

# Blackboard System and Students' Academic Performance: An Experimental Study in The Philippines

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## Abstract

**Purpose:** The main purpose of this study is to determine the Blackboard System's effectiveness on students' academic performance in *Araling Panlipunan*.

**Research methodology:** The study employed a quasi-experimental pre-test and post-test non-equivalent group design and was entirely quantitative. Seventy (70) Ligaya High School students in Grade 7 who were divided into the control and experimental groups made up the study's subjects. Both groups received instruction on related subjects throughout the first quarter of the *Araling Panlipunan* grading period. The t-test for dependent and independent samples was the statistical tool employed to evaluate the hypothesis.

**Results:** Results indicate that using the Blackboard System to teach *Araling Panlipunan* is a more effective approach than using the traditional lecture technique. Further, it has a significant impact on students and learning processes. Teachers also gained great benefits in using this system since it provided them an easy way of tracking student progress reducing a lot of paperwork load.

**Limitations:** This study was limited to only Grade 7 *Araling Panlipunan* learners in the school year 2019-2020. The duration of the experiment was only focused on the First Quarter grading period.

**Contribution:** One of the key goals of the study is to raise the standard of education by using new technological trends, which will assist them to advance their skills and competencies in technology. Teachers will also benefit from the study to help them improve their craft with the use of effective pedagogy with ICT to cope with the changing world.

**Keywords:** Blackboard System, Academic Performance, Araling Panlipunan

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## 1. Introduction

Modern technology now permeates every aspect of life, thus it is essential for teachers of learners to be proficient in 21st-century skills to stay up with the speed of change. In 21st-century skills, technology is infused into education as a tool to help not only the teachers but most importantly in enhancing students learning. ICT integration can actively build new knowledge for learners as they interact with the environment; this is a student-centered approach where students "co-create" their learning experience. The successful integration of modern technology into the educational enterprise promotes meaningful and productive learning (Stern, 2005). This approach enables students to become active rather than passive recipients who absorb information and reproduce it through standardized tests.

E-learning, commonly referred to as web-based learning, is the flexible and convenient delivery of education using the Internet in support of individual learning or corporate performance goals ([Clark & Mayer, 2016](#)). Thus, using an online instruction system reinforces students' meaningful learning experiences. It's critical to comprehend how technologies are applied and how their effects on people are felt given the technology industry's explosive expansion. The online technology utilized for education, such as the "Blackboard System," can provide a virtual dimension to conventional campus-based learning in addition to offering resources for distance learners ([Coates, 2007](#)) further making "hybrid or combined programs" which incorporate both face-to-face and online mechanisms, possible ([Malikowski, Thompson, and Theis, 2007](#)). Therefore, it would give its user-students both classroom and online learning opportunities.

Therefore, the study determined the effect of the Blackboard System on *Araling Panlipunan* students' academic performance. Therefore, this paper looked into how effective is the integration of technology or e-learning in the academic performance of students. As such, the study will employ two groups one will be taught using the traditional lecture method and the other one with the use of the Blackboard system in delivering instruction for the entire duration of the first grading quarter period in the school year 2019-2020.

### **1.1 Research questions**

The study sought to find out the effectiveness of the Blackboard System on the academic performance of students in *Araling Panlipunan*. Specifically, it answered the following questions:

1. What is the level of learners' academic performance in *Araling Panlipunan* before and after the study?
2. Is there a significant difference in the pre-test mean scores of the experimental group and control group?
3. Is there a significant difference in the post-test mean scores of the experimental and control group?
4. Is there a significant difference in the pre-test mean scores and post-test mean scores of the control group?
5. Is there a significant difference in the pre-test mean score and post-test mean scores of the experimental group?
6. Is there a significant difference in the mean gain scores of the experimental group and control group?

