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The Flippity.Net to Enhance the Cognitive Skills in Araling Panlipunan: A Mixed-Methods Action Research

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Abstract:

This study explores the effectiveness of Flippity.net in enhancing the cognitive skills of Araling Panlipunan 10 learners. A mixed-methods design was employed, involving 35 Grade 10 learners from Mariano Marcos State University–Laboratory High School, Batac Campus. Quantitative data were collected through two assessments aligned with Bloom's Taxonomy—one without intervention and one with intervention—and were compared using descriptive and inferential statistical techniques, including the paired t-test. Qualitative data, reflecting students' perceptions of the intervention, were collected through a focus group discussion. Findings revealed a general improvement in students' cognitive skills with the intervention: memory recall and comprehension improved, problem-solving skills remained unchanged, analytical thinking declined, and critical and innovative thinking showed slight gains. Student feedback indicated that the intervention enhanced their cognitive skills and increased their satisfaction in solving complex problems independently; they cited stress, fatigue, interest level, and personal biases as possible reasons for the decline in analytical thinking. Overall, the study demonstrates that Flippity.net enhances the cognitive skills of Grade 10 Araling Panlipunan learners.

Keywords: Araling Panlipunan, contemporary issues, cognitive skills, Flippity.net, educational tools

I. Introduction:

In today's technology-driven world, the traditional classroom is evolving—chalk and talk are no longer sufficient to meet the demands of 21st-century learners. Imagine a classroom where learners are not merely memorizing facts but are actively engaged in solving real-world problems, analyzing societal trends, and creatively constructing solutions. This vision lies at the heart of effective social studies instruction, yet many students still struggle with developing the critical cognitive skills needed to thrive academically and socially. Despite curricular reforms and the growing call for learner-centered instruction, higher-order thinking skills often remain underdeveloped in the classroom, particularly in subjects like Araling Panlipunan.

Cognitive skills—such as memory recall, comprehension, problem-solving, analytical thinking, critical thinking, and innovative

thinking—are central to academic success and lifelong learning (Askar & Altun, 2009; Anderson & Krathwohl, 2001). Bloom's Revised Taxonomy serves as a foundational framework for categorizing these skills, encouraging educators to guide students from basic knowledge acquisition toward deeper intellectual engagement and creative output (Adams, 2015). In the context of Araling Panlipunan, which emphasizes understanding contemporary issues and fostering responsible citizenship, the development of these cognitive skills becomes not only an academic goal but a national imperative (DepEd, 2016; Guarin & Salcedo, 2018).

At Mariano Marcos State University – Laboratory High School, classroom observations during Field Study revealed a recurring challenge: instruction heavily relied on teacher-centered lectures and lower-order questioning techniques. While students responded confidently to recall and comprehension questions, they showed significant hesitation and difficulty when asked to analyze, evaluate, or create—hallmarks of higher-order thinking. This gap in cognitive engagement presents a pressing issue in fulfilling the goals of the K-12 Araling Panlipunan curriculum, which seeks to produce critically reflective and socially aware learners (Lauro, 2022; NCSS, 2019).

This classroom-based action research addresses the question, can the integration of a digital learning tool like Flippity.net enhance the cognitive skills of Grade 10 students in Araling Panlipunan? Flippity.net is an online platform that transforms Google Sheets into interactive and gamified learning activities, supporting students' engagement with content in dynamic and personalized ways (Ellis et al., 2021). The tool's potential to scaffold learning across all levels of Bloom's Taxonomy—particularly in recall, comprehension, and creative application—makes it a promising intervention for addressing the limitations of traditional teaching practices.

The thesis of this study asserts that the integrating Flippity.net into Araling Panlipunan instruction significantly enhances students' cognitive skills by increasing engagement, fostering deeper understanding of contemporary issues, and providing structured opportunities for higher-order thinking. Through a blend of interactive and collaborative features, the tool aligns with key educational theories such as Constructivism (Piaget & Vygotsky), Cognitive Load Theory (Sweller), and principles of technology-enhanced learning (Raymundo, 2020; Alexopoulou et al., 2020).

