating a reasonable level of performance for this group. A small proportion of students (2.48%) achieved a Very Satisfactory performance (19-24). A few students (4.13%) scored in the lowest range (0-6), indicating a need for improvement in their performance.

The overall result shows that the pre-test scores suggest that while most students performed fairly satisfactorily, there is also a notable portion that requires improvement. This highlights the potential for enhancement through the implementation of augmented peer learning strategies.

Table 12. Post-test scores of the students after using Augmented peer-Learning

Scores	Frequency	Percentage	Remarks
25-30	6	4.96%	Outstanding
19-24	45	37.19%	Very Satisfactory
13-18	61	50.41%	Satisfactory
7-12	15	12.40%	Fairly Satisfactory
0-6	0	0.00%	Needs Improvement

***Overall Mean** = 17.58*
***SD** = 4.14*
***Verbal Interpretation** = Satisfactory*

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Table 12 presents the pre-test scores of students before using augmented peer learning, along with their frequencies and percentages. Many students (50.41%) fell into the Satisfactory range (13-18), suggesting that most students had a satisfactory level of performance. A significant portion of students (37.19%) scored in the Very Satisfactory range (19-24), indicating a reasonable level of performance for this group. A small proportion of students (4.96%) achieved an Outstanding performance (25-30). A few students (12.40%) scored in the Fairly Satisfactory (7-12), indicating that there is an improvement in their performance. Overall, the post-test scores suggested that most students performed Satisfactory, there is also a notable portion that still requires improvement.

It highlights the tremendous room for improved with augmented peer learning methods. Pre-and post-test scores are a critical way of nominating the efficacy of educational interventions and evaluating student learning outcomes. Moreover, the peer-to-peer exercises APL enabled students to explain concepts to one another, thereby increasing their own understanding and consolidating the material by giving it practical meaning.

This data-driven approach not only serves as the foundation for evidence-based decision-making, but it also provides educators with the flexibility to modify and enhance teaching strategies to meet their students' various requirements. Using post-test scores and performing comprehensive assessments of educational interventions, educators may get useful insights into the success of their teaching techniques and suggest areas for improvement. This iterative process of reflection and adjustment fosters a culture of continuous improvement, wherein educators are committed to refining their practices to enhance student learning outcomes.

Table 13. Significant effect of the Grade 9 learners on the jigsaw technique and knowledge acquisition

Types of Jigsaw Technique	Knowledge acquisition	Beta	*SE*	95 % CI		β	*P*
				LL	*UL*		
Chronological	Visual Literacy	-0.021	0.060	-0.140	0.098	-0.023	0.726
Procedural		-0.003	0.043	-0.089	0.083	-0.005	0.944
Human Model		0.122	0.095	-0.067	0.311	0.095	0.204
Chronological	Critical Thinking	-0.076	0.069	-0.213	0.061	-0.070	0.273
Procedural		0.014	0.050	-0.084	0.113	0.019	0.776
Human Model		0.232	0.110	0.015	0.449	0.156	0.036*
Chronological	Collaboration	0.141	0.070	0.002	0.279	0.154	0.047*
Procedural		0.019	0.050	-0.080	0.119	0.031	0.700
Human Model		0.057	0.111	-0.164	0.277	0.045	0.611

*Note: * $p < .05$.*

Table 13 presents the results of a statistical analysis examining the significant effect between different types of Jigsaw techniques and knowledge acquisition across various dimensions. Among the types of jigsaw techniques, the human model shows a statistically significant positive effect on critical thinking (p=0.036), with a beta coefficient of 0.232. This suggests that utilizing the human model technique is associated with a significant improvement in visual literacy compared to other techniques. In terms of chronological jigsaw, collaboration also shows a positive significant effect (p=0.047) with a beta coefficient of 0.141 where (p<0.05).

In conclusion, the identified significant effects of the human model and chronological jigsaw techniques on critical thinking and collaboration, respectively, underscore students' potential to enhance student learning experiences. Jigsaw encourages collaboration among students, as they work together to master the entire content by sharing their expertise.

In conclusion, the intentional incorporation of human models and chronological jigsaw approaches into teaching practices is a multidimensional approach with far-reaching implications. This inclusive pedagogical technique does more than just improve critical thinking and teamwork; it also fosters a lively and dynamic learning environment in which students are empowered to actively participate in their education.

Simultaneously, using chronological jigsaw approaches promotes collaborative learning experiences that foster cooperation, communication, and problem-solving abilities. Ultimately, the combination of human models with chronological jigsaw procedures creates a strong instructional paradigm that goes beyond teaching standards. It enables educators to build an immersive learning experiences for students that foster curiosity, creativity, and lifelong learning, creating the framework for the next generation.

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Table 14. Significant effect of Grade 9 learners of augmented peer-learning and knowledge acquisition

Augmented Peer-Learning	Knowledge Acquisition	Beta	*SE*	95 % CI *LL*	95 % CI *UL*	β	*P*
Active Participation	Visual Literacy	0.018	0.096	-0.173	0.209	0.015	0.850
Engagement and Motivation		0.634	0.100	0.435	0.833	0.506	0.000*
Diversity and Inclusion		0.168	0.087	-0.003	0.340	0.163	0.044*
Adaptability		0.199	0.091	0.019	0.379	0.168	0.031*
Active Participation	Critical Thinking	0.111	0.111	-0.108	0.331	0.078	0.318
Engagement and Motivation		0.202	0.115	-0.027	0.430	0.138	0.083
Diversity and Inclusion		0.335	0.099	0.138	0.532	0.280	0.001*
Adaptability		0.460	0.104	0.253	0.666	0.334	0.000*
Active Participation	Collaboration	-0.052	0.112	-0.275	0.171	-0.043	0.645
Engagement and Motivation		0.128	0.117	-0.103	0.360	0.104	0.275
Diversity and Inclusion		0.194	0.101	-0.006	0.394	0.191	0.057
Adaptability		0.474	0.106	0.264	0.683	0.408	0.000*

*Note: * p < .05.*

Table 14 presents the results of a statistical analysis examining the significant effect between augmented peer-learning and knowledge acquisition across various dimensions.

