

UTILIZATION OF INTERACTIVE POWERPOINT PRESENTATIONS, KATIPUNAN NATIONAL HIGH SCHOOL, CARMEN 3 DISTRICT, BOHOL

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ABSTRACT

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Integrating technology into classroom instruction can boost student engagement and improve learning outcomes. This study looked at how interactive PowerPoint presentations affected the performance of Grade 7 students in Araling Panlipunan and explored the challenges teachers faced. Conducted at Katipunan National High School in Bohol, the research used a mixed-methods approach: a quasi-experimental pre-test-post-test and teacher interviews. Two experimental groups used interactive PowerPoint, while two control

groups used traditional versions. The results showed that students taught with interactive PowerPoint had a mean post-test score of 77.92, compared to 66.03 for those in the control group taught with traditional PowerPoint. Of the students in the experimental group, 64.4% scored at or above the satisfactory performance level, indicating a majority performed well on the post-test. Thematic analysis revealed challenges, including limited technical skills, lack



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of formal training, time constraints, outdated technology, and difficulties aligning teaching materials with the curriculum. The findings show that interactive PowerPoint is effective for improving student performance in social studies when teachers have sufficient support and resources. A school-based program should enhance teacher skills and facilitate the use of curriculum-aligned materials. This research provides evidence for technology integration and underlines the role of interactive media in education.

INTRODUCTION

Teachers say it is hard to get students interested and motivated. So, they need to develop new ways to deliver information that are more engaging and up-to-date (Cosme, 2019; Gonzales & Hermosa, 2023). Examining interactive PowerPoint presentations as instructional tools may offer fresh approaches for teaching Araling Panlipunan, even though evidence in rural Philippine contexts remains scarce (Teja, 2019; Squire, 2019; San Miguel, 2022).

The lack of technical resources and infrastructure in some regions limits the adoption of interactive technology, especially in social studies education outside urban centers. This study addresses the gap by evaluating the impact of interactive PowerPoint presentations on Grade 7 Araling Panlipunan test performance and by examining teacher-reported challenges to inform teaching strategies and policies.

The study draws on Piaget's (1966) cognitive theory, which emphasizes how interactive PowerPoint presentations can engage students at different developmental stages and aid their understanding of complex historical and cultural concepts.

The Dual Coding Theory (Clark & Paivio, 1991) posits that integrating verbal and visual information facilitates learning. Interactive PowerPoint presentations employ text, pictures, animations, and sound to help students learn and remember new ideas.

Mayer's (2002) Multimedia Learning Theory posits that students acquire knowledge more efficiently when auditory and visual information is conveyed distinctly and systematically. This method breaks down material into smaller pieces and encourages active thinking through quizzes, animations, and moving slides. It helps keep teachings basic and stops too much information from coming in.

The TPACK framework examines how teachers integrate technology, content, and pedagogy. This study examines student-centered pedagogy in Araling Panlipunan through the utilization of interactive PowerPoint presentations. These frameworks help teachers plan lessons that work well. We used the ADDIE process (Davis, 2013)—Analyze, Design, Develop, Implement, and Evaluate—to ensure the presentations were aligned with the curriculum.

Research indicates the efficacy of interactive PowerPoint presentations

in educational settings (Osman et al., 2020; Lorensius et al., 2023; Ahillon & Aquino, 2023), notwithstanding considerable obstacles to their execution. Many professors still use PowerPoint primarily for lectures that do not require any interactivity (Osman et al., 2021). Some common problems include insufficient time to develop new materials, insufficient knowledge of technology, and outdated equipment (Johnson et al., 2016; Nwangwu et al., 2021). These issues are prevalent in remote schools, where educators have diminished opportunities for professional development (Onah & Nzewi, 2021).

Studies indicate that student motivation and pedagogical approaches are crucial in social studies education (Aguimlod et al., 2023; Tomines et al., 2021; Derraco & Derraco, 2022). This makes it extra challenging to stick to the plan. Students learn more and do better on tests when teachers adopt methods that connect the content to their lives and cultures.