By exploring how digital tools can enhance cognitive development, this study aims to contribute to ongoing educational innovations that prepare students not just to absorb information, but to critically engage with the world around them.

II. Methodology:

This study used a classroom-based action research design combining both quantitative and qualitative methods to assess how Flippity.net affects the cognitive skills of Grade 10 students in Araling Panlipunan. The researchers gathered data through two main tools: paper-and-pencil assessments and a Focus Group Discussion (FGD). The assessments were based on a validated Table of Specifications aligned with Bloom's Taxonomy, ensuring that each item tested different cognitive levels such as remembering, understanding, applying, analyzing, evaluating, and creating. These tools helped measure students' cognitive skills before and after the intervention, while the FGD provided insight into their experiences and perceptions of using Flippity.net.

The study involved one Grade 10 section from Mariano Marcos State University – Laboratory High School, consisting of 35 students aged 15–16. Data collection took place over four weeks: the first two weeks without the intervention and the next two weeks using Flippity.net. After each phase, a 50-item assessment was given—45 multiple-choice questions and 5 essay-type questions targeting skills from memory recall to innovative thinking. These assessments were evaluated using proficiency levels adapted from the Department of

Education's National Achievement Test. The table 1 below shows the scoring guide used to classify student performance:

Table 1: Adjusted Proficiency Levels

Proficiency Level	50-item Test	10-item Test	5-item Test
Highly Proficient (HP)	40–50	8–10	4–5
Proficient (P)	30–39.99	6–7.99	3–3.99
Nearly Proficient (NP)	20–29.99	4–5.99	2–2.99
Low Proficient (LP)	10–19.99	2–3.99	1–1.99
Not Proficient (NOT)	0–9.99	0–1.99	0–0.99

To evaluate the effectiveness of the intervention, a **paired t-test** was used to compare the mean scores of students before and after using Flippity.net. This statistical test determined whether there were significant improvements in each cognitive skill area.

This was supplemented with qualitative data from the FGD, where students shared insights about how the tool helped them engage with lessons, improve memory and comprehension, and face challenges in analytical thinking. This combination of test scores and student reflections provided a holistic view of Flippity.net's impact on cognitive learning.

III. Results and Discussion:

Flippity.net as a Tool to Enhance Cognitive Skills and Proficiency

The assessments served as the primary quantitative instrument to measure students' cognitive skills without and with the implementation of Flippity.net. This section presents the analysis of those assessment results, emphasizing significant changes across various cognitive domains. The quantitative data were complemented by qualitative findings, providing a more comprehensive understanding of Flippity.net's effectiveness in enhancing students' learning experiences and cognitive abilities.

Table 2: Proficiency Levels of Students' Cognitive Skills without the Intervention

Cognitive Skills	Without Intervention	
	$\bar{x}$	di
Memory Recall	10.00	P
Comprehension	7.29	P
Problem Solving	8.26	HP
Analytical Thinking	3.23	P
Critical Thinking	3.20	P
Innovative Thinking	2.83	NP
Overall	34.80	P

Legend: $\bar{x}$- mean; di- descriptive interpretation; NOT-Not Proficient; LP-Low Proficient; NP- Nearly Proficient; P-Proficient; HP-High Proficient

Prior to the implementation of the intervention, as shown in Table 2, students demonstrated varying levels of cognitive proficiency in Araling Panlipunan, with an overall proficiency level classified as Proficient ($\bar{x}$ = 34.80). This suggests that, as a group, learners were generally capable of meeting academic expectations, although with noticeable differences across specific cognitive domains.

