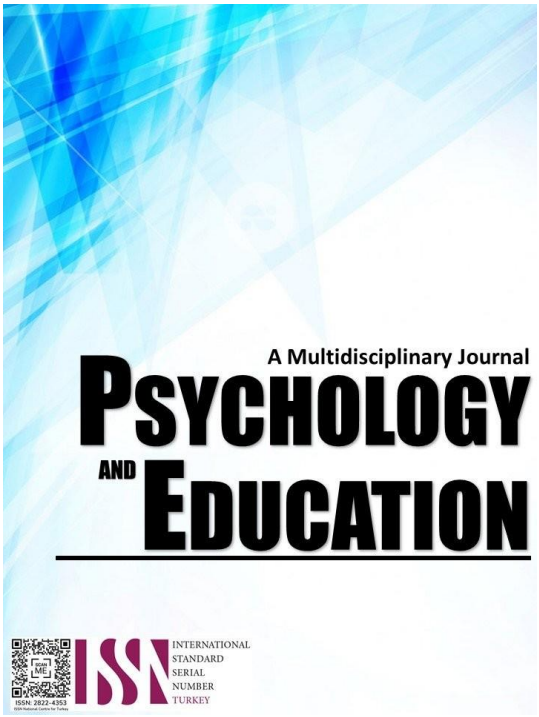
TECHNOLOGY-BASED INSTRUCTION AND MOTIVATED LEARNING STRATEGIES AS PREDICTOR OF STUDENT ENGAGEMENT IN *ARALING PANLIPUNAN*



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Research Article

Technology-Based Instruction and Motivated Learning Strategies as Predictor of Student Engagement in *Araling Panlipunan*

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Abstract

The primary purpose of this study is to investigate the significance of the combined influence of Technology-Based Instruction and Motivated Learning Strategies on student engagement in *Araling Panlipunan.* A survey was conducted to a sample of 124 Grade 6 students from selected elementary schools in the municipality of Mawab, Davao de Oro. A quantitative descriptive correlation method was used in the study. The results of the study indicated that integrating technology-based instruction with motivated learning strategies positively influenced student engagement by enhancing interactive learning experiences and fostering intrinsic motivation. From the results of the study, it was recommended that school should provide teachers the resources and training they need to use technology and motivate students successfully and teachers should embrace technology and student motivation as significant tools for teaching. Furthermore, continued integration of these approaches in *Araling Panlipunan* could sustain and enhance student engagement.

Keywords: *technology-based instructions, motivated learning strategies, student engagement*

Introduction

Student engagement, a key factor in learning, refers to the level of attention, curiosity, and interest students show when being taught. This engagement impacted their academic performance and personal growth. When engaged, students were more likely to participate, ask questions, learn the lessons, and develop needed 21st-century skills. Student engagement equips students for lifelong learning and future endeavors, helping them have higher self-esteem and better attendance, and fostering a positive learning environment. Despite its importance, it is currently at an alarmingly low level (Ribeiro et al., 2023). Students were experiencing a decline in resilience and motivation regardless of the learning context (Sutton, 2021). Sustaining student engagement was complex, requiring consideration of teaching methodologies, students' environments, and other relevant aspects.

A study by Rashi and Malik (2023) in India highlighted that technology-based education positively influenced various aspects of student learning, including engagement, academic achievement, knowledge retention, critical thinking skills, and student motivation. By fostering interactive and immersive learning experiences, TBI had the potential to captivate students' attention, enhance their understanding of concepts, and facilitate the development of higher-order thinking abilities (Rashi & Malik, 2023). Another factor was motivated learning strategies, key determinants of engagement (Crookes, 2018). These strategies influenced engagement and performance, but implementing them was challenging. While addressing extrinsic motivation deficits, the lack of these strategies in some students led to disengagement and difficult learning experiences.