However, there is insufficient research on adapting interactive PowerPoint presentations for these purposes. There is a lack of research on the use of these strategies in Philippine schools, especially in Araling Panlipunan.

In summary, this research assesses how interactive PowerPoint presentations influence student learning and teaching practices, providing valuable insights for educators and policymakers seeking to integrate technology effectively into social studies education.

RESULTS AND DISCUSSION

Quantitative Findings. Only one person (0.6%) was 11 years old, while the majority (57.2%) were 13 years old. The following most common ages were 12 (32.2%), 14 (8.3%), and 15 (1.7%). This age distribution guarantees a degree of developmental stability, advantageous for assessing the outcomes of educational initiatives, since it aligns with the anticipated age range for Grade 7 students.

The sample's sex distribution was well-balanced, with 92 males (51.1%) and 88 females (48.9%), which made it possible to assess the reactions to gender-related teaching methods fairly. The exact number of students in the experimental and control groups (90 each) provided a robust basis for comparison. With a mean pre-test score of 55.28, students in the control group initially performed below the expected competency level, according to the performance analysis. Their score remained below the passing mark, even though it increased slightly to 66.03 on the post-test. This slight rise indicates that regular PowerPoint presentations did not sufficiently help students study more effectively. Nwangwu et al. (2021) argue that traditional slide-based presentations often promote passive learning, limiting meaningful engagement and making it harder to transfer knowledge.

Students in the experimental group, on the other hand, demonstrated a considerable improvement after being taught via interactive PowerPoint presentations. Their average score increased from 53.89 to 77.92 between

the pre-test and the post-test, indicating a “Fairly Satisfactory” level of performance.

This significant jump indicates how effectively interactive elements such as games, quizzes, animations, and multimedia can be used in the classroom and for learning. These findings align with those of Osman et al. (2020) and Lorensius et al. (2023), who found that interactive multimedia tools, compared with conventional methods, enhance engagement and comprehension. All of these studies suggest that interactive PowerPoint presentations can help Araling Panlipunan students do better in school.

Significant Difference between the Pre-test and Post-test Scores of the Students using Interactive PowerPoint. A paired-samples t-test was conducted to examine the difference between students’ pre- and post-test scores when taught using interactive PowerPoint presentations. The results revealed a substantial increase in student performance, with the mean score rising from 53.89 before the intervention to 77.92 after instruction, reflecting a mean difference of 24.03 points. This improvement was statistically significant, $t(89) = -10.68, p < .001$, thereby rejecting the null hypothesis. These findings demonstrate that interactive PowerPoint presentations had a positive and significant impact on students’ learning outcomes in Araling Panlipunan. The integration of interactive elements—such as quizzes, animations, and multimedia—appears to have fostered greater engagement and improved comprehension. This result is consistent with the findings of Ruado and Cortez (2024) and Khoirunnisa and Widagdo (2024), who similarly reported that interactive presentation tools enhance motivation, create multiple pathways for information processing, and ultimately improve academic performance.

Table 1. Paired Samples Test Results for the Experimental Group

Group	Test	Mean	Mean Difference	t-value	p-value	Decision	Interpretation
Experimental (Interactive PowerPoint)	Pre-test	53.89					
	Post-test	77.92	24.03	-10.68	.000	Reject Ho	Significant

Significant Difference between the Post-test Scores of the Students Taught with Interactive PowerPoint (Experimental) and Traditional PowerPoint (Control). An independent-samples t-test was performed to evaluate post-test performance between pupils who were instructed using interactive PowerPoint presentations and those who were educated through traditional methods. The experimental group had a mean score of 77.92, which was higher than the control group’s mean score of 66.03. The difference of 11.89 points was statistically significant, $t(178) = 4.99, p < .001$. The results show that pupils who learned through interactive presentations did better than those who learned through traditional methods.

The findings are consistent with previous research by Sahronih et al. (2020) and San Miguel (2022), which demonstrated that interactive and

gamified PowerPoint elements enhance engagement, motivation, and academic performance.