Among the six skills assessed, students exhibited their strongest performance in Problem Solving, achieving a Highly Proficient level ($\bar{x}$ = 8.26). This reflects their ability to apply learned concepts in practical or situational tasks, a positive indicator of their readiness to engage with real-world issues—particularly relevant in a subject such as Araling Panlipunan, which emphasizes societal understanding and historical contexts. Recent studies emphasize that problem-solving is a critical outcome of cognitive engagement, flourishing when learning environments encourage exploration and real-world application (Yu, et. al., 2014).

Memory Recall ($\bar{x}$ = 10.00) and Comprehension ($\bar{x}$ = 7.29) were also rated within the Proficient range, indicating that students had developed a solid base in retrieving information and grasping fundamental concepts. These results suggest that while students are well-versed in retaining facts and understanding key ideas, these foundational abilities are not necessarily translating into deeper or more evaluative thinking. Current research highlights the over-reliance on standardized tests, which often prioritize rote memorization over higher-order thinking skills (Oyeronke & Adeoye, 2024).

Interestingly, Analytical Thinking ($\bar{x}$ = 3.23) and Critical Thinking ($\bar{x}$ = 3.20), while still categorized as Proficient, showed noticeably lower mean scores. These results imply that while students may demonstrate some capacity to analyze and evaluate information, their performance in these higher-order thinking domains is not yet consistent or robust. Developing such skills typically requires a deliberate pedagogical shift toward inquiry-based and evidence-driven instruction. Sartika (2018) demonstrated that Guided Inquiry and Problem-Based Learning significantly enhance students' analytical thinking by engaging them in problem formulation, information gathering, experimentation, observation, and collaborative drawing of conclusions. Without such focused support, students may struggle to transition from basic comprehension to critical analysis. Without such focused support, students may struggle to transition from basic comprehension to critical analysis.

The most significant concern was observed in Innovative Thinking, which was rated as Nearly Proficient ($\bar{x}$ = 2.83)—the lowest among all cognitive domains assessed. This indicates that students had limited ability to generate original ideas or demonstrate creativity in their responses. Recent literature highlights that conventional education models often restrict creativity due to rigid curricular demands and insufficient opportunities for experimentation (Isabirye et al., 2025). Low proficiency in this area indicates a need for instructional redesign to foster more imaginative and divergent thinking.

Overall, while students were largely proficient in lower-order skills, such as recalling and comprehending information, they showed limited development in higher-order thinking, particularly in critical and innovative dimensions. These findings not only highlight the strengths of existing instructional strategies but also point to significant areas for improvement. The results serve as a foundation for considering instructional innovations—such as digital interventions—that can foster deeper cognitive engagement and elevate the development of complex thinking skills.

Table 3: Proficiency Levels of Students' Cognitive Skills with the Intervention

Cognitive Skills	With Intervention	
	x̄	di
Memory Recall	12.83	HP
Comprehension	9.06	HP
Problem Solving	8.26	HP
Analytical Thinking	2.69	NP
Critical Thinking	3.60	P
Innovative Thinking	3.26	P
Overall	39.69	P

Legend: x̄- mean; di- descriptive interpretation; NOT-Not Proficient; LP-Low Proficient; NP- Nearly Proficient; P-Proficient; HP-High Proficient

The students' level of cognitive skill proficiency following the use of Flippity.net showed a notable shift, indicating varied effects of the intervention across different cognitive domains. The overall mean increased from 34.80 to 39.69, which remained within the Proficient range. This overall growth signifies a general improvement in students' cognitive functioning, particularly in areas where Flippity.net's interactive features aligned closely with foundational skill development.

Memory Recall showed the most substantial improvement, increasing from a mean of 10.00 (Proficient) to 12.83 (Highly Proficient). The effectiveness of digital flashcards, games, and repetition-based tasks in enhancing information retrieval and retention aligns with Mayer's (2017) Cognitive Theory of Multimedia Learning. This theory emphasizes how integrating verbal and visual elements in digital environments supports dual-channel processing and improves learning outcomes.

