Original Article

Utilization of Flipped Videos in Teaching Araling Panlipunan and Test Scores among Grade 7 Students

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Abstract

The present Filipino learners are digitally literate, which makes them less interested in long lectures, like the traditional approach in teaching Araling Panlipunan, resulting in cognitive overload and underachievement. This study assessed the transformative potential of the flipped classroom model, utilizing asynchronous "flipped videos" to reclaim classroom time for active, higher-order engagement. A quasi-experimental crossover design was used to verify the approach with two intact Grade 7 classes at Mambajao National High School in DepEd-Camiguin. With observance of the research protocols and appropriate statistical tools, the findings showed that, among the respondents, males have a slightly higher count, the majority of them are in families with at least two siblings, and more than half are in poor families. The findings revealed that the test scores of the participants in the treatment significantly increased by 53.92 percent in the first cycle, with a large effect size, and by 33.93 percent in the second cycle, with a moderate effect size. The data suggested that flipped videos stand as a powerful socio-economic equalizer since the test scores of the participants did not differ when grouped by sex, household size, and family monthly income. This indicates that the intervention, the flipped videos, neutralized the traditional learning barriers when grouped by explanatory variables. These significant improvements in the test scores of the participants underscored a shift in learner trajectory since students embraced the approach of “pause and replay” of the complex historical concepts. These results provide a compelling, data-driven mandate for the Department of

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Education to institutionalize blended learning strategies that foster both instructional equity and academic excellence in social studies.

Keywords: flipped videos, intervention, quasi-experimental crossover design, test scores

1. Introduction

The introduction of digital instruction is no longer a futuristic goal, but a present reality, forcing a fundamental redefinition of how we engage a generation that is natively fluent in digital environments (Bates, 2019; Prensky, 2010). Today, there is a need to transition the teaching approach from being traditional and static by changing the classrooms into active learning hubs, encouraging students' collaboration over passive listeners of the lessons. Responsive to the 21st demand, teachers of social studies are increasingly discarding the rigid boundaries of traditional instruction in favor of blended learning models that can adapt to the diverse needs of modern learners (Al-Maroof et al., 2022).

Heavy-lecture traditional approach in teaching social studies, specifically in Araling Panlipunan, has dominated in classrooms for decades. This well-intoned "sage on the stage" model triggered cognitive overload, leaving students with fragmented knowledge and poor long-term retention (Bligh, 2000; Prince, 2004). The dominance of the teachers as the only source of information has been a challenge in the Philippines, particularly in Araling Panlipunan, where the curriculum is notoriously dense, requiring Grade 7 students to navigate a complex tapestry of Philippine history, cultural nuances, and civic responsibilities. Tictic and Ducot (2025) produced evidence that this "lecture-first" approach has led to widespread disengagement among Filipino learners, who sought more than just facts, like interactive activities, visual, and rhythmic stimuli to truly process social concepts.

The flipped classroom model promises the redefinition of the teaching approach in social studies. Utilizing "flipped videos" outside the classroom and scheduled class hours is an asynchronous move to increase the engagement and exposure of the students in the lesson to be taken in class. This is a strategic approach to offset the loose precious classroom minutes, allowing teachers to shift from lecture-giving to facilitating higher-order cognitive exercises like historical debates, case studies, and collaborative problem-solving (Sams & Bergmann, 2012). This paradigm shift directly supports the United Nations' Sustainable Development Goal 4 (SDG 4), which champions inclusive and equitable quality education (UN, 2015). In the Philippine context, flipped videos offer a unique advantage for it allows students to review complex historical narratives at their own pace, effectively bridging the gap between fast and struggling learners (Bond, 2020; Shikha & Baliya, 2023).

The Department of Education (2016) has strongly advocated for experiential and learner-centered education in all public elementary and secondary schools in the country. However, this is often hindered by massive curriculum volume and severe time constraints. However, Ridha et al. (2022) disclosed that emerging studies convincingly showed the effect of the flipped approach as a scaffolding for learners to understand on their own, and substantially improve performance in history-based subjects (Tutal & Yazar, 2021). This flipped approach addresses the specific needs of the Filipino youth while promoting instructional equity. Consequently, this study seeks to investigate how the utilization of flipped videos influences the test scores of Grade 7 students in Araling Panlipunan, providing a data-driven rationale for a more inclusive and creative pedagogical shift in Philippine social studies education.