Table 2. *Independent Samples Test Results for the Experimental and Control Groups*

Test	Group	Mean	Mean Difference	t-value	p-value	Decision	Interpretation
POST-TEST	Experimental	77.92					
	Control	66.03	11.89	4.99	.000	Reject Ho	Significant

The post-test performance distributions of the experimental and control groups differed considerably. The fact that all 90 students in the control group maintained their performance at the “Did Not Meet Expectations” level suggests that conventional PowerPoint training was ineffective in raising them to the passing level. The experimental group, on the other hand, showed significant changes in performance levels, with 58 children receiving scores categorized as Fairly Satisfactory or higher. This change demonstrates how effective interactive PowerPoint presentations are in improving mean scores and advancing pupils across performance categories, indicating broader gains for the group.

These results align with those of Khoirunnisa and Widagdo (2024), who emphasized the benefits of interactive instruction for increasing student engagement and retention. In a similar vein, Mansour and Odeh (2019) found that interactive PowerPoint-based training greatly enhances student accomplishment and retention of information. On the other hand, the sluggish performance of the control group is consistent with Osman and Hamzah’s (2020) findings, which show that traditional slide-based approaches often promote passive learning with negligible gains in academic achievement. Taken together, these findings highlight how interactive presentations, as opposed to more conventional methods, can significantly alter classroom learning dynamics.

Table 3. *Post-test Performance Level * Respondent’s Group Crosstabulation*

		Respondents Group		Total
		Experimental	Control	
Post-test Performance Level	Did Not Meet Expectations	32	90	122
	Fairly Satisfactory	7	0	7
	Satisfactory	9	0	9
	Very Satisfactory	11	0	11
	Outstanding	31	0	31
Total		90	90	180

Overall, the findings of this study demonstrate that interactive PowerPoint

presentations can significantly enhance student performance, particularly when intentionally designed with engaging, interactive features. This result reinforces the growing body of evidence highlighting the pedagogical value of interactivity in classroom instruction. For instance, San Miguel (2022) found that gamified PowerPoint presentations increase learner motivation and contribute to higher academic achievement by promoting active participation. From a theoretical standpoint, Mayer's (2002) Multimedia Learning Theory posits that integrating verbal and visual information facilitates deeper cognitive processing, thereby improving engagement and comprehension. In this study, the inclusion of animations, quizzes, simulations, and dynamic feedback mechanisms likely supported dual coding and active processing, resulting in better learning outcomes among students in the experimental group. Similarly, Piaget's (1966) Cognitive Theory underscores the role of active learning experiences in knowledge construction; interactive presentations provide opportunities for student involvement and real-time feedback, aligning well with these developmental principles. Taken together, these findings emphasize the need to modernize instructional strategies, particularly in subjects like Araling Panlipunan, where traditional lecture-based approaches often fall short in sustaining student interest and promoting meaningful learning.

Qualitative Findings. Thematic analysis of the semi-structured interviews with Araling Panlipunan teachers yielded seven major themes that illuminate their experiences and perspectives on the use of interactive PowerPoint presentations in classroom instruction.

The first theme, familiarity and usage, shows that while most teachers know interactive PowerPoint features, their use varies. Some use basic elements like animations and hyperlinks occasionally, while others integrate more tools but report limited technical skills, especially with complex features.

The second theme, perceived benefits for students, reveals that all teachers agree that interactive PowerPoint presentations boost student engagement and learning. They saw longer attention spans, more participation, and better retention of key concepts with interactive elements.

The third theme, design and technical challenges, shows that creating high-quality interactive presentations takes considerable time and effort. Teachers find lesson prep demanding, especially when customizing animations, adding quizzes, or fixing hyperlinks. Many also face technical difficulties, such as old laptops and software issues, which hinder smooth use.

The fourth theme, alignment with the curriculum, highlights teachers' challenges in matching interactive materials with required competencies. Pre-made templates often require significant changes to align with learning objectives, making preparation more difficult and sometimes causing misalignment with standards.

The fifth theme, lack of formal training and desire for support, shows that most teachers have not had formal training in using interactive PowerPoint. They learn on their own or with colleagues. They want professional development

and institutional help to improve their skills.