### **1.2 Objectives of the Study**

The study aimed to find out the effectiveness of the Blackboard System on the academic performance of *Araling Panlipunan* learners. Specifically, the study intended to:

1. Investigate the effectiveness of the Blackboard system in enhancing *Araling Panlipunan* students' academic performance; and
2. Investigate the effectiveness of e-learning in comparison to the traditional method of teaching.

### **1.3 Research hypotheses**

The following null hypotheses were tested at the 0.05 level of significance.

1. There is no significant difference in the mean pre-test scores of the experimental group and the control group in *Araling Panlipunan*.
2. There is no significant difference in the pre-test and post-test of the experimental group.
3. There is no significant difference in the pre-test and post-test of the control group.
4. There is no significant difference in the mean gain scores in *Araling Panlipunan* between the experimental group and the control group.

## **2. Literature Review**

### **2.1 Blackboard System**

The Blackboard system is a web-based program that has an open architecture that can be modified for course administration and allows for the creation of student information systems and verification

procedures. The major goal is to create online courses with little to no face-to-face interaction and to include online components into face-to-face courses that are now offered traditionally.

In the Blackboard Learning System, users have access to a platform for exchanging content and conversations ([Almarashdeh, et al., 2010](#)). The blackboard system improves communication since announcements may be given as pop-up messages or through announcements that are available on the system, and the instructor can read stuff to students. Teachers and students can start discussions and give comments using the discussion features. The Blackboard system's chat component enables discussion and idea sharing among students. Last but not least, Blackboard postings let professors and students communicate individually or in groups. The learning module's functionality enables teachers to provide a variety of classes for students as well as to send and accept assignments via the assessment sheet. Finally, the media library function may be used to store videos and other types of files.

To handle courses and instructional content, third-generation technology was used to construct the learning management system known as Blackboard. The board provides effective and user-friendly mechanisms for teaching, communicating, and evaluating. The primary academic application utilized in the course management system for online and in-person teaching support is called Blackboard Learn ([Douglas, 2014](#)). Compared to traditional face-to-face or printed material contexts, the online environment, such as Blackboard Learning, can offer a distinct sort of learning experience ([Heirdsfield, et al., 2011](#)). A learning management system called Blackboard allows a teacher to deliver information, administer tests, keep track of student involvement, and analyze student achievement. Students may also have access to interactive features like conversations, emails, and discussion forums through the learning management system.

A learning management system may provide materials for students as well as provide the traditional classroom-based study with a virtual dimension ([Coates, 2007](#)). It can also promote blended instruction and learning by combining elements of online and classroom learning ([Malikowski, Thompson, and Theis, 2007](#)). The use of Blackboard Learning can alter how teachers present classes and lessons to students as well ([DeNeui & Dodge, 2006](#)). Academics or instructors create the necessary material, gather resources, separate the knowledge into modules or activities, and add it to the system for students under the blackboard ([Norton & Hathaway, 2008](#)). Students may freely voice their opinions and ask questions on the blackboard, and they can access online course materials whenever they choose ([Bouhnik & Marcus, 2006](#)). The benefit of the blackboard system is that students may use it whenever it is convenient for them as long as they have internet connectivity ([Capper, 2001](#)). Since each student has a personal account on the blackboard and may access it like asynchronous interaction, there is no need for them to come together when using it. Students engage in similar activities with a teacher and other students, even if not simultaneously. They show up for class when necessary or when all of the required reading is done. This tactic offers support and input from the instructor and other students. In general, it is not taught independently by self-study. Additionally, it gives the responses time to be evaluated, which enhances critical thinking abilities ([McCombs, 2011](#)). Students can benefit from this in terms of further inquiry into an argument as well as assistance and encouragement.

General details on the system are provided on the board's home page. It has elements like course content, resources, announcements, assignments, a calendar, an assessment form, and other course-related data. Blackboard's ability to deliver teaching resources in the form of PowerPoint slideshows, Microsoft Word papers, PDF files, and Acrobat video files enables students to study from anywhere at any time as long as there is an internet connection. As a helpful tool for professors and students alike, the system also contains textbook material, assessment, multimedia content, sophisticated survey and test tools, Excel compatibility, simple document interchange, and a forum. Students can express any queries regarding the subject, from inquiries about work to issues with the website, while instructors can give resources and directions on how to prepare for the next session ([Liaw, Huang, and Chen, 2007](#)).

