



# Effect of Mnemonics in the Teaching of Araling Panlipunan 9 on Students' Written Assessment Scores: A One-Group Study Design

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## Authors' contributions

*This work was carried out in collaboration among all authors. The authors designed the study, wrote the protocol, and wrote the first draft of the manuscript. They managed the analyses of the study and managed the literature searches. All authors read and approved the final manuscript.*

## Article Information

DOI: <https://doi.org/10.9734/ajess/2024/v50i61410>

## Open Peer Review History:

This journal follows the Advanced Open Peer Review policy. Identity of the Reviewers, Editor(s) and additional Reviewers, peer review comments, different versions of the manuscript, comments of the editors, etc are available here: <https://www.sdiarticle5.com/review-history/117310>

**Original Research Article**

**Received: 10/03/2024**

**Accepted: 16/05/2024**

**Published: 18/05/2024**

## ABSTRACT

This study investigated the effectiveness of mnemonics in teaching Araling Panlipunan 9 on students' written assessment scores. It used a one-group pretest-posttest design, a quasi-experimental design of the quantitative research methodology. The study was conducted at a National High School in Apayao, Philippines. Purposive sampling was used to select 40 Grade 9 students as participants. The researchers used a validated assessment instrument adopted from the Department of Education modules. The results showed that the students improved their scores significantly after using mnemonics in teaching, as indicated by the increase in the mean average

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**Cite as:** Marcos, R. J. U., Asuncion, C. J. A., Agbayani, L. J. A., & Mabborang, F. D. N. (2024). Effect of Mnemonics in the Teaching of Araling Panlipunan 9 on Students' Written Assessment Scores: A One-Group Study Design. *Asian Journal of Education and Social Studies*, 50(6), 242–249. <https://doi.org/10.9734/ajess/2024/v50i61410>

score, the rejection of the null hypothesis, and the positive correlation between mnemonic usage and performance. The study recommended continuing to use mnemonic techniques in teaching Araling Panlipunan 9, providing remedial support to low-performing students, and promoting active student engagement in the learning process.

*Keywords: Mnemonics; written assessment; Araling Panlipunan 9.*

## 1. INTRODUCTION

Mastery in social studies is a vital educational objective that involves more than memorizing facts and dates [1]. It demands a deep understanding of concepts, critical thinking skills, and the ability to apply knowledge in various contexts. It helps students understand and interpret historical, geographic, economic, political, cultural, and societal aspects of the world. It equips students for informed decision-making, civic engagement, and global citizenship. An important aspect of students' for effective learning and potential deep concept mastery is the use of mnemonic. Mnemonic devices are powerful tools that help students remember and retrieve information more effectively [2]. They use associations, acronyms, rhymes, images, or stories to support students in organizing and retaining factual information in social studies.

Educators can use mnemonic devices effectively to help students master social studies by simplifying and connecting complex information. They enhance student engagement, motivation, creativity, and performance in written assessments. Research supports their effectiveness: Colak and Aydin [2] found mnemonics boost academic success and retention in history, while Conderman [3] and Padernal [4] showed they aid memory retention and recall across subjects. Mnemonic devices provide a structured framework for organizing and encoding complex topics, improving comprehension and written performance. They also encourage active participation, increasing knowledge retention, confidence, motivation, and self-efficacy. Thus, mnemonic devices are a valuable instructional strategy in social studies education.

Despite the importance of Social Studies education for developing students' knowledge, skills, values, and attitudes for active citizenship, some students in the Philippines face written assessment difficulty in memorizing and understanding Economics (Araling Panlipunan 9 of the K to 12 Araling Panlipunan Curriculum).

This is further proven by the observation and records of Social Studies Pre-Service Teachers in a National High School in Apayao province of the Cordillera Administrative Region. One possible way to address this challenge is to use mnemonics as an instructional strategy to help students remember and retrieve information more effectively. However, there is a scarcity of empirical research on how mnemonics can enhance the written assessment of students in Araling Panlipunan 9, especially in secondary schools. Therefore, this study aims to fill this gap by investigating the effect of mnemonics on the written assessment of students in Araling Panlipunan 9 in a secondary school.

