

# Teachers' Innovation on Reflective and Integrative (RAI) Video Lessons in Enhancing the Academic Performance of Grade 2 Learners in Araling Panlipunan

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## ABSTRACT

This research used a quasi-experimental research design during COVID-19 distance education. It utilized a comparison and experimental group of learners at Parian Elementary School, Schools Division of Calamba City. Based on the results of the study, there is evidence to support that the experimental group performed better than the comparison group in the formative test. Likewise, the result of the Independent Samples t-test result reveals a significant difference between the Posttest Mean Scores of the Comparison and Experimental groups. Hence, the hypothesis, which states no significant difference, is rejected. Further, there is an improvement in the score of the comparison group from the pretest to posttest. However, a great improvement in the mean score of the experimental group. In conclusion, the Reflective and Integrative (RAI) video lessons successfully enhance the academic performance of Grade 2 Araling Panlipunan learners. The study recommends that Education Officials and School Administrators are encouraged to support the teachers in implementing technological pedagogical innovations in delivering 21st-century quality education. They are also encouraged to conduct seminars and workshops on technological pedagogical innovation in the new normal education. Future researchers may identify and test other factors or variables that can further define the effectiveness of the RAI video lesson. Similar study may be conducted to explore the variables not included in this study, such as classroom.

**Keywords** — Education, pedagogical strategy, video lesson, reflective and integrative, quasi-experimental design, Philippines

## INTRODUCTION

Video-based learning among learners gains more popularity as a fun and engaging technique that engages both visual and auditory cognitive senses. It catches the attention of students with their topic descriptions and oral content. Knowledge or skills acquired in this way will last longer. Video-based training has proven very effective by providing a complete model training package covering the four key factors of learning motivation: focus, relevance, confidence, and satisfaction (Next Thought Studios, 2022).

Educational institutions are being urged to incorporate these trends into their formal teaching or learning techniques of the numerous advantages of

video-based learning (Escalaw, 2021). Students have the chance to learn a subject in the most effective way and at a time that works for them using video-based instruction. Video tutorials are most effective in COVID-19 education when combined with need-based learning interventions, which let students learn when and where they want to. Modern individuals who dislike boring classroom instruction can learn with the help of professionals' interesting explanations and engaging information. Video teaching is ideally suited for multimodal approaches that enable learners to engage, learn, and retain better at all levels, including moving course structures and various image environments such as static, text, animation, sound, and audio.

Teachers use videos in their seminars, training sessions, and particularly while instructing learners or pupils. One advantage of teacher-produced films is that they assist students in their aural and visual nature, which draws large audiences and enables each user to regulate communication. A lot of research on instructional videos is based on theories of educational design, including the cognitive theory of multimedia learning, as a foundation for design issues (Fiorella & Mayer, 2018).

As a result, the use of video technology and video pedagogy and its importance have been celebrated in various fields of study (Moffitt & Bligh, 2021; Lee & Chang, 2020; El-Ariss et al., 2021; Umutlu & Akpınar 2020; Nomura et al., 2021; Scagnoli et al., 2017; Tseng, 2021; Riordan et al., 2021; Mutanda et al., 2023; Almuslamani et al., 2020). Because of the importance and positive effects of video pedagogy and integrated and reflective approach in education, the researcher proposed Reflective and Integrative (RAI) video lessons, as one of the pieces of evidence shows that education must continue despite difficulties and obstacles. It also demonstrates that teachers are flexible, adaptive, creative, and innovative in all situations (Escalaw, 2022).

The "Enhanced Basic Education Act of 2013" established a learner-centered curriculum that would develop students' mastery of knowledge and skills. Teachers can use three general setups in a student-centered learning process. The first is the popular individual-centered approach, which incentivizes the best or the top students through competition. Second is collaborative learning, where learners can cooperate and work as a team to achieve collective success in class. The third is a personalized-centered approach, focusing mainly on the learner without consideration for competing with his or her peers, just aiming the goal of mastering the competencies.