Additionally, the blackboard system's engagement may be shorter and the discussion can be recorded for later review. It also features group collaboration and electronic messaging, opening up new possibilities for group collaboration, shared chats, and electronic debates ([Capper, 2001](#)). Additionally, this system gives students a framework for peer and instructor interaction and simple access to modules, grades, announcements, and even assignments whenever and wherever they are needed ([Iskander, 2008](#)). Blackboard also provides administration tools for teachers to grade assignments, oversee student activity, and measure academic achievement ([El-Masri & Tarhini, 2017](#)). Similarly, it offers instructional resources to supplement the course material, including a lexicon, references, a self-assessment module, and quizzes. Assignments and other materials can also be written by students and passed around the class. Finally, using Blackboard has advantages for both academic staff and students. Increased accessibility, prompt response, improved bidirectional interactions, monitoring, and the development of skills like planning, time management, and communication are all potential advantages ([Bradford et al., 2007](#)). Users may access Blackboard over the Internet at any time and from any location ([DeNeui & Dodge, 2006](#)), allowing students to see and download course materials as well as other information and submit online assignments as soon as they are finished.

Also, since "there is a desire to promote learning and perhaps use cooperative/collaborative learning strategies online learning assessments that provide timely feedback to students and instructors in the same way," the blackboard has evolved into a "glorified toolkit to meet the demands at the teaching level" ([Quarless, 2007](#)). Implementation of online teaching tools in mixed-mode learning environments where there is an increase in students' learning abilities had to combine traditional teaching in the classroom with online teaching ([Wheeler & Jarboe, 2001](#)) further, the greater use of technological tools in the motivation of the classroom. Understanding the blackboard helps management assign personnel release time because the time available to staff and the needs of students sometimes limit the instructor's desire to develop and test the characteristics of the new teaching tools ([Sauers & Walker, 2004](#)). The system can also be referred to as a collection of tools and frameworks that make it simple to create web content while conducting learning ([Adzharuddin & Ling, 2013](#)), which is an improvement over traditional learning. This device is special because it can be used to plan, transmit, and manage learning ([Almrashdah, et al., 2010](#)). Thus, combining several activities which include delivery, exams, quizzes, assignment, and virtual classes makes it uniquely fit for every student since today's generation is more inclined toward technology. As such, significant relation between learning interest and students' achievement is evident ([Aras, et al., 2021](#)).

It should be noted that this new management system controls user login, organizes course catalogs, keeps track of student information, and generates reports for administration ([Paulsen, 2003](#)). As a result of incorporating all these factors, it is an essential instrument in the management of educational institutions. As a result, this technique is highly beneficial for improving student academic performance as well as for making instructors' jobs a little bit simpler because it involves less work and saves time than what the teacher would have missed if the entire educational process remained the same. The system's main components are discussion boards, video conferences, and conversations with conversations. Additionally, these qualities make it possible for participatory learning.

The system is also an essential platform for teachers and students to communicate and exchange educational resources at the same time ([Adzharuddin & Ling, 2013](#)) and where they can access information from the internet ([Rafid & Khotimah, 2021](#)). As a result, an e-learning management system may be viewed as a cutting-edge internet-based technology solution for teachers and students as it enables the communication between the two parties through interactive elements like forums, file-sharing websites, and discussion threads vis-a-vis developing their problem-solving, informational, reasoning, creativity, and communication skills, as well as, other higher-order thinking skills ([Jan and Khattak, 2015](#)).