2. Methodology

2.1 Research Design

Since the participants of the study came from intact sections of a secondary school, the random sampling technique is neither practical nor ethical in this kind of school environment. The researcher has no option but to adopt the existing natural social and academic ecosystem of the classroom (Creswell & Creswell, 2018). This makes the research design a robust choice since both groups of participants are exposed to the intervention, the flipped video, and traditional modalities at different intervals. In other words, the participants both serve as the control and the recipient of the innovative intervention.

In consideration of the potential of carryover effects inherent in crossover research design, the two groups of participants were not switched outright after the first cycle. The intervention was cut and delayed for two weeks to make sure that both groups are at the same level. After this time, the switching of roles was done. The intervention was utilized by the treatment group in other learning competencies. Through this, the potential of the carryover effect is addressed, making it fair for both groups of the study.

2.2 Locale of the Study

This inquiry was conducted at Mambajao National High School (MNHS), a mega school in DepEd-Camiguin. This school offers a demographic microcosm ideal for testing pedagogical innovations. This learning institution has fertile ground for launching technology-heavy interventions like the flipped classroom, as it has already established an administrative framework and a strong commitment to academic excellence. Since the teacher-researcher came from MNHS, it follows that the inquiry has to be conducted in a place where the researcher has control over the implementation of the study. Besides, the researcher was able to select comparable sections in terms of the participants' pretest scores. Socioeconomic status, such as

household size and monthly income, was represented with sufficient depth to draw meaningful generalizations.

2.3 Participants of the Study

Two sections of Grade 7 students enrolled in the academic year 2025-2026 were purposively chosen due to their comparability in their academic performance. Section Grapes (n = 33) and section Lemon (n = 39) were used to receive the intervention using the quasi-experimental crossover research design. These intact sections were under the supervision of the teacher-researcher.

2.4 Research Instrument

Data collection was facilitated through a two-part Standardized Multiple-Choice Achievement Test in Araling Panlipunan (Department of Education [DepEd], 2024). This standardized instrument was meticulously mapped against a Table of Specifications (TOS) to ensure that the cognitive domains, ranging from basic recall to complex analysis, were balanced according to the DepEd's Most Essential Learning Competencies (MELCs). Since there were two cycles, the instrument consisted of two parallel forms, each containing 10 items. Hence, the two groups of participants experienced specific competencies for each cycle without encountering identical questions from previous tests, which prevents the occurrence of testing effect bias. Despite its being standardized, the instrument underwent rigorous evaluation by a panel of Master Teachers and a Department Head to ensure that the language and complexity were appropriate for Grade 7 cognitive levels.

2.5 Data Collection Procedure

Before the intervention, the researcher strictly adhered to the ethical standards and protocols set by the Schools Division Office (SDO) of Camiguin. The researcher secured first the approval of the Schools Division Superintendent, through the recommendation of the School Principal, to implement the inquiry. The execution has three (3) phases.

The ratings of students in the previous quarter were used as a reference for comparable sections. Two sections with similar performance were used for this inquiry. Then, a synchronized pretest was administered to both groups to capture the students' prior knowledge before any intervention was introduced. To establish a clear baseline, the participants were expected to get the maximum possible score of 10 for each test. The pretest mean scores ranging from 3.49 to 4.79 suggested that the participants had limited prior knowledge before the intervention. After this, the control and treatment groups were identified using a draw by lot for the first cycle. After the first cycle, the two groups swapped roles.

After the pretest, the treatment group received and utilized flipped videos as an asynchronous activity to prepare the students during the face-to-face class. These learning materials were uploaded ahead of time to the group chat of the treatment group. The students of the treatment group were instructed to download the material and study it at their convenience. Random periodic fidelity check was conducted through informal interviews to ensure the utilization of the flipped videos. On the other hand, the students in the control group received the usual lecture method approach every session. However, both groups received the same pretest (formative) tests. The results in both groups were then analyzed to determine comparability in order to avoid bias. It was found that both groups had the same level of performance. After the first cycle, the implementation of the intervention was cut and delayed in order to reset both groups at the same level. After two weeks, both groups switched their roles and took a pretest of a set of lessons. Results were also analyzed to determine if a group had already performed better than the other. Again, results suggested that both groups were comparable.