Similarly, Comprehension increased from Proficient ($\bar{x}$ = 7.29) to Highly Proficient ($\bar{x}$ = 9.06). This upward shift reveals students' enhanced ability to interpret and make meaning of content—a likely result of Flippity.net's capacity to present concepts in various formats. Digital interactivity may have facilitated better understanding through real-time engagement, supporting constructivist perspectives which emphasize the importance of learner-centered environments (Saleh & Mohamed, 2025).

Interestingly, Problem-Solving maintained its Highly Proficient status, with the mean at 8.26 across both without and with the intervention phases. Although there was no numerical increase, the steady level indicates that students consistently performed well in applying knowledge to solve contextual problems. This consistency suggests that Flippity.net was effective in maintaining high performance in this skill domain.

However, not all cognitive domains improved. A significant drop was observed in Analytical Thinking, where the proficiency level declined from Proficient ($\bar{x}$ = 3.23) to Nearly Proficient ($\bar{x}$ = 2.69). This decline raises concern, as it suggests that while Flippity.net may support foundational and procedural thinking, it might fall short in fostering complex reasoning tasks such as categorizing, comparing, or deconstructing ideas. The platform's structured nature, although effective for recall and comprehension, may have limited opportunities for deeper analytical engagement. This observation aligns with findings that emphasize the importance of active learning strategies—such as Problem-Based Learning (PBL), Project-Based Learning (PBL), and Inquiry-Based Learning—for developing

analytical thinking skills (Kwinram et al., 2022; Rubio and Garcia Conesa, 2022; Thaiposri and Wannapiroon, 2015).

Moreover, Critical Thinking shows a modest increase from 3.20 to 3.60, maintaining its Proficient status. This progress indicates that students were beginning to engage more critically with content, possibly due to exposure to activities requiring decision-making and evaluation. However, the growth remains limited, suggesting that while digital platforms can support the development of judgment and reasoning, these outcomes may require more nuanced instructional support (Rafiq et al., 2024).

Research supports that PBL models positively impact students' critical and analytical thinking (Birgili, 2015; Hallinger & Lu, 2011; McCrum, 2017; Zabit, 2010). Similarly, inquiry-based learning activities enhance both analytical thinking and student satisfaction with the learning process (Nuangchalerm & Chaiyasuk, 2009). Ramadani et al. (2021) investigated tools designed to improve analytical thinking, while Qomariya et al. (2018) confirmed the effectiveness of inquiry-based learning models in achieving this goal. Rooted in constructivism, inquiry-based learning emphasizes students' active involvement in exploring and constructing knowledge (Ramadani et al., 2021).

A similar trend was found in Innovative Thinking, which increased from 2.83 (Nearly Proficient) to 3.26 (Proficient). Students' advancement to the next proficiency level suggests increased creativity and originality in their responses. This may be attributed to activities that allowed learners to generate content or construct novel answers. As highlighted by Henriksen et al. (2016), fostering creativity in digital learning contexts requires tools that support open-ended exploration, iterative design, and opportunities for self-expression.

With the implementation of intervention reflected on the results, indicates a generally positive effect of Flippity.net, especially in Memory Recall and Comprehension, both of which progressed to the Highly Proficient level. Meanwhile, the decline in Analytical Thinking underscores the need for instructional balance: while digital tools are valuable in reinforcing basic and intermediate cognitive skills, they may not be sufficient for promoting higher-level reasoning unless integrated with richer, more exploratory learning experiences. The mixed results point to the importance of using Flippity.net not as a standalone strategy, but as part of a diversified teaching approach that supports all cognitive skill levels.