As an overview, the literature offers the advantages of investing in online learning, which are developed as improved access, higher learning quality, better-preparing students for a knowledge-based society, chances for lifelong learning, and student preparedness. To meet the growing demand

for flexible learning, consider offering service providers electronic means to deliver courses. You'll find that students appreciate having the freedom to select from a variety of learning opportunities and can thus select the one that best suits their learning preferences. Another benefit of flexibility is that students find working in groups to be simpler because they are not constrained by the fixed timetable that in-person programs often offer. Similar to the flexibility issue, practicality is a strength of online learning, and the incorporation of communication and information into the classroom enables students to engage in meaningful learning.

## 2.2 Locale of the Study

The experiment was conducted at Ligaya High School one of the public secondary schools in Buayan District in the division of General Santos City. For a clearer view of the locale of the study, the location map of the aforementioned school is presented in Figure 1.

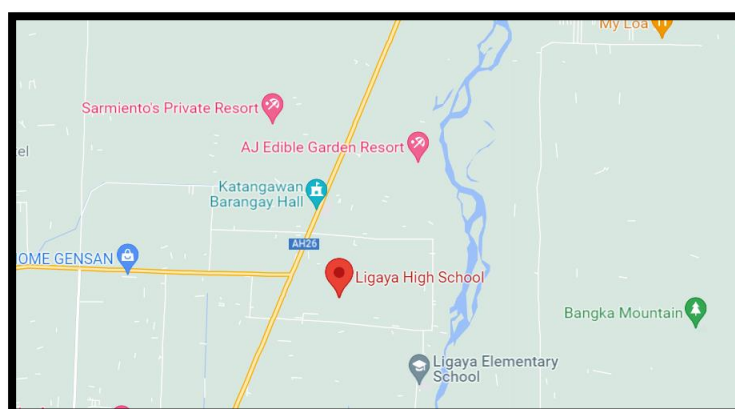


Figure 1. Location Map of Ligaya High School in the Division of General Santos City

## 3. Research Methodology

The effectiveness of the Blackboard System on the academic achievement of Grade 7 students in *Araling Panlipunan* was examined using a quasi-experimental pretest and post-test non-equivalent research design. In a quasi-non-equivalent study design, participants in one group received treatment while those in the non-equivalent group were not. The two groups were subsequently compared.

This design of the study is shown in the diagram below:

|                    |     |    |   |    |
|--------------------|-----|----|---|----|
| Control Group      | G1: | P1 | A | P2 |
| Experimental Group | G2: | P3 | B | P4 |

Where:

- P1 pertains to the control group's pre-test scores
- P2 pertains to the control group posttest scores
- P3 pertains to the experimental group's pre-test scores
- P4 pertains to the experimental group posttest scores
- A pertains to the use of the Traditional Method in the Control Group
- B pertains to the use of the Blackboard System in instruction in the experimental group
- G1 refers to the control group
- G2 refers to the experimental group

The experimental group consisted of thirty-five (35) learners and was taught at least once a week for three hours to cope with the allotted number of hours needed per week for the *Araling Panlipunan* subject. The schedule was based on the consensus of the 35 learners used in the conduct of the experiment, the ratio of 1:1 (1 student in 1 computer) was observed with a 50mbps internet connection.

The pre-test was administered before the experiment. The pre-test was adopted and modified from the Department of Education learner's module pre-test in *Araling Panlipunan* with a corresponding Table of Specification. Only sixty (60) minutes were allotted for the test which covered the competencies needed for the entire first (1st) grading quarter set by the Department of Education for Grade 7 learners in *Araling Panlipunan*.

Before the conduct of the experiment, learners were informed as well as underwent short training on the functioning and operation of the e-learning using the Blackboard system. The control group consisted of thirty-five (35) learners and were taught in a regular class schedule using the traditional method of teaching which is primarily the lecture, chalk, and chalkboard method. *Araling Panlipunan* subjects have an allotted three (3) hours of teaching per week regardless of the scheduled day and time set by the school academic coordinator as indicated by DepEd Order 25 Series of 2019-2020.