After the duration of the study, the students of both groups had already produced the test scores in the role they acted. The raw scores of the students, as well as the needed demographic variables, were organized and analyzed using Jamovi, a statistical software package. Appropriate statistical tools were used to produce reliable results.

2.6 Socio-Economic Categorization

Since the home environment influences digital learning, the participants were categorized based on their family's monthly income. Bracketing followed the recommendation of the Philippine Institute for Development Studies (Albarico & Galigao, 2024). This is shown in Table 1.

In terms of household size, the classification was based on the recent trend of the Philippine Statistics Authority (PSA, 2023). These categories are vital for determining whether the flipped model can bridge the "digital divide" in large or low-income households.

2.7 Statistical Treatment of Data

The analysis employed a dual-layer approach using Jamovi, an open-source statistical software package. For descriptive statistics, mean and standard deviation were used to map the baseline and terminal achievement levels, while counts/percentages described the demographic profile. For inferential statistics, an independent samples t-test was utilized to compare the achievement gap between the two sections. Furthermore, a One-Way ANOVA was applied to determine if the efficacy of the flipped videos was moderated by the students' sex, income, or household size.

Table 1. Guide in appreciating the family monthly income of the participants of the study.

Income Class	Monthly Income Range (PHP)	Description
Poor	Below 13,873	Cannot meet basic food/non-food needs
Low/Lower	13,873 – 27,746	Vulnerable working class, limited savings
Lower Middle	27,746 – 55,492	Emerging middle, basic non-essentials
Middle Middle	55,492 – 97,112	Stable middle, education/investments
Upper Middle	97,112 – 166,570	Professional/entrepreneurial, assets
Upper	166,570 – 277,617	High earners, luxury access
Rich	Above 277,617	Wealthy, significant investments

Table 2. Guide in appreciating the household size of the participants of the study.

Sibling Count	Household Size Contribution	Description
0-1 siblings	2-4 members	Small nuclear (parents + few children)
2-3 siblings	4-6 members	Medium standard family
4+ siblings	6+ members	Large/extended; rural/poor households

2.8 Ethical Considerations

The study was conducted with the highest regard for participant safety and data privacy. In compliance with Republic Act 10173 (Data Privacy Act of 2012), all participants were assigned alphanumeric codes to ensure absolute anonymity. Informed consent was secured from both students and parents, with the clear provision that they could withdraw from the study at any time without academic consequence. All digital materials used were quality-assured to ensure they remained culturally sensitive and pedagogically sound.

3. Results

In this section, the analyses of the data are presented for interpretation to answer the inquiry of this work. As shown in Table 3, a combined 72 participants were involved in the inquiry, with 39 students coming from the Lemon section and 33 in the Grapes section. The variables included sex, household size, and family monthly income, representing the socioeconomic factors being considered to have an influence on how a student engages with digital interventions.

Among the respondents in both groups, males have higher numbers than their female counterparts. In section Lemon, 22 (56.41%) were males, and 17 (43.59%) were females. While in the section Grapes, 21 (63.64%) were males, and 12 (36.36%) were females. The table above also showed that the highest counts of the participants belong to medium-sized households (2 to 3 siblings) for both sections. Interestingly, the Grapes section had a higher concentration of students from "large" households (36.36%), those with four or more siblings. In terms of economic profile, the majority of participants in both sections live below the poverty line (income below PhP 13,873). In the Grapes section, this figure reaches 75.76 percent.

Table 3. Demographic profile of the participants of the study by grouping.

Variables	Sections			
	Lemon (Counts)	%	Grapes (Counts)	%
Sex				
Male	22	56.41	21	63.64
Female	17	43.59	12	36.36
Total	39	100.00	33	100.00
Household Size				
Large (with 4 or more siblings)	9	23.08	12	36.36
Medium (with 2 to 3 siblings)	16	41.03	13	39.39
Small (with one sibling)	14	35.90	8	24.24
Total	39	100.00	33	100.00
Family Monthly Income				
Lower Middle (PhP 27,746 to PhP 55,492)	4	10.26	0	0.00
Low Income (PhP 13,873 to PhP 27,746)	13	33.33	8	24.24
Poor (below PhP 13,873)	22	56.41	25	75.76
Total	39	100.00	33	100.00

Table 4 presents the test scores of the participants in the two cycles, where the two groups of participants changed roles after a short period to diminish the carry-over effect of the treatment in the first cycle.