Republic Act 11469, known as “Bayanihan to Heal as One Act,” is a law that declares a national emergency directly or caused by the coronavirus disease 2019 (COVID-19) situation. With respect to Republic Act 11480, this Act amends Section 3 Republic Act No. 7797, which extended the school day from two hundred days to two hundred and twenty days of lessons. The President approved the opening of schools on October 5, 2020. One of the concerns of our department is the teaching and learning process in special learning modalities that will meet the needs of students. The press release of Secretary Leonor Briones was that education would continue amidst the challenges caused by the pandemic.

Alternative modes of delivery of learning modalities such as modular education, television, radio, mixed, and online will ensure that all learners or students will access quality basic education for SY 2020 - 2021. In fact, according to DepEd, most students (7.2 million) prefer modular, with a total of 3,885,427 as an alternative to learning options. However, the enrollment showed that most students had chosen to be under modular learning (Malipot, 2020).

With challenges encountered, the researcher found a solution to deliver quality learning to the learners in Grade 2 of Parian Elementary School by crafting video lessons for teaching. So, this study aimed to examine the effectiveness of the Reflective and Integrative video lesson as a way to transfer learning. This video-based lesson is one of the proofs that one needs to continue training despite challenges and disabilities. It also proves that teachers are flexible, adaptable, creative, and innovative. The researcher believes that the educational innovation called “RAI” or Reflective and Integrative video lessons, is a video educational tool that may cater to students to meaningful and enjoyable learning and may help the teachers at Parian Elementary School in Calamba, Laguna, in delivering quality education despite the pandemic.

## **FRAMEWORK**

This study takes on an experiment that will utilize the RAI video lesson and Comparison group that will be in the traditional approach of teaching and learning process applicable to the New Normal. For dependent variable includes the pretest, formative, and posttest.

This study was anchored on Multiple Intelligences Theory by Howard Gardner, which introduces eight types of intelligence: Linguistic, Logical/Mathematical, Spatial, Bodily-kinesthetic, Musical, Interpersonal, Intrapersonal, and Naturalist. According to this theory, it suggests that teachers should adopt various methods to improve their teaching effectiveness. This theory also states

that teachers should be trained to use various activities and games to improve their teaching, supposing a teacher is having difficulty reaching a student in traditional instruction. In that case, the concept of multiple intelligences suggests that they might consider other ways of teaching.

This theory is relevant to the present study since Reflective and Integrative video lessons have a variety of visual and auditory concepts that include still and moving images, actual objects, real-life scenarios, sounds, and music that Grade 2 learners can relate to and appreciate. The RAI video lessons provide relatable Araling Panlipunan lessons for the 21st Century learners and are reflective and integrative to learners' real-life experiences. These videos also consider the learners' capabilities and strengths for the learning experience to be different from the usual classroom teaching scenario.

Moreover, this study is also anchored with the *Constructivism learning theory*. It is a philosophy that improves learners' logical and conceptual growth. Jean Piaget's constructivism theory challenges the learners by making them effective critical thinkers. This theory argues that people develop meaning and knowledge by re-evaluating their experiences. This theory states that students learn best when engaged in learning experiences rather than passively receiving information. Learning aims to provide experiences that will help students construct their knowledge. Knowledge cannot be taught directly to students; it must be experienced to create new constructs or ideas.

Moreover, this theory that was mentioned was greatly relevant to the present study as the Reflective and Integrative videos involve various activities that would challenge the learners to be effective critical thinkers and develop logical and conceptual growth. Using these video-based lessons, the learners will explore more in understanding the lessons in Araling Panlipunan and become active learners through participating in the activities provided by the videos.

Let's turn to a multimodal learning specialist, Dr. Richard E. Mayer, to further understand how multimedia education might be employed in the classroom. Richard E. Mayer earned his doctorate at the University of Michigan in 1973 with a degree in psychology. From 1973 until 1975, he served as a psychology professor at Indiana University. After that, he moved to the University of California, Santa Barbara, where he continued to lecture. For her work in educational psychology, Mayer is renowned. His most significant research is on multimedia learning and problem-solving. To explain how multimedia learning functions and how we may utilize it most effectively, Mayer created the cognitive theory of multimedia learning. This idea may be used in the instruction and learning of many age groups of students.