The pre-test was the same as that of the experimental group and was conducted before the experiment. The test was adopted and modified from the Department of Education learner's module in *Araling Panlipunan* with a corresponding Table of Specification. The duration of the test was sixty (60) minutes only and covers the competencies needed for the entire first (1st) grading quarter set by the Department of Education for Grade 7 learners in *Araling Panlipunan*.

The researcher himself was the one who taught the learners in both groups to eliminate the teacher-factor effect. The study was conducted for 30 school days within the span of the first grading quarter period based on the curriculum guidelines set by the Department of Education as to the number of teaching hours in every quarter. The posttest was administered after covering all the topics included in the study. Paper and pencil tests were used both for the pre-test and the post-test.

### **3.1 Respondents of the study**

Seventy (70) Grade 7 students from the two sections of Ligaya High School participated in the study during the 2019–2020 school year. The control group and the experimental group were the two groups utilized in the study.

### **3.2 Sampling technique**

A random sample technique was applied in the experiment. To ensure that both groups had an equal chance of being chosen, the learners who would make up the experimental and control groups were chosen by tossing a coin while the two sections were gathered. The experimental group was the head of the coin, and the control group was the tail.

### **3.3 Research instrument**

Pre-test and Post-test were the instruments used in the study that was adopted and modified from the Department of Education learner's module in *Araling Panlipunan* (2014). Both tests consisted of 50 multiple-choice items. The items included were based on the Department of Education set competencies for Grade 7 learners in *Araling Panlipunan*. To check the appropriateness of the instrument, it was based on the DepEd Order No. 79, s. 2003 table of specifications.

### **3.4 Data gathering procedure**

To obtain the necessary data, a letter of permission to conduct the study was sent to the principal of Ligaya High School. After receiving permission, the researcher began the experiment by starting the pre-test for each group independently. The test papers in each group were corrected and the data obtained were recorded for analysis.

The researcher taught the topics to the two groups for almost two months using the Blackboard System in the experimental group and the traditional lecture method in the control group. Before the end of the first quarter, after all the topics had been taught and discussed, a post-test with the same subject matter, content, and several questions as the pre-test was given.

### 3.5 Statistical treatment

A t-test for independent samples was performed to assess whether there were any significant differences between the post-test scores of the experiment and the control group.

A t-test for independent samples was used to assess the differences between the experimental group's pre-test and post-test scores that were statistically significant.

A t-test for independent samples was performed to evaluate if there was a significant difference between the pre-test and post-test of the control group.

Whether or not a significant difference between the mean gain scores of the experimental and control group, a t-test for independent samples was also used. The significance level for each test was set at 0.05.

## 4. Results and Discussions

### *Research Question 1: What is the level of learners' academic performance in Araling Panlipunan before and after the study?*

The study determined the level of performance of learners in *Araling Panlipunan* before and after the experiment to determine the initial knowledge of the learners in the said subject area. As such, a 50-item pre-test was given to the learners

Table 1 shows that the majority of students 54.2% in the control group and 45.7% in the experimental group only received pre-test scores between 21 and 30. At the beginning of the research, their performance in *Araling Panlipunan* is rated as Fair. The entire pre-test means the score of the students in the experimental group and control group is 21.93, further demonstrating that the student's performance in *Araling Panlipunan* is Fair.

Table 1. Level of Students' Performance in *Araling Panlipunan* Before and After the Study