Mnemonics can improve students' comprehension, memory, and grades in social studies. However, more research is needed to measure their impact, especially for Araling Panlipunan 9 in secondary schools. This study may contribute to the improvement of Social Studies instruction and curriculum, as well as to the development of innovative and culturally relevant teaching strategies for enhancing student learning outcomes.

### 1.1 Statement of the Problem

Student performance in Araling Panlipunan 9 has been consistently poor, raising concerns about the effectiveness of current teaching methods. There is a notable dissatisfaction with the instructional strategies used, and the social studies curriculum appears inadequate and sometimes irrelevant, necessitating a more effective teaching approach. This study seeks to address these issues by investigating whether mnemonic devices can enhance students' written assessment scores, improve retention, and foster greater engagement in the subject.

### 1.2 Aim and Objectives of the Study

The study aimed to determine the effect of mnemonics in teaching araling panlipunan 9 to the students' written assessment using a one-group study design.

Specifically, the objectives are to:

1. Ascertain the written assessment score of students in Araling Panlipunan 9 before using mnemonics in teaching.
2. Determine the written assessment score of students in Araling Panlipunan 9 after using mnemonics in teaching.
3. Determine the significant difference in the written assessment score of students before and after using mnemonics in teaching Araling Panlipunan 9.

**Research Questions:** The following research questions were stipulated for the study.

1. What is the written assessment score of students in Araling Panlipunan 9 before using mnemonics in teaching?
2. What is the written assessment score of students in Araling Panlipunan 9 after using mnemonics in teaching?

### Hypothesis

**Ho<sub>1</sub>:** There is no significant difference in the written assessment score of students before and after using mnemonics in teaching Araling Panlipunan 9.

### 1.3 Scope and Delimitation of the Study

This study focused on determining the effectivity of mnemonics in teaching the Araling Panlipunan 9 on Grade 9 Silver students' written assessment score. In this study, the specific topic utilized for teaching Araling Panlipunan 9 to the respondents at a National High School was "Patakarang Pananalapi" (Monetary Policy). This topic was chosen because it was widely perceived as one of the most challenging topics for students in Araling Panlipunan 9 (Economics). By focusing on a challenging topic, the study sought to assess the potential benefits of mnemonics in enhancing students' overall written assessment in Araling Panlipunan 9.

The study was conducted in the third quarter (February-April) of 2023 wherein a total of 12 non-consecutive hours was allotted for the study. The respondents for this study were selected from the total population of 40 students currently enrolled in the School Year 2022-2023. All students in Grade 9 Silver participated in the

study, ensuring a complete representation of the target population.

The study employed a validated assessment instrument adopted from Balitao et al. (2015) for both pretest and posttest measurements. The instrument, validated by the Department of Education, ensured reliable and accurate data aligned with curriculum standards, enhancing the validity and credibility of the findings.

The implementation of mnemonics involved designing and incorporating mnemonic devices aligned with the content of Aralin 6: Patakarang Pananalapi. These mnemonic devices included associations, acronyms, images, or key words, aimed at enhancing the students' organization and retention of factual information related to financial policies.

It is important to acknowledge the limitations of the One-Group Pretest-Posttest Design employed in this study. These limitations include the absence of a control group, making it challenging to determine whether the observed changes in written assessment score were solely attributed to the use of mnemonics or influenced by other factors. Additionally, potential maturation effects and external factors unrelated to the use of mnemonics were not accounted for, as well as potential threats to internal validity, such as history, testing, and instrumentation.

## 2. METHODOLOGY

This chapter presents the research design, locale of the study, population and sampling procedures, research instruments, data gathering procedure, statistical treatment of data and ethical consideration.

### 2.1 Research Design

The study employed the one-group pretest-posttest design which is a type of quasi experimental design of the quantitative research methodology. The one-group pretest-posttest design is a pre-experimental design where a single group of participants is pretested, given some treatment or independent variable manipulation, then post tested (Knapp, 2016).

The one-group pretest-posttest design is acceptable for determining the effect of using mnemonics in teaching Araling Panlipunan 9 on students' written assessment score. The pretest scores provide a baseline for understanding the

students' written assessment score in Araling Panlipunan 9 prior to the implementation of the mnemonic strategy. After the intervention, the posttest scores are compared to the pretest scores to determine whether there is a significant difference in written assessment score after the use of mnemonics in teaching.

## 2.2 Locale of the Study

The research was conducted at a National High School in Luna, Apayao in the Philippines. It is a secondary public school under the Department of Education in the Philippines.