Table 4. Comparative test scores between the two groups of participants of the study.

Cycle	Grouping	Section	Pretest		Posttest	
			Mean (M)	Standard Deviation (SD)	Mean (M)	Standard Deviation (SD)
First	Experimental	Lemon	4.08	2.23	6.28	1.67
	Control	Grapes	4.79	2.61	4.61	1.68
Second	Experimental	Grapes	4.48	1.95	6.00	2.09
	Control	Lemon	3.49	2.47	4.97	2.49

As shown in Table 4, the pretest means scores in the first cycle ranged from 3.49 to 4.79 out of a total of 10 items. Obviously, the standard deviations of the pretest scores were relatively large, for instance, for a mean of 4.08 and a standard deviation of 2.23. This indicates a high degree of variance in the participants' prior knowledge. However, the subsequent reduction in standard deviation for the treatment groups (e.g., a 25% decrease in the first cycle) suggests that the flipped video intervention acted as a stabilizing pedagogical force, bringing struggling learners closer to the class average and narrowing the achievement.

Table 5 shows that the intervention had a statistically significant effect on the posttest scores of both treatment groups. Using the Jamovi statistical software, rigorous analysis was employed in evaluating the intervention's efficacy across the

cycles of the crossover design. Repeated-Measures ANOVA was conducted to determine the within-subject effects for the two cycles of implementation. As shown in the table, the analysis revealed a highly significant increase in the participants' test scores. In the first cycle, there was a significant difference within-subjects in the transition of flipped instruction ($F(1,71)=12.8, p< .001$), with a large effect size of eta squared p ($\eta^2 = 0.153$). This suggests that approximately 15.3 percent of the variance in the participants' test scores in the first cycle can be directly attributed to the use of the intervention.

Table 5. Tests of within-subjects effects for test performance across cycles.

Cycles	F	df	p	η^2p
First (Treatment Group: Lemon vs Control Group: Grapes)	12.8	1	< .001	0.153
Second (Treatment Group: Grapes vs Control Group: Lemon)	35.5	1	< .001	0.333

Moreover, there was an even more significant demonstration within-subjects about the efficacy of flipped instruction in Araling Panlipunan in the test scores of the participants in the second cycle ($F(1,71)=35.5, p< .001$), with also a very large effect size of eta squared p ($\eta^2 = 0.333$). This indicates that 33.3 percent of the variance in the test scores can be explained by the intervention of the study.

Table 6 displays the one-way analysis of variance (ANOVA) as the appropriate statistical tool after having checked the characteristics of the data set. This tool of the Jamovi statistical software was first employed in the pooled pretest scores in the first and second cycles of the implementation to determine if the explanatory variables had a prior influence on the performance of the participants. Results showed no significant difference in the pooled pretest scores of the participants with p-values greater than 5 percent. This balanced baseline across both cycles confirms that the groups were comparable before the intervention began.

Table 6. Test of significant difference on the posttest scores of the participants in the treatment group by variable.

Variables	F	df1	df2	p
Sex	2.63	1	71	.114
Household Size	0.449	2	70	.641
Family Monthly Income	0.0451	2	70	.956

The same process was done in the pooled posttest scores in the first and second cycles of the implementation. The results showed no significant difference in the pooled posttest scores of the participants when grouped by sex ($F(1,71)=2.63, p= .114$), household size ($F(2,70)=0.449, p= .641$) and the family's monthly income ($F(2,70)=0.045, p= .956$). This indicates that the intervention had demonstrated a uniform effect on the test scores of the participants regardless of their sex, household size, and family monthly income.

