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ENGAGEMENT IN USING EDUCATIONAL TECHNOLOGY (EDTECH) INSTRUCTION AND ACADEMIC PERFORMANCE IN ENGLISH OF GRADE 6 LEARNERS: FOUNDATION FOR AN ENHANCED EDTECH INSTRUCTIONAL PROGRAM

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ABSTRACT

The use of educational technology (EdTech) in instruction has been recognized for its potential to enhance learning. However, its impact on elementary learners' engagement and academic performance requires further study. This study aimed to determine the engagement in using EdTech instruction and the academic performance in English of Grade 6 learners in Masinloc Central Elementary School, Masinloc District, Schools Division of Zambales, during the School Year 2024-2025. A quantitative-descriptive research design was used, involving 142 Grade 6 learners through total population sampling. A validated researcher-designed questionnaire measured engagement in EdTech instruction ($\alpha = .99$) and academic performance in English ($\alpha = .90$). Findings showed that most learners were 11 years old, predominantly female, had two siblings, belonged to families with a monthly income of P20,000 to P39,999, spent 2.0 to 2.9 hours daily using technology, and studied English for less than 1.0 hour per day. Learners frequently engaged in multimedia integration, interactive presentations, online activities, and flipped classrooms. Their academic performance in English was very satisfactory. No significant differences were found in engagement based on age, sex, income, and time spent using technology, but significant differences were observed based on the number of siblings and study time. A strong positive correlation was found between engagement in EdTech instruction and academic performance. An enhanced EdTech instructional program was developed to improve engagement and learning outcomes. This study provides empirical evidence on EdTech's role in academic performance, guiding the development of technology-based instructional programs in elementary education.

Keywords: Engagement, Using Educational Technology Instruction, Academic Performance, English, Grade 6 Learners.

1. INTRODUCTION

The integration of Educational Technology (EdTech) has become a pivotal element in enhancing teaching and learning processes, especially in English language instruction. As Grade 6 learners navigate an increasingly digital landscape, their engagement with technology-based instructional tools can significantly impact their academic performance in English. However, the extent to which EdTech influences learners' outcomes in this subject area remains a crucial question for teachers. This study aims to examine the relationship between engagement in using EdTech and the academic performance in English of Grade 6 learners, providing a foundation for developing an enhanced EdTech instructional program tailored to their needs.

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The reviewed literature emphasizes the multifaceted role of EdTech in enhancing learners' academic performance, particularly in English. Johnson (2022) highlighted that EdTech alone cannot drive educational transformation, emphasizing the need for integrated approaches that involve teacher support and strategic implementation. Lynch et al. (2022) discussed the inclusive potential of EdTech, especially for learners with disabilities, though its effectiveness in low- and middle-income countries remains underexplored. Durog (2023) pointed out that while EdTech can empower Filipino learners, challenges such as limited access during remote learning need to be addressed. Collectively, these studies underscore that EdTech's success in improving academic performance hinges on overcoming access barriers and enhancing its practical application in diverse contexts.

Further, studies by Spector et al. (2023) and Deacon et al. (2022) investigated the applications of EdTech across professional fields and educational institutions, emphasizing its broad potential when supported by organizational frameworks. Kowitlawakul et al. (2022) found that EdTech enhances engagement and motivation, particularly in collaborative and problem-solving activities. Salhab and Daher (2023) identified that mobile learning engages learners on multiple dimensions, including cognitive and emotional aspects. In summary, the literature suggests that well-designed, interactive, and learner-centered EdTech tools can significantly enhance learner engagement and contribute to better academic outcomes in English.

Despite the extensive research on the impact of EdTech on academic performance, limited studies had focused specifically on its influence on quarterly assessments as a dimension of learners' academic achievement in English, particularly at the Grade 6 level. Additionally, while previous studies explored various engagement factors, they did not fully address how consistent interaction with technology-based tools correlates with specific assessment outcomes. This gap in the literature underlines the need to examine the relationship between engagement in using EdTech and academic performance in English, thereby providing a foundation for developing an enhanced instructional program tailored to the unique needs of Grade 6 learners.

2. STATEMENT OF THE PROBLEM

This study determined the engagement in using EdTech instruction and academic performance in English of Grade 6 learners in Masinloc Central Elementary School, Masinloc District, Schools Division of Zambales, during the School Year 2024-2025.

Specifically, it sought to answer these questions:

1. How may the profile of the learners be described in terms of:
    1.1. age;
    1.2. sex;
    1.3. number of siblings;
    1.4. monthly family income;
    1.5. daily number of hours spent using technology at home: and
    1.6. daily number of hours spent studying English at home?
2. How may the engagement in using EdTech instruction of the learners be described in terms of:
    2.1. multimedia integration;
    2.2. interactive presentations;
    2.3. online activities; and
    2.4. flipped classroom?