Despite these constraints, the sixth **theme, students' feedback, shows that learners responded enthusiastically to interactive presentations. Teachers reported that students described lessons as more enjoyable, engaging, and easier to understand, which translated into more dynamic classroom interactions and improved participation.**

Finally, the seventh theme, suggestions for improvement, captures teachers' ideas for better use of interactive PowerPoint. Suggestions include better access to equipment, targeted training, and ready-to-use, curriculum-aligned templates to save time and support consistent use.

Integration and Analysis of Quantitative and Qualitative Findings. Integrating quantitative and qualitative results provided a holistic view of the effectiveness of interactive PowerPoint presentations in Araling Panlipunan instruction. Quantitative analyses showed that students exposed to interactive presentations achieved significantly higher post-test scores than those taught with traditional PowerPoint, indicating measurable learning gains. These statistical improvements were corroborated by qualitative data, which showed that teachers consistently reported that students exhibited stronger retention, higher participation, and greater overall engagement during lessons facilitated by interactive slides.

The qualitative findings further clarified how interactive elements, such as quizzes, animations, and dynamic feedback, directly supported student attention by breaking monotony, maintaining motivation through immediate responses, and sparking enthusiasm with visually engaging content. Teachers noted that these mechanisms made lessons more participatory and lively, reinforcing the observed learning.

CONCLUSIONS

According to the results, interactive PowerPoint presentations are helpful teaching resources for Araling Panlipunan 7. Compared with students taught with conventional PowerPoint, those in the experimental group who received interactive presentations scored noticeably higher on post-tests. Additionally, teachers reported increased student engagement, more active participation, and improved information retention.

However, several instructional and systemic barriers were identified that may limit the effectiveness of interactive tools. Many teachers lacked sufficient technical skills to design and deliver interactive materials effectively and often depended on self-directed learning. Additional constraints included limited preparation time, outdated technological infrastructure, and difficulties in aligning interactive content with curriculum standards.

RECOMMENDATIONS

The following recommendations aim to enhance the integration of interactive PowerPoint presentations in Araling Panlipunan instruction:

1. **Capacity Building and Training.** For the Department of Education (DepEd): Design and implement structured professional development programs that equip teachers with both technical and pedagogical competencies for creating and effectively using interactive PowerPoint presentations. Additionally, consider developing ready-to-use, curriculum-aligned interactive lesson templates to reduce teachers' preparation time and ensure consistent, high-quality instruction.
2. **Provision of Technological Resources.** For School Administrators: Ensure that teachers have access to updated technological tools, including laptops, projectors or smart TVs, and reliable internet connectivity. Institutionalize in-service training programs and Learning Action Cell (LAC) sessions on ICT integration and interactive instructional strategies to build teacher capacity within the school community.
3. **Development of Shared Instructional Repositories.** For Schools: Establish a centralized digital repository (e.g., Google Drive or DepEd's Learning Management System) containing interactive PowerPoint templates, multimedia-enhanced lessons, assessment tools, and editable games. This repository should promote resource sharing, efficiency, and instructional quality, while fostering collaboration among teachers.
4. **Teacher Engagement and Collaboration.** For Teachers: Regularly integrate interactive PowerPoint presentations into teaching to enhance student engagement and learning outcomes. Prioritize participation in professional development activities and collaboration with peers through LACs to co-create and share multimedia instructional materials and adopt best practices.
5. **Curriculum and Content Development.** For Curriculum Developers and Educational Technology Specialists: Produce interactive lesson exemplars that are fully aligned with curriculum standards and designed to cater to diverse learning styles. These materials should incorporate features such as animations, hyperlinks, quizzes, and educational games to support differentiated instruction and active learning.
6. **Student Participation and Feedback.** For Students: Actively engage with interactive presentations during classroom instruction and use these materials for self-study and review. Provide constructive feedback on which interactive elements are most helpful for further improving the instructional design process.

7. Further Research. For Future Researchers: Replicate and extend this study across different subject areas, grade levels, and educational settings to validate and generalize the findings. Conduct longitudinal research to examine the long-term impact of interactive multimedia instruction on learning retention, critical thinking, and student motivation. Pursue comparative studies exploring other educational technologies to identify the most effective tools for classroom use.

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