Table 4: The Paired T-test Comparison of the Examinations Administered

Cognitive Skill	Without Intervention		With Intervention		$\bar{x}d$	t-value	p-value
	$\bar{x}$	sd	$\bar{x}$	sd			
Memory Recall	10.00	2.326	12.83	1.671	2.823	7.691**	0.000
Comprehension	7.29	1.949	9.06	1.211	1.77	6.231**	0.000
Problem- Solving	8.26	1.147	8.26	1.245	0.00	0.000	1.000
Analytical Thinking	3.23	1.140	2.69	1.051	-0.54	-2.111*	0.042
Critical Thinking	3.20	1.368	3.60	1.333	0.40	1.622	0.114
Innovative Thinking	2.83	1.200	3.26	1.010	0.43	2.214*	0.034
Overall	34.80	6.337	39.69	4.733	4.89	7.408**	0.000

*Legend: ** – $p < 0.01$ significance; * – $p < 0.05$ significance; $\bar{x}$ – Mean; sd – Standard Deviation; $\bar{x}d$ – Mean Difference.*

The paired T-test results reveal statistically significant differences in several cognitive skills of Grade 10 learners before and after the integration of Flippity.net in AP instruction. Overall, the students' performance improved from a mean of 34.80 to 39.69, yielding a mean difference of 4.89. The corresponding t-value of 7.408 and p-value of 0.000 ($p < 0.01$) provide strong evidence that the intervention positively impacted students' general cognitive proficiency.

Among specific cognitive domains, Memory Recall showed the most substantial increase. With a mean gain of 2.83 (from 10.00 to 12.83), the t-value of 7.691 and p-value of 0.000 confirm a significant improvement ($p < 0.01$). This aligns with recent findings that interactive digital tools effectively reinforce memory recall (Tarigan et al., 2023).

Comprehension also demonstrated significant gains, rising by 1.77 points ($t = 6.231$, $p = 0.000$). This suggests that Flippity.net's interactive features help students better understand and internalize content, consistent with current research emphasizing the role of interactive digital tools in deepening learning and extending knowledge (Haryani & Ayuningtyas, 2021).

Innovative Thinking showed a modest but statistically significant improvement, with a mean increase of 0.43 ($t = 2.214$, $p = 0.034$). These findings correspond with recent studies highlighting how gamified and interactive platforms stimulate creativity by encouraging idea generation and flexible thinking (Dangprasert, 2023).

Conversely, Analytical Thinking declined with the implementation of the intervention. The significant mean decrease of -0.54 ($t = -2.111$, $p = 0.042$) suggests the intervention may not have adequately fostered deeper analytical processing. This aligns with recent research indicating that digital tools emphasizing recall and comprehension may not sufficiently develop higher-order analytical skills (Anderson et al., 2023).

While a slight, non-significant increase in Critical Thinking was observed (mean difference = 0.40, $t = 1.622$, $p = 0.114$), suggesting a possible positive trend, the intervention's impact on evaluative reasoning appears limited. This aligns with research (Fiock, 2020; Mejia & Sargent, 2023) emphasizing the need for intentional instructional design in online environments to foster critical thinking. Without explicit scaffolding and interactive, reflective activities, digital learning alone may be insufficient to cultivate these skills.

Finally, Problem-Solving remained unchanged (mean difference = 0.00, $p = 1.000$), indicating no significant effect of the intervention in this area. This may reflect a need for more problem-centered tasks and a combination of various digital tools, which recent studies have found essential for enhancing problem-solving skills (Lu & Xie, 2024).

Statistical analysis confirms that Flippity.net substantially improves overall cognitive skills, particularly in memory and comprehension. However, the platform's limitations in boosting analytical and problem-solving skills highlight the need for complementary teaching approaches that engage students in higher-order thinking.

The use of Flippity.net as an instructional tool demonstrated effectiveness in enhancing Grade 10 students' cognitive skills, particularly in memory recall, comprehension, and innovative thinking, as shown by statistically significant improvements in these cognitive levels. These findings suggest that Flippity.net supports foundational and creative cognitive processes by engaging students in activities that promote retention, understanding, and idea generation.

However, the intervention had limited impact on higher-order cognitive skills such as analytical thinking, critical thinking, and problem solving. The results indicate that while Flippity.net effectively strengthens lower to mid-level cognitive skills, it may not sufficiently challenge students in complex cognitive tasks that require deeper analysis, evaluation, and application of knowledge to new problems.