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3. How may the academic performance in English of learners be described in terms of:
    3.1. written works:
    3.2. performance tasks; and
    3.3. quarterly assessment?
4. Is there a significant difference between the engagement in using EdTech instruction of learners and their profile when grouped accordingly?
5. Is there a significant correlation between the engagement in using EdTech instruction of learners and their academic performance in English?
6. What enhanced EdTech instructional program can be developed to improve the engagement in using EdTech instruction and academic performance in English of Grade 6 learners?

3. METHODS AND MATERIALS

This study determined the engagement in using EdTech instruction and academic performance in English of Grade 6 learners in Masinloc Central Elementary School, Masinloc District, Schools Division of Zambales, during the School Year 2024-2025. A quantitative-descriptive research design was employed, with data collected, classified, summarized, and analyzed using percentages and means. The study involved 142 Grade 6 learners in a public elementary school, utilizing total population sampling to involve all Grade 6 learners. A researcher-designed questionnaire served as the primary data collection tool, targeting dimensions of the engagement in using EdTech instruction and academic performance in English of Grade 6 learners. The instrument demonstrated excellent reliability, as confirmed by Cronbach's Alpha values for the engagement in using EdTech instruction ($\alpha = 0.99$) and the academic performance in English ($\alpha = 0.90$). Statistical analyses, including the Kruskal-Wallis Test, and Spearman Rho Correlation, were used to test the study's hypotheses.

4. RESULTS AND DISCUSSIONS

4.1. Profile of Learners

4.1.1. Age

Table 1

Frequency and Percentage Distribution of the Profile of Learners in terms of Age

Age	Frequency	Percentage
11 years old	61	42.96
12 years old	50	35.21
13 years old	20	14.08
14 years old	11	7.75
Total	**142**	**100.00**

Table 1 presents the age distribution of the learners. The table showed the number and percentage of learners belonging to different age groups.

The table revealed that among the 142 learners, 61 (42.96%) were 11 years old, followed by 50 (35.21%) who were 12 years old. Additionally, 20 (14.08%) were 13 years old, while the smallest group consisted of 11 learners (7.75%) aged 14 years old. These figures indicated that the majority of learners were within the expected age range for their grade level, while a small percentage were older.

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The highest frequency and percentage belonged to the 11-year-old learners (42.96%), signifying that most students were at the appropriate age for their grade. This finding implied that learners followed the standard age progression, which could positively impact their academic performance and engagement.

The results of this study aligned with the findings of Irvine et al. (2021), who examined the age distribution of learners and its effects on academic achievement. Both studies emphasized that being within the expected age range contributed to learners' ability to cope with academic demands. This similarity reinforced the importance of age-appropriate learning interventions in ensuring student success.

4.1.2. Sex

Table 2

Frequency and Percentage Distribution of the Profile of Learners in terms of Sex

Sex	Frequency	Percentage
Male	70	49.30
Female	72	50.70
Total	**142**	**100.00**

Table 2 shows the distribution of learners based on their sex. The table showed the number and percentage of male and female learners.

The table revealed that out of 142 learners, 72 (50.70%) were female, while 70 (49.30%) were male. The distribution showed a nearly equal number of male and female learners, with a slight predominance of female learners. This indicated that both sexes were almost equally represented in the study.

The highest frequency and percentage belonged to female learners (50.70%), indicating a slight dominance of females in the population. This finding implied that female learners slightly outnumbered their male counterparts, which could have implications for classroom dynamics and engagement in academic activities.

The results of this study aligned with the findings of Surapaneni (2023), who examined the sex distribution of learners and its impact on learning participation. Both studies emphasized that a balanced representation of male and female learners contributed to an inclusive and diverse learning environment. This reinforced the importance of gender-responsive teaching strategies to cater to the needs of both sexes.

4.1.3. Number of Siblings

Table 3

Frequency and Percentage Distribution of the Profile of Learners in terms of Number of Siblings

Number of Siblings	Frequency	Percentage
No sibling	17	11.97
1 sibling	34	23.94
2 siblings	42	29.58
3 siblings	25	17.61
4 siblings	9	6.34
5 siblings	5	3.52

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6 siblings and above	10	7.04
Total	**142**	**100.00**

Table 3 illustrates the distribution of learners based on how many siblings they had. The table showed the number and percentage of learners with varying numbers of siblings.

The table revealed that out of 142 learners, 42 (29.58%) had 2 siblings, followed by 34 (23.94%) with 1 sibling. Additionally, 25 (17.61%) had 3 siblings, while 17 (11.97%) had no siblings. A smaller percentage of learners had 4 siblings (6.34%), 5 siblings (3.52%), and 6 or more siblings (7.04%). These figures indicated that most learners came from families with 1 to 3 children.

The highest frequency and percentage belonged to learners with 2 siblings (29.58%), suggesting that a significant portion of learners grew up in moderately sized families. This finding implied that learners with fewer siblings might receive more focused parental support, which could positively impact their academic performance and well-being.