## 2.3 Population and Sampling

The population for this study consisted of Grade 9 students at a National High School. A sample of students from the Grade 9 Silver class with 40 students was selected using purposive sampling.

## 2.4 Research Instrument

The researchers used a validated assessment instrument to measure the students' written assessment score in both the pretest and posttest phases. The instrument, which was adopted from the modules of Balitao et al. (2015), had been validated by the Department of Education to ensure that it provided reliable and accurate data aligned with curriculum standards. This enhanced the validity and credibility of the study's findings. The 20-item test consisted of enumeration items that assessed the students' knowledge of Araling Panlipunan 9 specifically on Monetary Policy.

## 2.5 Data Gathering Procedure

The researchers conducted their study after the approval of their Thesis Proposal at Apayao State College. They also got the approval of the School Principal and Cooperating Teacher to conduct the study at the National High School.

The researchers gathered data via face to face wherein they analyzed the results of the study using inferential statistics and drew inferences of the results of the study. The study was conducted in the third quarter (February-April) of 2023 wherein a total of 12 non-consecutive hours was allotted for the study.

## 2.6 Statistical Treatment of the Data

The data gathered in the study was analyzed by using the following statistical tools and techniques:

Inferential statistics was used on the other hand to test the significant differences of the variables under investigation.

Paired-samples t-test was used to compare the mean difference between the pre-test and post-test scores. The result of their scores will be measured by the following descriptors adapted from the Department of Education:

**Table 1. Descriptive Interpretation**

Range of Scores	Descriptive Interpretation
18-20	Outstanding
17	Very Satisfactory
16	Satisfactory
15	Fairly Satisfactory
14 and below	Did Not Meet Expectation

## 3. RESULTS

This chapter discusses the presentation, analysis, and interpretation of the data collected by the researchers. The discourse encompasses the pre-test and post-test written assessment scores in Araling Panlipunan 9 specifically the written assessment in monetary policy. Additionally, it determines if there is a significant difference between the pre-test and post-test scores.

### 3.1 What is the Written Assessment Score of Students in Araling Panlipunan 9 before Using Mnemonics in Teaching?

The result of Table 2 showed that Grade 9 Silver students in the National High School did not meet the expectation of the desired outcome in their written assessment for Araling Panlipunan 9. The mean average score of 12.1500 was below the expected level in their pre-test scores.

This finding suggests that the current teaching methods or approaches used in the classroom prior to implementing Mnemonics in Teaching may not have been effective in helping the students grasp and retain the subject material. It indicates a potential need for improvement in the instructional strategies or curriculum design for Araling Panlipunan 9. Furthermore, the low mean score could also imply a lack of understanding or engagement with the subject matter, which may require additional support and intervention to enhance the students' learning experience.

**Table 2. Score of students in Araling Panlipunan 9 before using mnemonics in teaching**

	Written Assessment Score of Students	Descriptive Interpretation
Pre-Test	12.1500	Did Not Meet Expectation

Source: Researcher's fieldwork, 2023

**Table 3. Score of students in Araling Panlipunan 9 after using mnemonics in teaching**

	Written Assessment Score of Students	Descriptive Interpretation
Post-Test	18.775000	Outstanding

Source: Researcher's fieldwork, 2023

**Table 4. Shows the T-Test Score of Students Before and After Using Mnemonics**

	Mean	Correlation	P value	Decision
Pre-test	12.1500			
Post-test	18.7750	.423	< .001	Reject the Null Hypothesis

Source: Researcher's fieldwork, 2023

### 3.2 What is the Written Assessment Score of Students in Araling Panlipunan 9 after Using Mnemonics in Teaching?

Table 3 presents the post-test scores of Grade 9 Silver students in their written assessment in Araling Panlipunan 9 before Using Mnemonics in Teaching in the National High School.

The written assessment for Araling Panlipunan 9 showed that the Grade 9 Silver students in the National High School achieved outstanding results. The mean average score of 18.775000 was above the expected level of the desired outcome in their post-test scores.