| Learners' Performance (Scores) | Description | Control Group       |              |                     |              | Experimental Group  |              |                     |              |
|--------------------------------|-------------|---------------------|--------------|---------------------|--------------|---------------------|--------------|---------------------|--------------|
|                                |             | Pre-test            |              | Posttest            |              | Pre-test            |              | Posttest            |              |
|                                |             | f                   | %            | f                   | %            | f                   | %            | f                   | %            |
| 41-50                          | Very Good   | 0                   | 0%           | 0                   | 0%           | 0                   | 0%           | 0                   | 0%           |
| 31-40                          | Good        | 1                   | 2.9%         | 8                   | 22.9%        | 3                   | 8.6%         | 16                  | 45.7%        |
| <b>21-30</b>                   | <b>Fair</b> | <b>19</b>           | <b>54.2%</b> | <b>25</b>           | <b>71.4%</b> | <b>16</b>           | <b>45.7%</b> | <b>19</b>           | <b>54.3%</b> |
| 11-20                          | Poor        | 15                  | 42.9%        | 2                   | 5.7%         | 16                  | 45.7%        | 0                   | 0%           |
| 0-10                           | Very Poor   | 0                   | 0%           | 0                   | 0%           | 0                   | 0%           | 0                   | 0%           |
| <b>Over-all Mean Scores</b>    |             | <b>22.09 (Fair)</b> |              | <b>26.94 (Fair)</b> |              | <b>21.77 (Fair)</b> |              | <b>30.17 (Fair)</b> |              |

Table 1 also shows the performance of learners in *Araling Panlipunan* after the conduct of the study which indicates that learners' performance in both groups is Fair with scores ranging from 21 to 30 with an overall mean of 28.56, this yields a mean difference of 6.63. This indicates further that learner's performance before and after the conduct of the study got fair performance but have a noticeable increase in percentage in the number of learners who got fair and good performance description and decreasing number of learners who a got a rating of poor from the combined percentage of both groups which is 44.3% before the start of the experiment to 2.9% on the end of the investigation. Elaborately, the control group got a mean difference of 4.85, on the other hand, the experimental group yields a mean difference of 8.4. The findings indicate that after the study was conducted, the experimental group's learners performed 73.20% better than the control group.

### *Research Question 2: Is there a significant difference in the pre-test mean scores of the experimental group and control group?*

This study also compared the pre-test scores of the experimental group with the control group. In

*Araling Panlipunan*, the control group of 35 Grade 7 students received a pre-test mean score of 22.09 out of a possible 50 perfect scores. On the same test, the experimental group, in contrast, scored 21.77 on the pre-test. The p-value is 0.816 and the t-value is 0.234 when using the t-test. There is no difference between the two groups' pre-test mean scores because  $p > .05$ .

Table 2. The Difference in the Pre-test Scores of the Experimental Group and the Control Group

| Group              | Pre-test Mean Scores | T- value | P- value | Remarks                          |
|--------------------|----------------------|----------|----------|----------------------------------|
| Control Group      | 22.09                | 0.234    | 0.816    | <b>No Significant Difference</b> |
| Experimental Group | 21.77                |          |          |                                  |

The outcome suggests that the null hypothesis, which states that the learners in the control group and the experimental group performed at the same level in *Araling Panlipunan* at the beginning of the study, is accepted. As a result, there was no bias involved in dividing the students into two groups, and the experiment can proceed as long as the two groups are equivalent in their initial performance in *Araling Panlipunan*.

**Research Question 3: Is there a significant difference in the post-test mean scores of the experimental and control group?**

As revealed in Table 3, this explains that the experimental group who were exposed to treatment using a Blackboard System had greater improvement based on their academic performance in *Araling Panlipunan*. The null hypothesis was rejected since the experimental group's higher post-test mean gain score of 30.17 showed that learners in this group performed better in the topic when they were taught utilizing the blackboard system style of instruction.

Table 3. The Difference in the Posttest Mean Scores of the Control Group and the Experimental Group

| Group              | Pre-test Mean Scores | T- value | P- value | Remarks                            |
|--------------------|----------------------|----------|----------|------------------------------------|
| Control Group      | 26.94                | 3.20     | 0.002    | <b>With Significant Difference</b> |
| Experimental Group | 30.17                |          |          |                                    |

**Research Question 4: Is there a significant difference in the control group's pre-test and post-test mean scores?**

The traditional method of instruction was used to teach the thirty-five (35) students who made up the control group. A t-test for dependent samples was used to compare the pretest and post-test results of the students in *Araling Panlipunan* to see if there was a statistically significant difference in their performance utilizing the conventional method of teaching. Table 4 displays the outcomes.