In the Philippines, the problem with student engagement was also present. A Delfino (2019) study demonstrated that technology-based instruction could significantly boost student engagement. However, it could inadvertently lead to increased student disengagement without proper implementation and sufficient support and training. This sentiment was echoed in a study conducted among teachers in Valenzuela City, which found that technology-based instruction profoundly impacted teaching performance, with productivity and professional practice as the main predictors. Yet, without adequate resources, materials, and training, this could potentially intensify student disengagement (Hero, 2019). Moreover, a study by Narca and Caballes (2021) identified several strategies that sparked students' interest. However, without effective motivational activities, maintaining student engagement remained a daunting task.

In some of the public schools in the Municipality of Mawab, Davao de Oro, based on the initial observation of the researcher, a significant lack of student engagement was evident, especially in teaching the Araling Panlipunan subject. Many students appeared disinterested and disengaged from the lesson, with some even dozing off or engaging in unrelated activities. The content seemed disconnected from the students' lived experiences and cultural contexts, making it challenging for them to relate to and find relevance in the material. Consequently, the students' motivation and attention levels were visibly low, hindering their ability to actively participate and meaningfully engage with the subject matter.

While numerous studies have emphasized the vital role of student engagement and the potential advantages of technology-based instruction and motivated learning strategies, despite the potential benefits of these approaches, there remained a significant gap in understanding their specific effects on student engagement, particularly in the context of Araling Panlipunan in Mawab, Davao de Oro. Addressing this research gap could provide valuable insights and practical strategies to rekindle student interest, motivation, and active participation in Araling Panlipunan. Ultimately, enhancing engagement in this subject was key to fostering a deeper understanding and appreciation of Philippine history, culture, and social issues, thereby empowering students to become more informed and engaged citizens.

Research Questions

This study aimed to determine the significance of the combined influence of Technology-Based Instruction and Motivated Learning Strategies on Student Engagement in Araling Panlipunan. Specifically, this sought answers to the following questions:

1. What is the extent of Technology-Based Instruction in terms of:
    1.1. ease of use;
    1.2. peer interaction;
    1.3. perceived usefulness;
    1.4. learner satisfaction; and
    1.5. virtual learning?
2. What is the extent of Motivated Learning Strategies of students in terms of:
    2.1. cognitive strategy use;
    2.2. intrinsic value;
    2.3. self-efficacy; and
    2.4. self-regulation?
3. What is the Level of Student Engagement in terms of:
    3.1. behavioral engagement;
    3.2. cognitive engagement; and
    3.3. emotional engagement?
4. Are the variables of Technology-Based Instruction and Motivated Learning Strategies predictor to Student Engagement?

Methodology

Research Design

This study employed a descriptive correlational research design to investigate the influence of technology-based instruction and motivated learning strategies on student engagement in Araling Panlipunan. The descriptive aspect of the research involved collecting quantitative information that could be tabulated along a continuum in numerical forms (Glass & Hopkins, 1984). Specifically, it determined the extent of technology-based instruction in terms of ease of use, perceived usefulness, peer interaction, learner satisfaction, and virtual learning. Additionally, it assessed the extent of motivated learning strategies employed by students, such as self-efficacy, intrinsic value, cognitive strategy use, and self-regulation. Furthermore, the descriptive component measured the levels of student engagement, encompassing behavioral, cognitive, and emotional dimensions.

This design enabled the researcher to ascertain whether an increase or decrease in the utilization of technology-based instruction or motivated learning strategies corresponded to an increase or decrease in student engagement levels.

Respondents

The respondents of this study were all Grade 6 students enrolled in public elementary schools within the Municipality of Mawab, Davao de Oro, for the school year 2023-2024. The sampling technique that was utilized was universal sampling, wherein the entire population of Grade 6 students from the selected public elementary schools in the municipality was included in the study.

The public elementary schools from which the respondents were drawn were under the jurisdiction of the Mawab Division of the Department of Education. By employing universal sampling, the study aimed to capture the perspectives and experiences of the complete Grade 6 student population within the municipality, ensuring comprehensive representation and minimizing the potential for sampling bias.

Universal sampling was appropriate for this study as the population of Grade 6 students in public elementary schools within Mawab was of a manageable size. Including the entire population provided a comprehensive understanding of the relationships between technology-based instruction, motivated learning strategies, and student engagement levels within the local educational context. This approach eliminated the need for sample size calculations and allowed for the generalization of findings to the target population with increased precision and confidence.