To bridge this gap, future implementations could integrate Flippity.net with additional instructional strategies, educational technologies, or specially designed activities that target higher-order thinking skills. Such complementary approaches would facilitate a more balanced development of cognitive abilities across all levels.

Overall, the findings affirm that Flippity.net positively contributes to enhancing students' cognitive proficiency, especially at the foundational and mid-level cognitive stages. With thoughtful enhancement and targeted integration, it has the potential to foster broader cognitive growth encompassing all cognitive levels.

Students' Perceptions and Experiences in using Flippity.net

The Focus Group Discussion (FGD) served as a supplemental instrument to validate and enrich the data gathered from the assessments conducted across both phases of the study. This section highlights students' personal perceptions and experiences regarding the use of Flippity.net as a teaching and learning tool. The FGD consisted of three carefully crafted main questions, each accompanied by sub-questions designed to guide a deeper exploration of students' thoughts and to complement the quantitative findings with meaningful qualitative insights.

The following discussion is organized into three key themes that naturally emerged from the students' responses during the FGD, offering a deeper and more personal look into their experiences with Flippity.net. The responses show that the platform significantly supported cognitive skill development, particularly memory retention and comprehension of key concepts. Students also thoughtfully reflected on both the advantages and challenges of using the tool, praising its interactive and engaging features while also noting areas of difficulty. Furthermore, they drew comparisons between Flippity.net-supported learning and more traditional classroom methods, emphasizing how the digital approach fostered more active participation, greater curiosity, and a more meaningful connection to real-world issues. These emerging themes not only echo the quantitative results but also deepen the understanding of how such digital interventions can shape learning in practical, engaging, and transformative ways.

How Flippity.net Supports the Enhancement of Cognitive Skills

One prominent discourse that surfaced from the students' responses was the marked improvement they experienced in both memory recall and the comprehension of concepts. Many students highlighted how these cognitive skills were enhanced through their engagement with the activities, emphasizing that:

> *"I think Flippity.net helps us improve our remembering skills of because of its active recall. We have a lot of ways on how to use Flippity.net—so, using flashcards, quizzes, and many more; this is a very famous studying method or learning method called active recall and it really encourages you to remember things and to not just forget them in a short-term basis but in a wider scope wherein you actually absorb the information."*
>
> - Student Number 11

Another notable finding that emerged from the students' feedback was their perception of the intervention as both highly engaging and enjoyable. This sentiment is clearly reflected in the statements shared by the students:

> *"It helps me retain ideas better because I am actively using it rather than just passively hearing it from one ear to another. It also boosted my confidence, because when I figured out a solution to something complex."*
>
> - Student Number 32

> *"With Flippity.net, I can say that it has become more engaging, and we were amazed because it's interactive with various activities, compared to traditional learning, which is just mostly recitation. Though it's not perfect, there are still some flaws. But I can say that it's engaging, fun, and at times, it makes understanding easier because we are actively participating in the discussion."*
>
> - Student Number 03

They described the activities as stimulating and enjoyable. The gamified and hands-on strategies—such as discussions, presentations, and games facilitated through Flippity.net—transformed lessons into engaging challenges. These approaches boosted their motivation, simplified complex ideas, and fostered a sense of ownership and deeper involvement in the learning process.

While Table 4 shows improvements in memory recall and comprehension, reinforced by focus group discussion (FGD) feedback, students expressed mixed perceptions regarding their analytical skills. They noted that analytical thinking may be shaped and affected by multiple factors, as students explained:

> *"I've realized that my analytical thinking depends on several factors. First, having enough background knowledge helps me break down concepts and see patterns more easily. Regular practice with complex problems also strengthens my skills. However, my emotional state affects my focus—when I'm stressed or tired, especially during tests, my thinking suffers. Conversely, genuine interest and motivation improve my critical thinking. The environment matters too; I think it is better in quiet, focused settings rather than noisy ones. Lastly, my own assumptions and biases influence how I interpret information, and I am working to challenge these more often."*
>
> - Student Number 05

Although students demonstrated improved analytical skills during class presentations—particularly when tasked to identify problems, causes, effects, and solutions using Flippity.net—the overall assessment data showed a slight decline in analytical performance with the intervention. Stress, fatigue, interest level, personal biases that weigh their answers more carefully and think beyond the assessments, and environmental distractions were reported as factors affecting analytical thinking.