The results of this study aligned with the findings of Mashiach and Davidovich (2023), who examined the relationship between family size and learners' academic engagement. Both studies emphasized that learners from smaller families tended to receive more individualized attention and resources. This reinforced the importance of understanding family background in designing educational interventions that cater to diverse learner needs.

4.1.4. Monthly Family Income

Table 4

Frequency and Percentage Distribution of the Profile of Learners in terms of Monthly Family Income

Monthly Family Income	Frequency	Percentage
P19,999 and below	33	23.24
P20,000 to P39,999	47	33.10
P40,000 to P59,999	15	10.56
P60,000 to P79,999	22	15.49
P80,000 to P99,999	8	5.63
P100,000 to P119,999	5	3.52
P120,000 and above	12	8.45
Total	**142**	**100.00**

Table 4 demonstrates the financial background of learners' families. The table showed the number and percentage of learners based on different income brackets.

The table revealed that out of 142 learners, 47 (33.10%) belonged to families earning P20,000 to P39,999 per month, followed by 33 (23.24%) whose families earned P19,999 and below. Additionally, 22 (15.49%) had a monthly family income between P60,000 and P79,999, while 15 (10.56%) belonged to families earning P40,000 to P59,999. A smaller percentage of learners came from families earning P80,000 to P99,999 (5.63%), P100,000 to P119,999 (3.52%), and P120,000 and above (8.45%). These figures indicated that most learners came from lower to middle-income families.

The highest frequency and percentage belonged to families earning P20,000 to P39,999 (33.10%), suggesting that a significant portion of learners came from households with modest financial means. This finding implied that financial constraints might influence learners' access to

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educational resources, which could impact their academic performance and overall learning experience.

The results of this study aligned with the findings of Mirabel et al. (2022), who examined the relationship between family income and academic success. Both studies emphasized that learners from lower-income households often faced financial limitations that affected their educational opportunities. This reinforced the importance of providing financial aid programs and resource support to ensure equitable learning experiences for all students.

4.1.5. Daily Number of Hours Spent Using Technology at Home

Table 5

Frequency and Percentage Distribution of the Profile of Learners in terms of Daily Number of Hours Spent Using Technology at Home

Daily Number of Hours Spent Using Technology at Home	Frequency	Percentage
Less than 1.0 hour	16	11.27
1.0 to 1.9 hours	38	26.76
2.0 to 2.9 hours	49	34.51
3.0 to 3.9 hours	18	12.68
4.0 to 4.9 hours	6	4.23
5.0 hours and above	15	10.56
Total	**142**	**100.00**

Table 5 showcases the learners' daily technology usage. The table showed the number and percentage of learners based on the time they spent using technology at home.

The table revealed that out of 142 learners, 49 (34.51%) spent 2.0 to 2.9 hours using technology daily, followed by 38 (26.76%) who spent 1.0 to 1.9 hours. Additionally, 18 (12.68%) used technology for 3.0 to 3.9 hours, while 16 (11.27%) spent less than 1.0 hour. A smaller percentage of learners used technology for 4.0 to 4.9 hours (4.23%) and 5.0 hours and above (10.56%). These figures indicated that most learners used technology at home for about 1 to 3 hours daily.

The highest frequency and percentage belonged to learners who spent 2.0 to 2.9 hours on technology (34.51%), suggesting that moderate technology use was common among learners. This finding implied that technology played a significant role in their daily activities, potentially influencing their academic engagement and learning habits.

The results of this study aligned with the findings of Major et al. (2021), who examined the effects of daily technology use on learners' academic performance. Both studies emphasized that moderate technology use could be beneficial for learning when properly managed. This reinforced the importance of guiding learners toward productive technology use to enhance their educational experiences.

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4.1.6. Daily Number of Hours Spent Studying English at Home

Table 6

Frequency and Percentage Distribution of the Profile of Learners in terms of Daily Number of Hours Spent Studying English at Home

Daily Number of Hours Spent Studying English at Home	Frequency	Percentage
Less than 1.0 hour	49	34.51
1.0 to 1.9 hours	38	26.76
2.0 to 2.9 hours	15	10.56
3.0 to 3.9 hours	18	12.68
4.0 to 4.9 hours	6	4.23
5.0 hours and above	16	11.27
Total	**142**	**100.00**

Table 6 represents the learners' study habits concerning the English subject. The table showed the number and percentage of learners based on the time they spent studying English at home.

The table revealed that out of 142 learners, 49 (34.51%) spent less than 1.0 hour studying English daily, followed by 38 (26.76%) who studied for 1.0 to 1.9 hours. Additionally, 18 (12.68%) dedicated 3.0 to 3.9 hours to studying English, while 15 (10.56%) studied for 2.0 to 2.9 hours. A smaller percentage of learners spent 4.0 to 4.9 hours (4.23%) and 5.0 hours and above (11.27%) studying English at home. These figures indicated that most learners spent a limited amount of time reviewing English outside the classroom.