The finding suggests that the implementation of Mnemonics in Teaching has had a positive impact on the performance of Grade 9 Silver students in their written assessment for Araling Panlipunan 9 at the National High School. The significant increase in the mean average score from the pre-test to the post-test (from 12.1500 to 18.775000) indicates that, on average, the students have surpassed the expected level and achieved outstanding results. The positive outcomes of implementing Mnemonics in Teaching highlight the importance of employing effective instructional techniques that cater to students' memory and learning needs, ultimately leading to improved academic performance.

### 3.3 There is No Significant Difference in the Written Assessment Score of Students Before and After Using Mnemonics in Teaching Araling Panlipunan 9

Table 4 presents the t-test scores of Grade 9 Silver students in their written assessment in Araling Panlipunan 9 before and after Using Mnemonics in Teaching in the National High School.

According to the findings of the study, the null hypothesis, which asserts that there is no significant change in the written evaluation score of students before and after utilizing mnemonics in teaching Araling Panlipunan 9, may be rejected. The statistical test yielded a p-value less than 0.001, indicating that the observed difference in scores is extremely unlikely to be due to chance alone. Furthermore, a correlation value of 0.423 was discovered, demonstrating a somewhat good association between mnemonic usage and students' written evaluation results. These data indicate that introducing mnemonics into the teaching of Araling Panlipunan 9 has a substantial influence on students' performance, demonstrating the usefulness of this instructional strategy in improving their learning outcomes.

## 4. DISCUSSION

The study was concerned with the of mnemonics in teaching araling panlipunan 9 to the students' written assessment using a one-group study design. The finding of research question 1 suggested that the current teaching methods or

approaches used in the classroom prior to implementing Mnemonics in Teaching may not have been effective in helping the students grasp and retain the subject material. The findings of this study collaborates with that of Hirsh et al [5] and Putnam [6] were it was revealed that the low mean score of the students in Araling Panlipunan 9, a subject that covers Economics, before implementing Mnemonics in Teaching indicates that the current teaching methods or approaches were ineffective in helping them learn and write in social studies. This finding is supported by previous research that emphasizes the importance of choosing appropriate teaching methods and approaches for different subjects and contexts.

Writing in social studies requires students to demonstrate their understanding of complex concepts, historical events, and diverse perspectives, as well as to use evidence, arguments, and critical thinking [7]. However, many students may lack the necessary skills and strategies to write effectively due to various factors, such as prior knowledge, motivation, or feedback [8,9]. Therefore, teachers should provide explicit instruction and scaffolding for writing in social studies, such as using graphic organizers, rubrics, models, and peer review [10], to help students improve their writing skills and confidence, as well as their content knowledge and appreciation of social studies.

Also, the findings of research question 2 revealed that the implementation of Mnemonics in Teaching has had a positive impact on the performance of Grade 9 Silver students in their written assessment for Araling Panlipunan 9 at the National High School. The finding supports previous research that has demonstrated the effectiveness of mnemonic techniques in enhancing students' understanding, retention, and retrieval of information and concepts in various subjects, including social studies [11,6]. Mnemonics are memory aids that help students remember information more easily and meaningfully by creating associations with familiar words or images (Education World, n.d.; LD Online, n.d.). The use of mnemonic strategies can also increase students' interest and motivation in learning by making it more fun and creative (LD Online, n.d.). Moreover, mnemonics can help students overcome the challenges of learning complex and abstract topics in social studies, such as history and economics, by providing them with concrete and memorable cues [2,12]. Mnemonics can also facilitate the integration of prior knowledge and new

information, which is essential for meaningful learning in social studies [13]. Therefore, employing mnemonic techniques in teaching can be a powerful way to improve students' learning outcomes and appreciation of social studies.

The null hypothesis stated for the study was rejected indicating that there is significant difference in the written assessment score of students before and after using mnemonics in teaching Araling Panlipunan 9. The study's findings are consistent with earlier research demonstrating the efficacy of mnemonics in improving students' acquisition and retention of content-specific vocabulary in a variety of areas, including social studies. Swanson et al. [14] discovered, for example, that mnemonic training enhanced students with learning difficulties' performance on social studies assessments when compared to regular education. Similarly, Berkeley and Scruggs [15] found that children with learning difficulties who received mnemonic training scored better than their classmates who received direct instruction on social studies facts. Mnemonics can help pupils identify new words with familiar visuals or sounds, facilitating knowledge acquisition and retrieval (Mastropieri & Scruggs, 1998). Furthermore, by making the subject more relevant and engaging, mnemonics can boost students' motivation and interest in studying [16]. As a result, mnemonics may be inferred to be a good instructional approach for teaching Araling Panlipunan 9 and other social studies courses [17,18].