Within the attributes of the jigsaw technique, engagement, and motivation exhibit a statistically notable positive effect on visual literacy (p=0.000), with a beta coefficient of 0.634. This indicates that engagement and motivation are linked to a substantial enhancement in visual literacy compared to other characteristics. Regarding critical thinking, adaptability similarly demonstrates a positive significant effect (p=0.000) with a significance level of ($p < 0.05$). Lastly, collaboration also displays a positive significant effect (p=0.000) with a significance level of ($p < 0.05$).

In conclusion, the identified significant effects of the features of types of jigsaw on visual literacy, critical thinking, and collaboration, respectively, underscore students' potential to enhance student learning experiences. By pushing students to collaborate in order to fully comprehend the material, the Jigsaw approach promotes student collaboration.

Students who teach and learn from one another not only improve their own understanding but also acquire vital abilities like critical thinking, cooperation, and communication. By fostering a shared and dynamic learning environment, this collaborative method improves educational outcomes for both individuals and the group as a whole.

Lester highlights that by involving several cognitive processes, visual analysis promotes a deeper comprehension and memory of the material. Through critical analysis of graphics, students may draw conclusions, link ideas, and notice details that they would miss in text-based material. Because of this, visual analysis is not only an essential ability in the current information era but a very helpful teaching strategy that improves critical thinking.

Table 15. Significant differences between pre-test and post-test scores of the students

	Pre-test			Post-test					
Performance	*M*	*SD*		*M*	*SD*	Mean Difference	*T*	*df*	*P*
Scores	11.01	3.27		17.58	4.14	6.57	-19.86	120	0.000*

*Note: * p < .05.*

Table 15 shows the significant difference in the pre-test and post-test scores of the students. There is a significant difference between the pre-test and post-test scores of the students showing (M= 11.01) in the pretest and (M=17.58) in the post-test. This means that there was a substantial improvement in student's performance from the beginning to the end of the instructional intervention. The jigsaw technique promotes active engagement among students by requiring them to work collaboratively, share knowledge, and teach each other. This active involvement in the learning process is known to enhance understanding and retention of information.

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Additionally, students can refine their critical thinking skills. By infusing the learning environment with elements of excitement and novelty, educators can ensure that the educational experience remains engaging and captivating, thereby preventing boredom and fostering a deeper level of student involvement.

4. CONCLUSION AND RECOMMENDATIONS

Based on the findings of the study, the following conclusions were made it was shown that the different types of jigsaw techniques in terms of chronological, procedural, and model/human, are all very high; augmented peer-learning in terms of active participation, engagement and motivation, diversity and inclusion, and adaptability are all very high; knowledge acquisition in terms of visual literacy, critical thinking, and collaboration were all very high; pre-test scores suggest that most of students performed fairly satisfactorily; post-test scores most of the students performed satisfactory.

In the types of jigsaw technique, human model shows a statistically significant positive effect on critical thinking. This suggests that utilizing the human model technique is associated with a significant improvement at 0.05 level of significance in visual literacy compared to other techniques. Within the augmented peer-learning, engagement and motivation exhibit a statistically notable significant effect at 0.05 level of significance on visual literacy. This indicates that engagement and motivation are linked to a substantial enhancement in visual literacy compared to other characteristics. While critical thinking, adaptability, and collaboration show a significant positive effect, and it shows that there is a significant difference at 0.05 level of significance between the student's pre-test and post-test, and there is a substantial improvement in student performance from the beginning to the end of the technique intervention. It also shows that there is a significant difference in knowledge acquisition before and after using augmented peer learning with different types of jigsaw. Also, it was shown that there is an effect on the student's performance after using augmented peer learning in different types of jigsaw.

Furthermore, it shows that significant difference on pre-test and post-test were identified and the significant effect as well on augmented peer-learning and jigsaw technique on knowledge acquisition. Therefore, all the hypotheses were rejected.
This suggests that using enhanced peer-learning methodologies in teaching Araling Panlipunan 9 can be quite beneficial. Not only promotes a participatory and collaborative learning environment, but it also greatly improves students' capacity to openly communicate their views and ideas.

Additionally, by fostering a community of support in the classroom, this approach enhances the learning environment overall by allowing students to feel more at ease researching and sharing their knowledge.

Based on the findings, the following were recommended for consideration:

1. Teachers may use differentiated instructions and offer multiple pathways to learning like different types of jigsaw techniques that will help the students to be responsible with their learning.
2. Teachers may establish a welcoming environment in the classroom where students are inspired to boldly explore new ideas, ask questions, and share their thoughts. Recognize and value each student's unique experiences, backgrounds, and viewpoints.
3. Since the research revealed a significant positive effect on student performance using various types of jigsaw techniques in Araling Panlipunan 9, the researcher recommends that teachers may incorporate these techniques into their daily classroom instruction.

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