The highest frequency and percentage belonged to learners who studied English for less than 1.0 hour (34.51%), suggesting that a significant portion of students devoted minimal time to English practice. This finding implied that learners might need additional motivation or structured study plans to enhance their language proficiency.

The results of this study aligned with the findings of Giladi et al. (2021), who examined the relationship between study habits and language proficiency. Both studies emphasized that students who allocated more time to studying English at home exhibited better comprehension and language skills. This reinforced the importance of encouraging consistent English study habits to improve academic performance.

4.2. Engagement in Using EdTech Instruction of Learners

4.2.1. Multimedia Integration

Table 7

Mean Rating and Interpretations of the Engagement in Using EdTech Instruction of Learners in terms of Multimedia Integration

Item	Indicators	Mean Rating	Interpretation
1	I watch videos during lessons to understand new topics better.	2.73	Frequently Engaged
2	I listen to audio stories that help me learn new English words.	2.68	Frequently Engaged

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3	I use digital flashcards to practice my vocabulary words.	2.65	Frequently Engaged
4	I play educational games that help me practice reading and spelling.	2.70	Frequently Engaged
5	I sing along with songs that teach me grammar and sentence patterns.	2.71	Frequently Engaged
6	I click on pictures or icons in interactive lessons to find more information.	2.63	Frequently Engaged
7	I answer questions in quizzes after watching short learning clips.	2.73	Frequently Engaged
8	I follow along with animated stories that show me how to read with expression.	2.67	Frequently Engaged
9	I choose the correct answers in interactive activities using the tablet or computer.	2.68	Frequently Engaged
10	I type simple sentences on a digital platform to practice my writing skills.	2.68	Frequently Engaged
	General Mean Rating	**2.69**	**Frequently Engaged**

Table 7 exhibits the learners' engagement levels in using multimedia tools for learning. The results indicated how frequently learners interacted with various digital resources, such as videos, audio stories, educational games, and interactive activities.

The mean ratings ranged from 2.63 to 2.73, all interpreted as "Frequently Engaged." The highest mean rating of 2.73 was recorded in two indicators: "I watch videos during lessons to understand new topics better" and "I answer questions in quizzes after watching short learning clips." The general mean rating of 2.69 also fell under the interpretation of "Frequently Engaged," signifying that learners consistently used multimedia in their EdTech instruction.

The indicator with the highest mean rating suggested that learners relied heavily on video-based instruction and post-lesson quizzes to reinforce their learning. This implied that multimedia integration, particularly video resources, played a significant role in enhancing comprehension and retention. The findings supported the importance of incorporating visual and interactive elements in digital instruction to sustain learner engagement.

The present study aligned with the findings of Waang (2023), who emphasized the role of multimedia tools in increasing student participation and comprehension. Similar to the previous study, the results confirmed that learners actively engaged in EdTech instruction through various multimedia formats. This consistency suggested that integrating digital tools remained a crucial strategy in fostering interactive and meaningful learning experiences.

4.2.2. Interactive Presentations

Table 8

Mean Rating and Interpretations of the Engagement in Using EdTech Instruction of Learners in terms of Interactive Presentations

Item	Indicators	Mean Rating	Interpretation

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1	I answer questions on the screen during interactive lessons.	2.71	Frequently Engaged
2	I drag and drop words to complete sentences in the presentation slides.	2.63	Frequently Engaged
3	I clap or raise my hand when the teacher asks a question using digital tools.	2.75	Frequently Engaged
4	I choose the correct option from the choices given on the interactive slides.	2.68	Frequently Engaged
5	I match pictures with words using the interactive activities shown by the teacher.	2.68	Frequently Engaged
6	I use the digital pointer to show my answer on the screen when asked by the teacher.	2.72	Frequently Engaged
7	I follow along with the teacher's instructions on the screen during activities.	2.71	Frequently Engaged
8	I take turns pressing the screen or clicking the mouse to participate in quizzes.	2.63	Frequently Engaged
9	I share my ideas by speaking up when the teacher asks for answers during the presentation.	2.74	Frequently Engaged
10	I give thumbs up or thumbs down when the teacher asks for feedback during the digital lesson.	2.67	Frequently Engaged
	General Mean Rating	**2.69**	**Frequently Engaged**

Table 8 displays the learners' engagement levels in interactive digital activities. The table reflected how frequently learners participated in lessons through on-screen responses, digital tools, and interactive presentations.

The mean ratings ranged from 2.63 to 2.75, all interpreted as "Frequently Engaged." The highest mean rating of 2.75 was recorded in the indicator "I clap or raise my hand when the teacher asks a question using digital tools." The general mean rating of 2.69, also interpreted as "Frequently Engaged," indicated that learners actively responded to interactive presentations using digital platforms.