In conclusion, the three theories of learning are paramount in this research as they all functioned to the Reflective and Integrative Video Lesson that was crafted by the researcher and a product developed to be used by learners in Grade 2 of Parian Elementary School. It is the assumption of the researcher based on the three theories that this will help enhance learners' engagement, as a result, will increase the learners' academic performance.

## **OBJECTIVES OF THE STUDY**

This study determined that the educational innovation, called "RAI" or Reflective and Integrative video lessons, was a video educational tool that benefited students in meaningful and enjoyable learning and will help the teachers at Parian Elementary School in Calamba, Laguna in delivering quality education despite the pandemic.

Specifically, the study aimed to describe: (1) the effectiveness of RAI video lessons in teaching Grade 2 Araling Panlipunan learners; (2) various ways to transfer learning; (3) that video-based lesson is one of the proof that you need to continue education despite challenges and disabilities; and (4) teachers are flexible, adaptable, creative and innovative in any situation.

## **METHODOLOGY**

### **Research Design**

This proposed study will use the quantitative type of research and will adopt the quasi-experimental research design, specifically a non-equivalent comparison group design. According to Yazon et al. (2019), quasi-experimental designs "lack randomization to experimental treatments so that comparison between treatments has to be done with groups that are not equivalent.

Experimental research design describes when certain variables are carefully controlled or manipulated. In this design, experiments are conducted to answer questions about cause and effect (Yazon et al., 2019). It requires a researcher to formulate a hypothesis first to determine what variables are to be tested, measured, and controlled. The study employed the pretest-posttest non-equivalent group design, which involves experimental and comparison groups wherein only the previous group will undergo treatment between the pretest and posttest implementation.

## Participants

The respondents of the study were the selected Grade 2 learners of Parian Elementary School coming from Grade 2 Mangga and Grade 2 Ubas, with 35 learners for each section. The students were heterogeneously grouped, and their sections were determined during enrolment. Those who were not paired became the blind participants. The pretest, formative test, and posttest will be given within the schedule, according to the initial plan to determine the effectiveness of the RAI Video Lesson.

Table 1

*Distribution of the Student Participants*

Group	No. of Students	No. of Blind Participants	No. of Actual Participants
Experimental Group	35	20	15
Comparison Group	35	20	15
Total	70	40	30

This study employed thirty (30) participants, with 15 students in each group, composed of the actual respondents of the study. Both sections taught with the same lesson and approach; however, only the experimental group utilized the RAI Video lesson as an intervention. 40 blind participants who were a part of the teaching-learning process, but their scores were considered in the data analysis of this study.

## Instrumentation

The purpose of the study was to determine the effect of the RAI Video Lesson on Grade Two (2) learners of Parian Elementary School on their Araling Panlipunan performance. The researcher utilized the following instruments:

Lesson Exemplar using the K-12 teaching approach in Araling Panlipunan will be prepared as part of the research instrument. It was based on the assigned topics for the third quarter from the Most Essential Learning Competencies of the Grade 2 Araling Panlipunan Curriculum.

The researcher also used a 30-item test for pretest and posttest on Grade 2 Araling Panlipunan topics from week 1 to week 8 which are:

Week	Topics
Week 1	Ang Maipagmamalaking Likas na Yaman ng Aming Komunidad
Week 2	Mga Kalagayan at Suliraning Pangkapaligiran sa Aming Komunidad
Week 3	Sama-sama sa Pangangalaga sa Likas na Yaman
Week 4	Kapaligiran Aking Pangalagaan
Week 5	Ang mga Namamahala sa Aming Komunidad
Week 6	Ang mga Tungkulin ng mga Namamahala sa Aming Komunidad
Week 7	Ang mga Katangian ng Mabuting Pinuno
Week 8	Ang mga Namumuno at mga Mamamayang Nag-aambag sa Kaunlaran ng Aming Komunidad

Then the Table of Specification were created and validated. The table of Specification contained the set competencies for the third quarter, the number of hours/meetings, the topic, the number of items for which competencies are to be tested, the item distribution of the said competency, and the total number of items. Each learning episode used a semi-detailed lesson plan and was accompanied by manipulative objects related to each lesson. The participants were given a formative test after each complete delivery of a topic or lesson.