Table 1. *Number of Respondents per School*

Name of Schools	*Number of Students*
	Total
Saosao Integrated School	28
Bawani Elementary School	21
Tabon-Tabon Elementary School	14
Tan-wan Integrated School	6
Malinawon Elementary School	55
Total	124

Instrument

This study utilized three (3) adopted research instruments from various authors to obtain the most comprehensive and accurate result namely; Task Based Instruction Questionnaire, Motivated Strategies for learning Questionnaire and Student Engagement Questionnaire.

Task Based Instruction Questionnaire. The independent variable of this study adopted the questionnaire from Das et al. (2019). This questionnaire was contextualized to get the best result from the study. The questionnaire had a total of 28 items that were divided into 5 dimensions namely; Perceived ease of use (4 items), Peer interaction (7 items), Perceived Usefulness (4 items), Learner Satisfaction (8 items), and Virtual Learning (5 items).

Motivated Strategies for Learning. The instrument for the independent variable is adopted from Motivated Strategies for Learning Questionnaire (MSLQ) as developed by Pintrich and De Groot (1990). This questionnaire in its original form consists of six factors comprising 31 items in total. The factors are Cognitive Strategy Use (8 items), Intrinsic Value (7 items), Self-Efficacy (7 items), and self-regulation (9 items).

Student Engagement Questionnaire. The instrument used in measuring student engagement of the students was adopted from the study of Defino (2019). The questionnaire was designed to assess the extent of engagement, encompassing three dimensions of engagement: behavioral, emotional, and cognitive. Each dimension was evaluated through various indicators, such as participation in class discussions, application of course materials to personal life, and desire to learn the material. There were 19 items in total for the SEQ. The questions were divided into the following dimensions: Behavioral Engagement (8 items), Emotional Engagement (5 items) and Cognitive Engagement (6 items).

Procedure

A proper protocol was followed before and during the collection of data for this study on technology-based instruction, motivated learning strategies, and their role as predictors of student engagement in Araling Panlipunan among elementary students from various schools in Mawab district.

Seeking Permission to Conduct the Study. The researcher wrote letters requesting permission to conduct the study to the Schools Division Superintendent of the Division of Davao de Oro and the principals of the participating elementary schools in the Mawab district. Upon receiving confirmation and approval from the relevant authorities, the researcher proceeded to obtain informed assent from the identified student respondents.

Obtaining Informed Assent. Before administering the questionnaires, the researcher ensured that all student respondents provided informed assent. This process involved explaining the purpose and nature of the study, the voluntary nature of participation, and the measures in place to protect the students' privacy and confidentiality. The students were allowed to ask questions and address any concerns they had. Only after obtaining signed informed assent and consent forms from the students did the researcher administer the questionnaires.

Administering the Questionnaires. The researcher personally administered the questionnaires to the identified students. This was done in coordination with the teachers in charge of the respective classes. Clear explanations of the questionnaire items were provided to ensure comprehensive understanding, and the students were given ample time to complete the questionnaires.

Data Gathering. After the students completed the questionnaires, the researcher gathered and encoded all the data into a personal computer. The complete dataset was then submitted to a statistician for statistical computation and analysis. Subsequently, the researcher analyzed and interpreted the results for discussion and reporting in the study.

Data Analysis

The results of this study were analyzed and interpreted accordingly, utilizing the following appropriate statistical tools:

Mean. Also known as an arithmetic mean, this value helped summarize entire sets of numbers. This statistical tool was used to measure the extent of technology-based instruction, motivated learning strategies, and student engagement. Specifically, this tool was used to answer the research questions in 1, 2, and 3.

Standard Deviation. A standard deviation is a statistic that measures the dispersion of a dataset relative to its mean. This statistical tool was used to quantify how much the scores for technology-based instruction, motivated learning strategies, and student engagement were spread out or close to the mean. This was used to answer the research questions in 1, 2, and 3.