The highest-rated indicator suggested that learners were most engaged when participating physically, such as clapping or raising their hands in response to digital prompts. This finding implied that incorporating interactive elements that encourage movement and verbal responses helped sustain learners' focus and enthusiasm. It highlighted the importance of combining digital engagement with active participation strategies.

The present study aligned with the findings of Zimu (2024), who emphasized that student interaction in technology-based instruction enhanced classroom engagement and participation. Similar to the previous study, the results confirmed that learners responded more actively when digital tools were integrated into classroom discussions. This consistency reinforced the effectiveness of interactive presentations in making lessons more engaging and participatory.

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4.2.3. Online Activities

Table 9

Mean Rating and Interpretations of the Engagement in Using EdTech Instruction of Learners in terms of Online Activities

Item	Indicators	Mean Rating	Interpretation
1	I join online quizzes to check my understanding of the lesson.	2.70	Frequently Engaged
2	I watch short educational videos shared by the teacher on learning websites.	2.70	Frequently Engaged
3	I complete online worksheets to practice my reading and grammar skills.	2.72	Frequently Engaged
4	I click on links provided by the teacher to explore more about the topic.	2.67	Frequently Engaged
5	I read stories on the learning platform and answer the questions after.	2.75	Frequently Engaged
6	I type my answers in the chat box during online discussions with my classmates.	2.68	Frequently Engaged
7	I use the online dictionary to find the meaning of new words.	2.70	Frequently Engaged
8	I play learning games on the website to practice spelling and vocabulary.	2.72	Frequently Engaged
9	I write simple sentences or stories in the online writing activity shared by the teacher.	2.72	Frequently Engaged
10	I follow the teacher's instructions to join virtual group activities or tasks.	2.66	Frequently Engaged
	General Mean Rating	**2.70**	**Frequently Engaged**

Table 9 depicts the learners' engagement levels in various online learning tasks. The table showed how frequently learners participated in digital activities such as quizzes, online worksheets, educational videos, and interactive writing exercises.

The mean ratings ranged from 2.66 to 2.75, all interpreted as "Frequently Engaged." The highest mean rating of 2.75 was recorded in the indicator "I read stories on the learning platform and answer the questions after." The general mean rating of 2.70, also interpreted as "Frequently Engaged," indicated that learners actively participated in online activities as part of their EdTech instruction.

The highest-rated indicator suggested that learners were most engaged in reading digital stories and responding to comprehension questions. This implied that integrating online reading materials with follow-up activities encouraged learners to develop their reading skills and critical thinking. It also highlighted the effectiveness of online platforms in enhancing reading comprehension and engagement.

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The present study aligned with the findings of Sahni (2023), who emphasized the significance of online learning tools in improving student engagement and academic performance. Similar to the previous study, the results confirmed that learners benefited from digital resources that provided interactive and self-paced learning experiences. This consistency reinforced the importance of integrating online activities to support learners' reading and language development.

4.2.4. Flipped Classroom

Table 10

Mean Rating and Interpretations of the Engagement in Using EdTech Instruction of Learners in terms of Flipped Classroom

Item	Indicators	Mean Rating	Interpretation
1	I watch videos at home to learn about the new lesson before class.	2.73	Frequently Engaged
2	I take notes on important points from the video shared by the teacher.	2.69	Frequently Engaged
3	I complete simple online tasks or quizzes at home to prepare for the next day's lesson.	2.68	Frequently Engaged
4	I ask my teacher questions about the video when we discuss it in class.	2.70	Frequently Engaged
5	I share what I learned from the video with my classmates during group activities.	2.70	Frequently Engaged
6	I use the worksheets provided by the teacher to practice what I learned at home.	2.64	Frequently Engaged
7	I write down new words from the video and look up their meanings online.	2.76	Frequently Engaged
8	I try to explain the lesson to my classmates when we discuss it in class.	2.68	Frequently Engaged
9	I solve practice exercises at home to get ready for activities in the classroom.	2.68	Frequently Engaged
10	I talk about the video with my parents or siblings to help me understand the lesson better.	2.72	Frequently Engaged
	General Mean Rating	**2.70**	**Frequently Engaged**

Table 10 portrays the learners' engagement levels in pre-class activities using digital resources. The table showed how frequently learners participated in watching videos, taking notes, completing online tasks, and discussing the lesson before classroom instruction.

The mean ratings ranged from 2.64 to 2.76, all interpreted as "Frequently Engaged." The highest mean rating of 2.76 was recorded in the indicator "I write down new words from the video and look up their meanings online." The general mean rating of 2.70, also interpreted as "Frequently Engaged," indicated that learners actively engaged with flipped classroom activities, preparing them for in-class discussions.