Table 4. The Difference in the Posttest Mean Scores of the Control Group and the Experimental Group

| Group              | Pre-test Mean Scores | T- value | P- value | Remarks                            |
|--------------------|----------------------|----------|----------|------------------------------------|
| Control Group      | 22.09                | 6.60     | 0.000    | <b>With Significant Difference</b> |
| Experimental Group | 26.94                |          |          |                                    |

The pre-test means score for the control group was 22.09 at the beginning of the trial. The group received a post-test mean score of 26.94, which was higher than the pre-test means score, after learning the first quarter's content of *Araling Panlipunan*. The t-value and p-value for the t-test are

6.60 and 0.000, respectively. Since  $p < .05$  indicates that there is a significant difference between the control group's pre-test and post-test mean scores, the null hypothesis is then rejected. This further suggests that when the teacher followed the traditional method of instruction, there was a notable improvement in the learners' level of learning in the control group in *Araling Panlipunan*.

Thus, when the teacher teaches using traditional pedagogy, like chalk, chalkboard, or traditional lecture method in delivering the lessons during the learning process and/or discussion, learners can easily comprehend even the difficult topics in *Araling Panlipunan* Grade 7. Therefore, it demonstrates that students learn the subject content significantly with the use of traditional teaching.

**Research Question 5: Is there a significant difference in the pre-test mean score and post-test mean scores of the experimental group?**

The experimental group was taught using Blackboard System in enhancing their performance or learnings in *Araling Panlipunan*. A t-test for dependent samples was used to compare the learners' pre-test and post-test results to ascertain whether this Blackboard System is a successful teaching approach. Table 5 displays the outcomes.

Table 5. The Difference in the Pre-test and Posttest Mean Scores of the Experimental Group

| Experimental Group | Mean  | T- value | P- value | Remarks                            |
|--------------------|-------|----------|----------|------------------------------------|
| Pre-test           | 21.77 | 6.582    | 0.000    | <b>With Significant Difference</b> |
| Posttest           | 30.17 |          |          |                                    |

The pre-test means score for the experimental group was 21.77. The experimental group had a post-test mean score of 19.04, which is considerably higher than the pre-test means score, after 30 days of teaching *Araling Panlipunan* utilizing the Blackboard System as a pedagogical technique. Using the t-test to compare the pre-test and post-test mean scores, the t-value is 6.582, and the p-value is 0.000. The difference between the pre-test and the post-test is significant since  $p < .05$ . This indicates that the Grade 7 *Araling Panlipunan* students' performance increased as a result of their teaching utilizing the Blackboard system.

**Research Question 6: Is there a significant difference in the mean gain scores of the experimental group and control group??**

According to Table 6 below, students in the experimental group who were taught *Araling Panlipunan* using the Blackboard system performed better than those in the control group who only utilized the traditional lecture method. Both approaches contain beneficial elements that make the most of teaching, however, the experimental group's higher mean gain score revealed that Grade 7 students performed better in the indicated subject area when e-technology was incorporated into their subjects and/or lessons utilizing the Blackboard system.

Table 6. The Difference in the Mean Gain Scores of the Control and Experimental Group

| Group              | Mean Gain | T- value | P- value | Remarks                            |
|--------------------|-----------|----------|----------|------------------------------------|
| Control Group      | 4.86      | 2.40     | 0.019    | <b>With Significant Difference</b> |
| Experimental Group | 8.40      |          |          |                                    |

The study's findings suggest that e-technology, such as the Blackboard system, used in teaching pedagogy is backed by literature and studies and can offer a more meaningful learning experience than traditional face-to-face or lecture approaches and pedagogy ([Heirdsfield, et al., 2011](#)) and providing an opportunity for students to learn new technology and adapt to new systems ([Khan &](#)

[Hossain, 2021](#)). Thus, the use of the Blackboard System helps learners to gain experience in understanding and mastery of knowledge and skills in a specific domain.