### Research Procedure

To conduct this study, permission was obtained from the City Schools Division Superintendent of Calamba City and the school principal of Parian Elementary School. Upon approval, the researcher prepared the table of specification and constructed the 30-item pretest and posttest as prescribed by the Curriculum Guide in Araling Panlipunan (aligned with MELCs) for Grade 2. All the research instruments, like the pretest, posttest, formative, and the RAI video lesson, was subjected to validation by the Master Teacher, Educational Supervisor and researcher adviser, and LSPU graduate school panel of experts. Then administration of the test to the participants. After the results were collected, tallied, analyzed, and interpreted using appropriate statistical treatment, they were made the bases of the formulation of the conclusion and recommendation for the study.



## **Research Ethics Protocol**

The researcher sent permission to conduct research in the school, sent it to the school head's e-mail address and was permitted to conduct the study. Afterward, a letter to the parents was sent through FB messenger for permission for their child's participation in the research. The parents are oriented about the purpose of the study and assured them that the information collected from the participants remained confidential and used only according to the purpose, as indicated in the research.

## **Statistical Analysis**

The researcher used statistical tools such as mean, standard deviation, frequency, percent distribution, and t-test. In this study, mean and standard deviation were used to describe the Araling Panlipunan performance of the learner and solve the average scores of the participant in the pretest and posttest. A frequency count measures the number of times an event occurs, while a percentage is another way of expressing a proportion.

Moreover, the independent samples t-test was used to compare the difference between the posttest mean score and logical skills of the experimental and comparison groups. The paired samples t-test was used in determining the difference between the pretest and posttest of each group of participants. Cohen's d statistic was calculated since it is the most common way to measure the effect size. An effect size is a specific numerical nonzero value used to represent the extent to which a null hypothesis is false (Cohen, 1992). As an effect size, Cohen's d is typically used to represent the magnitude of differences between two (or more) groups on a given variable, with larger values representing a greater differentiation between the two groups on that variable. This was appropriate to use in the study since this is about the effect of visualization-based instruction on the learners' logical reasoning and Araling Panlipunan performance.

## RESULTS AND DISCUSSIONS

Table 2

*Pretest Mean Score of the Learners in the Comparison and Experimental Groups*

Group	Mean	SD	Min	Max	Verbal Interpretation
Comparison	17.73	3.71	13	25	Approaching Proficiency
Experimental	18.27	3.83	14	27	Approaching Proficiency

Table 2 reveals that the comparison group was relatively low (Mean=17.73, SD=3.71), likewise with the experimental group (Mean=18.27, SD=3.83). It can also be observed that the score range of the comparison group was Min=13; Max=25 and the experimental group Min=14; Max=27. Lastly, the verbal interpretation of the results for both groups is Approaching Proficiency.

The findings of 3.71 and 3.83 are insignificant, indicating that both classes are diverse. This means that the students have varying levels of intellect. Hence, the findings are supported by the study of Handley et al. (2018) that it is an excellent starting point because the data indicate that the two groups are nearly identical in how the scores are distributed. Likewise, this indicates that the students' groups are mixed based on their pretest results.

Table 3

*Posttest Mean Score of the Learners of the Comparison and Experimental Groups*

Group	Mean	SD	Min	Max	Verbal Interpretation
Comparison	23.27	5.05	12	29	Proficiency
Experimental	26.80	2.51	20	30	Advanced

After the implementation of the Grade 2 Araling Panlipunan Reflective and Integrative (RAI) Video Lesson in the experimental group (Grade 2 Ubas), Table 3 shows that the mean score of the experimental group is higher (Mean=26.80, SD=2.51) than the comparison group (Mean=23.27, SD=5.05). It can also be seen in Table 3 the score range of the comparison (Min=12; Max=29) and (Min=20; Max=30) of the experimental group. For the verbal interpretation of the results, the comparison group reaches the Proficiency level, while the

experimental group achieves the Advanced level. The standard deviation for the comparison group is higher than the experimental group. This result suggests that the scores of learners in the experimental group are clustered around the mean, while the scores in the comparison group indicate that scores are more scattered or spread out.