The highest-rated indicator suggested that learners were most engaged when expanding their vocabulary through digital videos. This implied that incorporating pre-class video-based

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vocabulary exercises helped enhance language development and comprehension. It also highlighted the role of flipped classroom strategies in fostering independent learning and preparation.

The present study aligned with the findings of Farooqi and Naeem (2023), who emphasized that flipped classroom strategies significantly improved learners' engagement and academic readiness. Similar to the previous study, the results confirmed that pre-class exposure to digital learning materials facilitated deeper understanding and more meaningful classroom interactions. This consistency reinforced the effectiveness of the flipped classroom approach in enhancing learning outcomes.

4.3. Academic Performance in English of Learners

Table 11

Mean and Interpretations of the Academic Performance in English of Learners

Academic Performance in English	Mean	Interpretations
Written Works	3.70	Very Satisfactory
Performance Tasks	3.81	Very Satisfactory
Quarterly Assessment	3.67	Very Satisfactory
General Mean Rating	**3.73**	**Very Satisfactory**

Table 11 highlights the mean and interpretations of the academic performance in English of learners. It showed the results for written works, performance tasks, and quarterly assessments, along with the general mean rating.

The mean ratings ranged from 3.67 to 3.81, all of which were interpreted as "Very Satisfactory." The highest mean rating of 3.81 was recorded for performance tasks, while the lowest was 3.67 for quarterly assessments. The general mean rating of 3.73 also fell under the "Very Satisfactory" category, indicating strong academic performance among learners.

The indicator with the highest mean rating, performance tasks, implied that learners demonstrated their understanding effectively through hands-on and practical activities. This suggested that interactive and experiential learning strategies played a crucial role in their academic success. The findings emphasized the importance of engaging assessments in enhancing learners' English proficiency.

The results of this study aligned with the findings of Adjei et al. (2023), which emphasized that performance-based assessments significantly contributed to learners' academic achievement. Both studies highlighted the effectiveness of active learning strategies in improving English skills. These findings reinforced the need for schools to integrate more performance-based assessments into their curriculum.

4.4. Difference Between the Engagement in Using EdTech Instruction of Learners and Their Profile

4.4.1. Age

Table 12

Difference Between the Engagement in Using EdTech Instruction of Learners and Their Profile in terms of Age

Groups	*H*	*df*	*p*	Decision
11 years old	.75	3	.861	Accept H_{01}

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12 years old 13 years old 14 years old	(Not Significant)

Table 12 presents the difference between learners' engagement in using EdTech instruction based on their age. The table shows the computed H-value, degrees of freedom (df), p-value, and the decision regarding the null hypothesis.

The computed H-value was 0.75 with 3 degrees of freedom. The p-value obtained was 0.861, which was greater than the 0.05 significance level. Thus, the null hypothesis was accepted, indicating no significant difference in learners' engagement in using EdTech instruction across different age groups.

The findings aligned with the study of Kaushik and Agrawal (2021), which also found no significant difference in technology engagement among learners of varying ages. The previous study suggested that factors other than age, such as interest and prior exposure, influenced EdTech engagement. Similarly, the present study implied that age did not play a crucial role in determining learners' use of educational technology.

4.4.2. Sex

Table 13

Difference Between the Engagement in Using EdTech Instruction of Learners and Their Profile in terms of Sex

Groups	*H*	*df*	*p*	Decision
Male Female	.08	1	.782	Accept H_{01} (Not Significant)

Table 13 emphasizes the difference between learners' engagement in using EdTech instruction based on their sex. The table displays the computed H-value, degrees of freedom (df), p-value, and the decision regarding the null hypothesis.

The computed H-value was 0.08 with 1 degree of freedom. The p-value obtained was 0.782, which was greater than the 0.05 significance level. Therefore, the null hypothesis was accepted, indicating no significant difference in learners' engagement in using EdTech instruction between male and female learners.

The results supported the findings of Almusharraf et al. (2023), which also revealed no significant difference in EdTech engagement based on sex. The previous study emphasized that technological engagement depended more on accessibility and learning environment rather than gender. Similarly, the present study suggested that both male and female learners engaged in EdTech instruction at comparable levels.

4.4.3. Number of Siblings

Table 14

Difference Between the Engagement in Using EdTech Instruction of Learners and Their Profile in terms of Number of Siblings

Groups	*MR*	*Eta squared* (η^2)	*H*	*Df*	*p*	Decision
No sibling 1 sibling	69.15 87.26	.31 (Large)	14.87	6	.021	Reject H_{01} (Significant)

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2 siblings	60.02
3 siblings	59.24
4 siblings	96.56
5 siblings	78.90
6 siblings and above	74.50

Table 14 underscores the difference in learners' engagement in using EdTech instruction based on their number of siblings. The table showed the computed MR, eta squared, H, df, p-value, and decision regarding the significance of the difference.