## 5. CONCLUSION

It is concluded that the Grade 9 Silver students in the National High School did not achieve the desired outcome in their written assessment for Araling Panlipunan 9, as evidenced by their below-average mean score of 12.1500 in the pre-test. This suggests that their initial understanding and knowledge of the subject were insufficient to meet the expected level of performance.

It is concluded that the Grade 9 Silver students in the National High School demonstrated exceptional performance in their written assessment for Araling Panlipunan 9. The post-test results revealed a mean average score of 18.775000, surpassing the expected level of the desired outcome. This indicated that the students significantly improved their understanding and knowledge of the subject, resulting in higher scores. The achievement of outstanding results highlights the effectiveness of the instructional methods and interventions implemented in the

teaching of Araling Panlipunan 9 at the National High School. It signified the students' ability to apply their learning, critical thinking skills, and mastery of the subject matter.

It is concluded that the findings of the study provided strong evidence to reject the null hypothesis, which suggests no significant change in the written evaluation score of students before and after the implementation of mnemonics in teaching Araling Panlipunan 9. The statistical analysis, with a p-value of less than 0.001, indicated that the observed difference in scores is highly unlikely to occur by chance alone. This suggested that the utilization of mnemonics has a significant impact on students' written evaluation results. Additionally, the moderate positive correlation value of 0.423 indicates a favorable association between the use of mnemonics and students' performance. These findings support the effectiveness of mnemonics as an instructional strategy in improving students' learning outcomes in Araling Panlipunan 9 and highlight the potential benefits of incorporating mnemonic techniques in the teaching curriculum.

## 5. RECOMMENDATIONS

Considering the findings and conclusions, the following recommendations are presented:

**Continued Integration of Mnemonic Techniques:** The study findings strongly suggest that the utilization of mnemonic techniques had a significant impact on students' written evaluation results in Araling Panlipunan 9. It is recommended to continue integrating mnemonic techniques into the teaching curriculum, as they have shown to enhance students' learning outcomes. Provide teachers with training and resources on effective mnemonic strategies and encourage their consistent implementation in the classroom.

**Targeted Remedial Support:** Considering the below-average mean score in the pre-test, it is important to provide targeted remedial support to students who are struggling in Araling Panlipunan 9. Identify specific areas of weakness through ongoing formative assessments and offer additional resources, such as remedial classes, one-on-one tutoring, or study materials, to help students improve their understanding of the subject. Personalized interventions will enable students to catch up with their peers and meet the expected level of performance.

**Encourage Active Student Engagement:** To further enhance students' learning outcomes in Araling Panlipunan 9, promote active student

engagement in the learning process. Encourage students to participate in discussions, ask questions, and engage in hands-on activities that foster critical thinking and problem-solving skills. Incorporate group work, project-based learning, and real-world applications of the subject matter to make the learning experience more meaningful and interactive.

Implementing these recommendations will contribute to improving students' performance, fostering a positive learning environment, and enhancing their understanding of Araling Panlipunan 9. By continuing to integrate mnemonic techniques, providing targeted remedial support, and encouraging active student engagement, educators can empower students to achieve better learning outcomes and excel in their written assessments.

## CONSENT

Certain ethical guidelines were strictly followed in collecting the data necessary for the study. Prior to data collection, the researchers obtained an informed consent from the School Principal, Cooperating Teacher, and the respondents themselves, respectively.

The researchers provided a complete disclosure of all relevant information about the research in the form of written document and explained its contents to the respondents as necessary to enable them to make an informed decision prior to their participation in the study.

Respondents were provided sufficient time to complete the assessment instrument. Additionally, time-on-task and non-disruption of classes policies was observed during the course of the study.

## ACKNOWLEDGEMENTS

Deepest gratitude is extended to the respondents of this study, faculty administration and Grade 9 Silver students at the participating National High School, for sharing their time and extending their cooperation, most especially in the interviews. The researchers also thank Raymond Garcia, Melanie Vidad, and Christopher Taguiam for their valuable advice on the improvement of the research. The researchers also thank their Parents for their support. The researchers' thanks God for guiding him for this research.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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