4. Discussion

The study found that males have higher counts in both groups of participants. The Philippine Institute for Development Studies (PIDS, 2019) revealed that uniformity of gender distribution in Philippine public schools is rarely achieved. In some instances, this fluctuation occurred on the specific learning area. The same research arm also noted that male dominance happened in STEM-oriented tracks. This study observes a similar trend in Araling Panlipunan at the Grade 7 level. However, as noted by the Department of Education (2022), such gaps are often localized, suggesting that gender representation is highly dependent on the specific school environment and community demographics.

The inquiry revealed that most of the participants belonged to medium and large families. This finding aligns with the study of the Philippine Institute of Development Studies (PIDS, 2024), which revealed that large families are naturally occurring in the regions, and they usually face resource dilution. The studies of the Quezon City Government (2021) confirmed that larger household sizes can lead to a 25 percent reduction in educational investment per child, and potentially compromise academic focus due to divided parental support. While the economic profile showed that the majority of participants in both sections live below the poverty line. This is also supported by the Philippine Statistics Authority (PSA, 2024), which confirmed the dominance of low-income families in public secondary schools. This family income underscores a critical "learning vulnerability," where resource barriers, such as a lack of personal devices or data load, make the implementation of a flipped classroom both a challenge and a necessity.

In the implementation of the intervention, the pretest mean scores as well as the standard deviations of the pretest scores were relatively large, indicating a high degree of variance in the participants' prior knowledge. This suggests that the groupings were heterogeneous, indicating that some of the participants possessed some foundational understanding, while a larger portion of them struggled significantly in understanding historical concepts in Araling Panlipunan (Magulod, 2019). However, the subsequent reduction in standard deviation for the treatment groups suggests that the flipped video intervention acted as a stabilizing pedagogical force, bringing struggling learners closer to the class average and narrowing the achievement gap (Tutal & Yazar, 2021).

In terms of the efficacy of flipped instruction in Araling Panlipunan, it found a very large effect in the test scores of the participants of the study. The analysis clearly revealed that the variance was attributable to the flipped instruction. The results revealed compelling evidence that the process of implementing the intervention, the pause and replay strategy, effectively shifted the participants' trajectory across both sections. Besides, the participants gained momentum as they gained pedagogical thrust for becoming more familiar with the digital learning format throughout the crossover phases. This suggests that the intervention really worked, and the significant difference did not happen by chance (Morales, 2016).

The substantial improvement in the test scores can also be attributed to the comments of the participants, where a participant from Lemon section shared: "The strategy is okay. We can review the lesson anytime we want." While another participant from Grapes section said: "It is good, Sir. We can see the lessons even at home... it is like playing during the activity." These testimonies highlight the fun and flexibility of using flipped videos or instruction in Araling Panlipunan, a subject often perceived as dry or lecture-heavy (Tictic & Ducot, 2025).

The pooled posttest scores in the first and second cycles of the implementation showed no significant difference when the participants were grouped by sex, household size, and family's monthly income. This indicates that the intervention had demonstrated a uniform effect on the test scores of the participants regardless of their demographic profile. The consistency between the pooled pretest scores and the pooled posttest scores is a significant finding, according to Madia et al. (2025), who suggested that the flipped video intervention served as a socioeconomic equalizer. By providing a portable, repeatable learning resource, the intervention shuts down the resource dilution typically seen in large or low-income households. As one of the participants noted: "It makes us easy to study... considering our forgetfulness, if we see it over and over." This is supported in the study of Shikha and Baliya (2023), which concluded that engaging, self-contained digital modules can effectively buffer the external distractions typically found in dense or low-income household environments.

5. Conclusion

This flipped classroom model serves as a vital catalyst to improve the test scores of the students in a lecture-heavy Araling Panlipunan subject. This intervention transforms a passive lecture into a dynamic learning process. This model offers the students an instruction that is flexible for them to carry wherever they are. The study recorded a consistent and significant increase in the participants' posttest scores in the treatment groups. The significant increase in the posttest scores is a direct effect of the pedagogical approach. Most significantly, this intervention functioned as a socioeconomic equalizer, effectively neutralizing traditional resource barriers like sex, household size, and family monthly income. These findings suggested that the Department of Education (DepEd) has to embrace technology-integrated strategies to address learning gaps and meet the needs of the 21st-century Filipino learners across the country.

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Conflict of Interest Statement

The authors declare no conflict of interest.

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