The computed mean rank (MR) values varied across the groups, with an eta squared (η^2) of 0.31, indicating a large effect size. The H-value was 14.87 with a degree of freedom (df) of 6 and a p-value of 0.021, leading to the rejection of the null hypothesis (H01). This result suggested that the number of siblings significantly influenced learners' engagement in using EdTech instruction.

Among the groups, learners with four siblings had the highest mean rank (MR = 96.56), implying that they exhibited the highest engagement in EdTech instruction. This finding suggested that having multiple siblings might contribute to a more collaborative or technology-driven learning environment at home. It also highlighted the potential influence of household dynamics on learners' adaptability to technology-based instruction.

The findings aligned with the study of Azhari et al. (2023), who also reported a significant relationship between family structure and learners' engagement in digital learning. Both studies emphasized that family composition could affect students' learning behaviors and technology utilization. These results further reinforced the need to consider household factors in designing and implementing EdTech-based instructional strategies.

4.4.4. Monthly Family Income

Table 15

Difference Between the Engagement in Using EdTech Instruction of Learners and Their Profile in terms of Monthly Family Income

Groups	*H*	*df*	*p*	Decision
P19,999 and below P20,000 to P39,999 P40,000 to P59,999 P60,000 to P79,999 P80,000 to P99,999 P100,000 to P119,999 P120,000 and above	9.59	6	.143	Accept H_{01} (Not Significant)

Table 15 reveals the difference between learners' engagement in using EdTech instruction based on their monthly family income. The table includes the computed H-value, degrees of freedom (df), p-value, and the decision regarding the null hypothesis.

The computed H-value was 9.59 with 6 degrees of freedom. The p-value obtained was 0.143, which was greater than the 0.05 significance level. As a result, the null hypothesis was accepted, indicating no significant difference in learners' engagement in using EdTech instruction across different income groups.

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The findings aligned with the study of Asher et al. (2024), which also reported no significant difference in EdTech engagement based on family income. The previous study suggested that factors such as school-provided resources and digital literacy skills played a more crucial role than financial status. Similarly, the present study implied that regardless of economic background, learners engaged with EdTech instruction at similar levels.

4.4.5. Daily Number of Hours Spent Using Technology at Home

Table 16

Difference Between the Engagement in Using EdTech Instruction of Learners and Their Profile in terms of Daily Number of Hours Spent Using Technology at Home

Groups	*H*	*df*	*p*	Decision
Less than 1.0 hour 1.0 to 1.9 hours 2.0 to 2.9 hours 3.0 to 3.9 hours 4.0 to 4.9 hours 5.0 hours and above	7.53	5	.184	Accept H_{01} (Not Significant)

Table 16 unfolds the difference between learners' engagement in using EdTech instruction based on their daily number of hours spent using technology at home. The table displays the computed H-value, degrees of freedom (df), p-value, and the decision regarding the null hypothesis.

The computed H-value was 7.53 with 5 degrees of freedom. The p-value obtained was 0.184, which was greater than the 0.05 significance level. Consequently, the null hypothesis was accepted, indicating no significant difference in learners' engagement in using EdTech instruction based on their daily technology use at home.

The results supported the findings of Bancoro (2024), which also found no significant difference in EdTech engagement regardless of daily technology usage. The previous study suggested that engagement was influenced more by the quality of technology use rather than the number of hours spent. Similarly, the present study implied that merely spending more time on technology did not necessarily lead to higher engagement in EdTech instruction.

4.4.6. Daily Number of Hours Spent Studying English at Home

Table 17

Difference Between the Engagement in Using EdTech Instruction of Learners and Their Profile in terms of Daily Number of Hours Spent Studying English at Home

Groups	*MR*	*Eta squared* (η^2)	*H*	*Df*	*p*	Decision
Less than 1.0 hour	61.80	.38	23.82	5	.000	Reject H_{01}
1.0 to 1.9 hours	72.07	(Large)				(Significant)
2.0 to 2.9 hours	111.10					
3.0 to 3.9 hours	50.92					
4.0 to 4.9 hours	82.58					
5.0 hours and above	81.75					

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Table 17 unveils the difference in learners' engagement in using EdTech instruction based on the daily number of hours they spent studying English at home. The table showed the computed mean rank (MR), eta squared, H, df, p-value, and the decision regarding the significance of the difference.

The computed mean rank (MR) values varied across the groups, with an eta squared (η^2) of 0.38, indicating a large effect size. The H-value was 23.82 with a degree of freedom (df) of 5 and a p-value of 0.000, leading to the rejection of the null hypothesis (H01). This result suggested that the number of hours learners spent studying English at home significantly influenced their engagement in using EdTech instruction.

Among the groups, learners who spent 2.0 to 2.9 hours studying English at home had the highest mean rank (MR = 111.10), implying that they exhibited the highest engagement in EdTech instruction. This finding suggested that moderate study durations might enhance learners' interaction with educational technology. It also highlighted the possible role of structured study habits in fostering effective EdTech engagement.