To address Flippity.net's limitations and further strengthen analytical thinking, a combination of alternative activities can be integrated into the learning process. By integrating debates, case studies, simulations, and reflective journals into the learning process, alongside Flippity,net, students will benefit from a more well-rounded and balanced development of analytical thinking among the other HOTS.

Students' Insights into the Advantages and Difficulties of Flippity.net

In addition, several students elaborated on how the integration of Flippity.net supported their engagement with more complex and abstract ideas. They noted that the interactive nature of the tool not only made it easier to grasp deeper content but also fostered meaningful collaboration with their peers. These perspectives are reflected in the following statements:

> *"Instead of just sitting and listening to lectures and trying to memorize everything, I now get to dive deeper into problems. It pushes me to think critically, not only about the content but also about how to apply it to different situations."*
>
> - Student Number 05

"I've also noticed that I am talking and collaborating more with others, bouncing ideas off my classmates, and learning how to work in a team, which feels much more reflective of what it's like in the real world."

- Student Number 16

"I think when using Flippity.net, students can improve their self-directed learning. Meaning that they can study in their own space, they can understand real-life problems at their own pace. And by using this, the students will also improve their critical thinking, engagement, collaboration, and as well as creativity."

- Student Number 11

Moreover, while students acknowledged the benefits of using Flippity.net in their learning process, they also pointed out several challenges and limitations they encountered during its use. These concerns were articulated as follows:

"Setting up Google Sheets to input data and following the publishing steps were confusing and difficult. Sometimes, even a small mistake caused the activity to fail, and ensuring the accuracy of the input and output was challenging."

- Student Number 29

"Using gadgets like phones or desktops was necessary, but this made access hard for some of us, especially when links didn't work or crashed. Also, because Flippity.net makes content so easily accessible, I sometimes found myself copying information instead of truly understanding and processing it."

- Student Number 06

Despite the challenges faced by the students in using flippity.net, they also argued that:

"Despite the flaws and struggles like Flippity crashing due to mobile or internet issues, especially with Google Sheets, I believe these challenges do not outweigh its benefits. Flippity offers better engagement, is more interactive and collaborative, and encourages teamwork through various activities. It turns lessons into games and challenges, making concepts easier to understand and increasing participation. Of course, this depends on each student's comfort level, but for me, it truly ignited better learning."

- Student Number 32

Traditional Methods vs. Flippity.net-Supported Learning

Student responses revealed distinct differences in their approach, understanding, and engagement with the subject matter between phases without and with the intervention. They reflected on notable differences in their learning experiences, highlighting how the use of Flippity.net altered their ability to grasp concepts, sustain interest, and interact with the content more meaningfully:

"I believe that Flippity.net really improved the way of learning because we are not really relying on what the teacher trying to tell us such as the facts or what not, but it also encourages us to think critically because we are trying to solve these certain issues or complex within the environment or certain topic."

- Student Number 32

"It also ignites the spirit of curiosity where we answer some questions therefore giving us the

evaluation of to be more open-minded in certain causes such as like sex education and same sex marriage."

- Student Number 4

"While in Flippity.net, it really enhances like real-life situations. I think there is collaboration of like games. With all those being said, it enhances our creativity, which encourages broader participation and deeper exploration of the topic. And most importantly, there was an engagement in the student-centered learning environment."