Pearson r. The Pearson product-moment correlation, commonly called Pearson r, is the most widely used measure of correlation. This statistical tool was used to determine the significant relationships between technology-based instruction and student engagement and between motivated learning strategies and student engagement. This was used to answer research question no. 4.

Regression Analysis. Regression analysis is a set of statistical processes for estimating the relationships between a dependent variable and one or more independent variables. This statistical tool was used to determine whether technology-based instruction and motivated

learning strategies were predictors of student engagement in Araling Panlipunan. This was used to answer research question no. 4.

Results and Discussion

The Level of Technology-Based Instruction

Included in technology-based instruction are ease of use, peer interaction, perceived usefulness, learner satisfaction, and virtual learning.

Ease of Use. Table 2 shows the level of technology-based instruction in terms of ease of use.

Table 2. *Ease of Use*

Item	*Mean*	*Descriptive Equivalent*
1. Learning to use technology-based instruction in Araling Panlipunan is easy for me.	3.4	Agree
2. I find it easy to utilize technology-based instruction in the way I want for learning Araling Panlipunan.	3.4	Agree
3. I find technology-based instruction easy to use in my Araling Panlipunan class.	3.5	Strongly Agree
4. It is easy for me to become skilled at using technology-based instruction for Araling Panlipunan.	2.9	Agree
Weighted Mean	3.3	Agree

Table 2 shows that the overall weighted mean score of technology based instruction in terms of ease of use is 3.3, which suggests that the technology-based instruction approach is effective, with positive perceptions or agreement from participants and it indicates that TBI is easy to use. And indicator 3 stands out among all the indicators with a descriptive equivalent "Strongly Agree", signifying a high level of ease of use for that particular aspects.

Peer Interaction. Table 3 shows the level of technology-based instruction in terms peer interaction.

Table 3. *Peer Interaction*

Item	*Mean*	*Descriptive Equivalent*
1. I find it easy to interact with my classmates during our Araling Panlipunan lessons.	3.3	Agree
2. I was able to participate actively in class discussions about Araling Panlipunan topics.	3.5	Strongly Agree
3. I learned a lot from the insights and perspectives shared by my classmates.	3.5	Strongly Agree
4. Our teacher encouraged frequent interaction and discussions among students.	3.7	Strongly Agree
5. As the class progressed, I became more comfortable interacting with my classmates through the help of technology-based instruction.	3.3	Agree
6. The quality of our class discussions on Araling Panlipunan topics was consistently high.	3.5	Strongly Agree
7. I could easily follow and understand the class discussions related to Araling Panlipunan.	3.1	Agree
Weighted Mean	3.4	Agree

The overall weighted mean score for peer interaction is 3.4, indicating general agreement that Technology-Based Instruction facilitates effective peer interaction. Also it indicates that students have a positive experiences and feel at ease interacting with their classmates during class discussions.

Indicator 4 got the highest mean score of 3.7 with the descriptive equivalent "Strongly Agree". This suggest that the students strongly agree with the statements that their teacher encouraged frequent interaction and discussion.

Perceived Usefulness. Table 4 shows the level of technology-based instruction in terms of perceived usefulness.

Table 4. *Perceived Usefulness*

Item	*Mean*	*Descriptive Equivalent*
1. Using technology-based instruction would enhance my effectiveness in learning Araling Panlipunan concepts and skills.	3.6	Strongly Agree
2. Incorporating technology-based instruction would improve my performance in Araling Panlipunan coursework.	3.4	Agree
3. I find technology-based instruction useful for my learning in the Araling Panlipunan subject.	3.5	Strongly Agree
4. Utilizing technology-based instruction in Araling Panlipunan would increase my productivity in completing assignments and tasks.	3.5	Strongly Agree
Weighted Mean	3.5	Strongly Agree

Table 4 shows the results of a study on the perceived usefulness of technology- based instruction in Araling Panlipunan. It is shown in the table that perceived usefulness got the overall weighted mean score of 3.5 signifying strong agreement that technology-based instruction is highly effective, with strong positive perceptions from participants. Indicator 1 got the highest mean score of 3.6 with the descriptive equivalent "Strongly Agree". It shows that students believe that technology-based instruction is effective in enhancing their skills and performance and they perceived technology-based instruction as a valuable instrument for their learning in Araling Panlipunan.