Data shows that while both groups of learners are taught using the DepEd Self-Learning Module and Weekly Home Learning Plan, the exposure of the experimental group to the Reflective and Integrative (RAI) Video Lesson increases the performance in the posttest compared to the comparison group.

Table 4  
*The Formative Mean Score of the Learners of the Comparison and Experimental Groups*

Group	Mean	SD	Min	Max	Verbal Interpretation
Comparison	32.33	4.13	27	39	Proficiency
Experimental	36.67	4.47	28	40	Advanced

n=15; Perfect Score: 40

Legend: 33-40 Advanced; 25-32 Proficiency; 17- 24 Approaching Proficiency; 9-16 Developing; 1-8 Beginning

Table 4 shows that the formative mean score of the experimental group is better ( $Mean=36.67$ ,  $SD=4.47$ ) than the comparison group ( $Mean=32.33$ ,  $SD=4.13$ ). The mean score of learners who are exposed to RAI Video Lesson (experimental group) in eight 5-item formative tests ranges from 28 to 40, one point higher compared to 27 to 39 of the comparison group. These findings give the comparison group a Proficiency verbal interpretation and Advanced for the experimental group. This suggests that the formative assessment is given during the teaching process and is considered important in the teaching and learning process to improve student learning outcomes (ElAriss et al., 2021; Kültür & Kutlu, 2021).

Table 5

*The Test of Difference on the Formative Test Mean Scores of the Comparison and Experimental Groups*

Group	Mean	SD	t-value	Df	Mean-Diff	Cohen's d	Effect Size
Comparison	32.33	4.13	-2.757*	28	-4.333	1.009	Large
Experimental	36.67	4.47					

\* Test is Significant @  $p$ -value < 0.05; Cohen's d: 0.01-0.49: Small: 0.50-0.79: Medium; 0.08 or higher: Large

The result of the Independent Samples t-Test shown in Table 5 reveals that there is a significant difference between the Formative Test Mean Score of the Comparison (Mean=32.33, SD=4.13) and Experimental group (Mean=36.67, SD=4.47) under the condition [ $t(28)=-2.757$ , Mean-Diff=-4.333,  $p$ -value<0.05]. Hence the hypothesis, which states no significant difference, is rejected.

Since the test shows a significant difference, Cohen's d is calculated to determine the Effect Size. Cohen's d is 1.009, interpreted as "Large" Effect Size, and this implies that the statistical difference between the mean score of the comparison and experimental group on their formative test is "Large". This result is supported by the study of numerous scholars such as El-Ariss et al. (2021), Umutlu and Akpinar (2020), Nomura et al. (2021), and Almuslamani et al. (2020).

Table 6

*The Test of Difference on the Posttest Mean Scores of the Comparison and Experimental Groups*

Group	Mean	SD	t-value	df	Mean-Diff	Cohen's d	Effect Size
Comparison	23.27	5.05	-2.426*	21	-3.533	0.885	Large
Experimental	26.80	2.51					

\* Test is Significant @  $p$ -value < 0.05; Cohen's d: 0.01-0.49: Small: 0.50-0.79: Medium; 0.08 or higher: Large

Table 6 shows that there is a significant difference between the Posttest Mean Scores of the Comparison (Mean=23.27, SD=5.05) and Experimental group (Mean=26.80, SD=2.51) under the condition [ $t(21)=-2.426$ , Mean-Diff=-3.533,

p-value<0.05]. Hence, the hypothesis, which states no significant difference, is rejected.

Since the test shows a significant difference, Cohen’s d is calculated to determine the Effect Size. Cohen’s d is 0.885, interpreted as a “Large” Effect Size, and this implies that the statistical difference between the mean score of the comparison and experimental group on their posttest is “Large.”