It proves that based on previous research, the use and integration of ICT, e.g. Blackboard System, enhanced the learning process and maximizes the students' abilities of inactive learning ([Ghavifekr & Rosdy, 2015](#); [Finger & Trinidad, 2002](#)) and students are committed to attending and learning in the e-technology platform and adhering to the course syllabus ([Nasir & Neger 2022](#)).

### **Summary of findings**

This study arrived at the following findings:

1. After the study was conducted, it was discovered that students at *Araling Panlipunan* performed Fairly in both the control and experimental groups.
2. There is no difference between the control and experimental groups' pre-test mean scores (t-value is 0.234; p-value is 0.816).
3. There is a significant difference between the experimental and control groups' post-test mean scores (t-value= 3.20; p-value= 0.002).
4. Since, the p-value is less than 0.05 indicates that there is a significant difference between the mean pre-test and post-test scores of the control group (t-value of 6.60, p-value of 0.000).
5. The experimental group's pre- and post-test mean scores differ significantly when compared using the t-test; the obtained t-value is 6.582, and the p-value is 0.000.

Finally, it is shown that the experimental group, which was taught *Araling Panlipunan* using the Blackboard system, improved more in their performance than the control group, which only utilized the traditional lecture method.

## **5. Conclusion**

This study aims to investigate the effectiveness of the Blackboard system in enhancing students in *Araling Panlipunan's* academic performance. The result of the study shows that students who are exposed to treatment using the Blackboard system have significantly increased learning gains as this approach creates and allows opportunities for learners to develop their problem-solving, informational, reasoning, creativity, and communication skills, as well as, other higher-order thinking skills.

Also, the study looked into the effectiveness of e-learning in comparison to the traditional method of teaching. As shown in the result of the research endeavor demonstrated that the experimental group, which received instruction in *Araling Panlipunan* using e-learning improved more than the control group, which received instruction simply using the conventional lecture approach. As such, the findings led to the conclusion that technology-based teaching like the use Blackboard System in teaching *Araling Panlipunan* as a strategy is more effective compared to the traditional lecture method which provides a range of powerful tools that can help transform traditional lecture and text-based classes into interactive and student-rich learning environments vis-à-vis learners assume responsibilities when they use the blackboard system in organizing their work, assignments, and or projects. As a result, it has a significant impact on students' learning processes and academic performance.

### **5.1 Limitation**

This study aims to find out the effectiveness of the Blackboard System on the academic performance of *Araling Panlipunan* learners. However, the study has limitations since it was only limited to only Grade 7 *Araling Panlipunan* learners in the school year 2019-2020. Also, the duration of the experiment was only limited to the First Quarter grading period.

### **5.2 Suggestions**

The following is strongly suggested based on the study's findings and conclusion. First, the use of the Blackboard System and other e-technology as methods of teaching and instruction proved to be effective, as such it is highly recommended to be adopted by all teachers not just in teaching *Araling*

*Panlipunan* but all teachers regardless of the subject taught. Secondly, the effectiveness of the use of the Blackboard System in elevating learner performance should be shared by all teachers so they can apply as well in their teaching as part of their instruction and pedagogy, this is also cognizant of the Department of Education's Technology Enhanced Learning Approach (TELA) program in capacitating teacher's skills in ICT. The best venue for knowledge dissemination on Blackboard System may be during Learning Action Cell (LAC) Session or INSET (in-service education and training) activities and workshops in school.

Additionally, the school, in particular the school head, shall offer programs, assistance, and training to help teachers improve their computer and/or ICT literacy skills. This training that every school should provide must be continuous so teachers may update whatever skills they possess in ICT, especially with the latest trend in information technology suitable for integration into the classroom setting. Finally, further study on web-based learning like Blackboard System and its effect on student's performance in other subjects such as English, Mathematics, *Filipino*, and Science with longer exposure of the experimental group to treatment at least two (2) grading periods to better examine their effectiveness.

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