- Student Number 10

Furthermore, students consistently expressed that being exposed to real-life problems and contemporary issues provided a more meaningful and profound educational experience compared to traditional methods of teaching. Their insights emphasized that the intervention not only made lessons more relevant and engaging but also encouraged deeper reflection and application of knowledge to authentic situations:

"We can have these foundational skills that challenge the brain. It puts the students in the driver's seat, we can explore what we want to explore, and we become much more curious. With the problem presented, we can create a web of understanding in which we can connect our thoughts and have more conclusions than what you are planning to teach us."

- Student Number 11

The Focus Group Discussion (FGD) revealed that students found the process of identifying causes and effects, proposing solutions to problems, and presenting their findings using Flippity.net to be transformative in how they engaged with learning. This approach deepened their understanding of content, encouraged critical thinking, and fostered the practical application of knowledge.

Students noted that presenting their work through Flippity.net did not merely serve as a medium for sharing answers but became a creative platform that required them to process information more deeply. Flippity.net's interactive nature, combined with the problem-centered tasks, motivated them to be more reflective on how they approached each topic. Hence, they felt more equipped to dive into complex issues, dissect problems, and formulate solutions grounded in evidence and reasoning.

Furthermore, many students reported that the process significantly enhanced their collaborative skills. Working in groups to explore social issues and present findings cultivated an environment of shared responsibility and mutual learning. This experience improved not only their academic understanding but also their interpersonal communication and teamwork—skills essential in and beyond the classroom.

Many also noted an increase in self-confidence. Contributing meaningfully to group outputs and successfully presenting their findings gave them a stronger sense of capability and engagement in their learning process. Overall, the integration of Flippity.net helped make learning more meaningful, collaborative, and empowering.

IV. Conclusion and Recommendations

This study concluded that Flippity.net is an effective educational technology tool for enhancing selected cognitive skills in *Araling Panlipunan*, particularly in the areas of memory recall, comprehension, and innovative thinking. These improvements were attributed to the platform's gamified learning features, self-directed activities, and creative formats that successfully stimulated student interest, engagement, and participation. Its ability to reinforce foundational knowledge through interactive and accessible tools positions it as a valuable resource in today's 21st-century learning environment.

However, the research also revealed that analytical and critical thinking skills remained stagnant or slightly declined during the intervention. This suggests that while Flippity.net effectively supports lower-order cognitive processes, it may not sufficiently cultivate deeper and more evaluative skills when used in isolation. Higher-order thinking requires structured, reflective, and problem-centered approaches, which may go beyond the platform's current capabilities. Additionally, challenges related to digital accessibility, platform setup, and the lack of real-time collaborative features highlight the importance of teacher facilitation and careful instructional design.

In light of these findings, several recommendations are proposed to maximize the tool's educational value. First, Flippity.net should be integrated with higher-order instructional strategies such as debates, simulations, reflective journaling, and case analyses to deepen students' analytical and evaluative thinking. Second, capacity-building sessions for both teachers and students should be conducted to ensure effective and confident use of the platform, including training on Google Sheets, activity creation, and alignment with Bloom's Taxonomy. Third, to promote digital equity, schools should strive to provide access to devices and internet connectivity, and offer offline or printed alternatives where needed. Fourth, since Flippity.net lacks built-in collaboration features, educators are encouraged to supplement activities with group discussions or collaborative tools to enhance social learning and teamwork. Fifth, the use of ongoing feedback and reflective assessments is recommended to keep instructional practices responsive and aligned with learners' evolving needs. Finally, students should be encouraged to co-create Flippity.net activities, which not only develops their digital literacy but also nurtures creativity, autonomy, and ownership of learning.

By implementing these recommendations, educators can expand the benefits of Flippity.net beyond basic recall and understanding, and foster a well-rounded development of students' cognitive skills. When thoughtfully integrated with sound pedagogical strategies, digital tools like Flippity.net can transform the classroom into an engaging, equitable, and intellectually stimulating environment that prepares learners to think critically, act responsibly, and engage meaningfully with real-world issues.

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