The findings aligned with the study of Heidari et al. (2021), who also reported a significant relationship between study time and digital learning engagement. Both studies emphasized that the amount of time learners dedicate to academic activities at home affects their adaptability to technology-based instruction. These results further reinforced the need to promote balanced study habits to optimize EdTech utilization.

4.5. Correlation Between the Engagement in Using EdTech Instruction of Learners and Their Academic Performance in English

Table 18

Correlation Between the Engagement in Using EdTech Instruction of Learners and Their Academic Performance in English

Dependent Variables	*r*	*p*	Interpretation		Decision
Written Works	.78	.000	Positive Correlation	Strong	Reject H_{02} (Significant)
Performance Tasks	.78	.000	Positive Correlation	Strong	Reject H_{02} (Significant)
Quarterly Assessment	.76	.000	Positive Correlation	Strong	Reject H_{02} (Significant)
Overall	**.79**	**.000**	**Positive Correlation**	**Strong**	**Reject H_{02} (Significant)**

Table 18 clarifies the correlation between learners' engagement in using EdTech instruction and their academic performance in English. The findings revealed a positive strong correlation between the two variables across written works, performance tasks, and quarterly assessments.

The correlation coefficient (r) for written works and performance tasks both reached .78, while quarterly assessment recorded an r-value of .76, all with a p-value of .000. These results indicated a statistically significant positive strong correlation, leading to the rejection of the null hypothesis (H02). This meant that as learners engaged more in EdTech instruction, their performance in English improved significantly.

Overall, the computed correlation coefficient of .79 with a p-value of .000 confirmed a strong positive relationship between EdTech engagement and academic performance in English.

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The significant findings suggested that integrating technology into instruction enhanced learners' comprehension and application of English skills. These results supported the need for more EdTech-driven strategies to further improve academic outcomes.

The present study aligned with the findings of Zolochevskaya et al. (2021), who also reported a strong correlation between EdTech utilization and students' academic performance. Both studies emphasized the effectiveness of technology in fostering improved learning outcomes. This consistency reinforced the argument that EdTech instruction should be continuously integrated into the English curriculum to maximize learners' potential.

4.6. An Enhanced EdTech Instruction Program to Improve the Engagement in Using EdTech Instruction and Academic Performance in English of Grade 6 Learners

This program aims to integrate technology in education while ensuring inclusivity, gender balance, financial accessibility, and digital literacy. From 2025 to 2028, researchers, educators, and policymakers will collaborate to develop age-appropriate strategies, conduct comparative studies, and implement evidence-based interventions. Key areas of focus include analyzing family size impact on engagement, addressing financial constraints in EdTech access, and enhancing critical thinking through technology. Additionally, the program will refine blended learning approaches, improve digital literacy, and assess home environments for flipped learning. Through continuous research, strategic implementation, and policy integration, this initiative seeks to foster an equitable and technology-driven educational ecosystem.

5. CONCLUSIONS

1. The majority of the learners had been 11 years old, had been predominantly female, had two siblings, had belonged to families with a monthly income of P20,000 to P39,999, had spent 2.0 to 2.9 hours daily using technology at home, and had spent less than 1.0 hour studying English at home daily.
2. The learners had frequently engaged in using EdTech instruction, particularly in multimedia integration, interactive presentations, online activities, and flipped classrooms.
3. The learners had attained very satisfactory academic performance in English in terms of written works, performance tasks, and quarterly assessments.
4. There had been no significant difference between the engagement in using EdTech instruction of learners and their profile in terms of age, sex, monthly family income, and daily number of hours spent using technology at home; however, there had been a significant difference in terms of number of siblings and daily number of hours spent studying English at home.
5. A positive strong significant correlation had been found between the engagement in using EdTech instruction of learners and their academic performance in English, particularly written works, performance tasks, and quarterly assessments; thus, the null hypothesis had been rejected.
6. An enhanced EdTech instructional program had been crafted to improve the engagement in using EdTech instruction and academic performance in English of Grade 6 learners.

6. RECOMMENDATIONS

1. Schools should implement targeted interventions to encourage balanced technology use and increased study time in English at home.
2. Teachers should continue integrating multimedia, interactive presentations, online activities, and flipped classrooms to sustain learner engagement in EdTech instruction.

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3. Educators should reinforce existing instructional strategies while exploring innovative approaches to further enhance learners' academic performance in English.
4. Schools should consider individual learner differences, particularly the number of siblings and study time in English, when designing EdTech-based interventions.
5. Teachers should maximize EdTech instruction as a key strategy to improve learners' academic performance in English.
6. Schools should implement the enhanced EdTech instructional program to optimize learner engagement and achievement in English.
7. Further studies on the engagement in using EdTech instruction should explore its long-term impact on learners' academic performance across different subjects and grade levels.

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