Table 7

*Test Of Difference On The Comparison Group’s Pretest and Posttest Mean Scores*

Test	Mean	SD	t-value	df	Mean-Diff	Cohen’s d	Effect Size
Pretest	17.73	3.71	-5.791 **	14	-5.533	1.250	Large
Posttest	23.27	5.05					

*\*\* Test is Significant @ p-value < 0.05; Cohen’s d: 0.01-0.49: Small: 0.50-0.79: Medium; 0.08 or higher: Large*

The result of Paired Samples t-Test reveals that there is a significant difference between the comparison group’s mean scores on the pretest (Mean=17.73, SD=3.71) and posttest (Mean=23.27, SD=5.05) under the condition [t(14)=-5.791, Mean-Diff=-5.533, p-value<0.01]. Hence, the hypothesis, which states no significant difference, was rejected.

Since the test shows significance, Cohen’s d is calculated to determine the Effect Size. Cohen’s d is 1.250, interpreted as a “Large” Effect Size, and this implies that the statistical difference between the comparison group’s mean score on their pretest and posttest is “Large”. A large effect size means that there is practical significance in the teaching and learning process of the learners in the comparison group. Therefore, it is conceivable that learners in the comparison group using the DepEd Self-Learning Module (SLM) and the Weekly Home Learning Plan (WHLP) has significant implications for the academic outcomes of the students in Grade 2 Araling Panlipunan.

Table 8

*Test of Difference on the Experimental Group's Pretest and Posttest Mean Scores*

Test	Mean	SD	t-value	df	Mean-Diff	Cohen's d	Effect Size
Pretest	18.27	3.83	-12.382	14	-8.533	2.634	Large
Posttest	26.80	2.51					

**\*\* Test is Significant @ p-value < 0.05; Cohen's d: 0.01-0.49: Small: 0.50-0.79:**

*Medium; 0.08 or higher: Large*

Table 8 shows the result of Paired Samples t-Test, revealing that there was a significant difference between the experimental group's mean scores on the pretest (Mean=18.27, SD=3.83) and posttest (Mean=26.80, SD=2.51) under the condition [ $t(14)=-12.382$ , Mean-Diff=-8.533, p-value<0.01]. Hence, the hypothesis, which states no significant difference, was rejected.

Since the test shows significance, Cohen's d is calculated to determine the Effect Size. Cohen's d is 2.634, interpreted as a "Large" Effect Size, and this implies that the statistical difference between the experimental group's mean score on their pretest and posttest is "Large". A large effect size means there is a real significance in using RAI video lessons in the teaching of Araling Panlipunan 2, which the experimental group represents.

## CONCLUSION

Evidence supports a significant difference in the formative test mean scores between the two groups. Based on the findings from the given 8 formative tests, the experimental group performs better than the comparison group. Therefore, the null hypothesis is rejected. More so, based on the analysis of the data presented, there is enough evidence of the significant difference between the posttest mean scores of the experimental and comparison group. Thus, the result suggests that the experimental group that utilize the RAI video lesson performs better than the comparison group. Hence, the null hypothesis is rejected.

Additionally, the findings suggest a significant difference in the comparison group's pretest and posttest mean scores. This also suggests that utilizing the DepEd Self-Learning Module and Weekly Home Learning Plan is effective in the new normal educational process. Therefore, the null hypothesis is rejected. Lastly, the data analysis shows a significant difference in the experimental group's pretest

and posttest mean scores. Grade 2 Araling Panlipunan learners performed well academically when exposed to Reflective and Integrative (RAI) video lessons. Therefore, RAI video lessons as a technological pedagogical innovation are effective. Thus, the null hypothesis was rejected.

## **TRANSLATIONAL RESEARCH**

The result of this study could be translated through different pedagogical approaches. It can adapt different instructional strategies like scaffolding and gamification and can be integrated to enhance student engagement, knowledge retention, and learning outcomes. It can also inform curriculum developers and educational policymakers in designing and updating curricula to include video-based lessons with interactive elements. Moreover, this may also involve designing training modules or resources that help teachers develop skills in utilizing video content, incorporating active learning strategies, and assessing learners' progress within video-based learning. Lastly, it can be translated by assessing the impact of video lessons on learners' outcomes, such as academic achievement, critical thinking, and problem-solving skills. Specifically, in conducting more studies that compare the effectiveness of video-based instruction with traditional teaching methods, as well as exploring the long-term effects of video-based learning on student performance and engagement.

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