Learner Satisfaction. Table 5 shows the level of technology-based instruction in terms of learner satisfaction.

Table 5. *Learner Satisfaction*

Item	*Mean*	*Descriptive Equivalent*
1. I am satisfied with the use of technology-based instruction in my Araling Panlipunan class.	3.5	Strongly Agree
2. If I had an opportunity to use technology-based instruction in any other subject, I would gladly do so.	3.4	Agree
3. My choice to use technology-based instruction in Araling Panlipunan was a wise one.	3.3	Agree
4. I am very satisfied with the technology-based instruction used in Araling Panlipunan.	3.4	Agree
5. I feel that the technology-based instruction in Araling Panlipunan served my needs well.	3.4	Agree
6. I was disappointed with the way technology- based instruction was implemented in Araling Panlipunan.	2.2	Disagree
7. If I had it to do over, I would not use technology-based instruction in Araling Panlipunan.	2.1	Disagree
8. Using technology-based instruction in Araling Panlipunan made it more difficult than other classes I have taken.	2.0	Disagree
Weighted Mean	2.9	Agree

Show in Table 5 is the level of technology-based instruction in terms of learner satisfaction. The overall weighted mean score is 2. 9, with the descriptive equivalent "Agree". It suggest that students are satisfied with the learning experience. Indicators 1,2,3,4, and 5 have mean score above 3.0, signifying agreement with the statements connected to these indicators. Indicators 6,7, and 9 have mean scores below 3.0, signifying disagreement with the statements connected to these indicators.

Virtual Learning. Table 6 shows the level of technology-based instruction in terms of virtual learning.

Table 6. *Virtual Learning*

Item	*Mean*	*Descriptive Equivalent*
1. Using technology-based instruction enables me to accomplish Araling Panlipunan tasks more quickly.	3.4	Agree
2. Using technology-based instruction improves my performance in Araling Panlipunan.	3.5	Strongly Agree
3. Using technology-based instruction enhances the effectiveness of my learning in Araling Panlipunan.	3.4	Agree
4. Using technology-based instruction makes it easier for me to learn Araling Panlipunan.	3.5	Strongly Agree
5. Using technology-based instruction gives me greater control over my learning in Araling Panlipunan.	3.2	Agree
Weighted Mean	3.4	Agree

It is presented in Table 6 the level of technology-based instruction in terms of virtual learning. The overall weighted mean score of virtual learning is 3.4, with the descriptive equivalent of "Agree". It implies that students are fulfilled with virtual learning aspect of the experience. All indicators have mean score above 3.0, which indicates that technology-based instruction enables them to accomplish things quickly, improves their performance, and enhance the effectiveness of their learning.

Summary on Table on the level of Technology-Based Instruction

Table 7. *Summary of Technology-Based Instruction*

Indicators	*Mean*	*Descriptive Equivalent*
A. Ease of Use	3.3	Agree
B. Peer Interaction	3.4	Agree
C. Perceived Usefulness	3.5	Strongly Agree
D. Learner Satisfaction	2.9	Agree
E. Virtual Learning	3.4	Agree
Weighted Mean	3.3	Agree

Shown in Table 7 is the summary of the results of the evaluation of the participants on the level of technology-based instruction with the indicators: ease of use, peer interaction, perceived usefulness, learner satisfaction, and virtual learning. The overall weighted mean score is 3.3, with the descriptive equivalent of "Agree". This means that the students have a positive thought of technology-based

instruction. Also based on the results they find that technology-based instruction is easy to use, and useful and they are satisfied with the learning experience.

The Level of Motivated Learning Strategies

Included in motivated learning strategies are cognitive strategy use, intrinsic value, self-efficacy, and self-regulation.

Cognitive Strategy Use. Table 8 shows the level of motivated learning strategy in terms of cognitive strategy use.

Table 8. *Cognitive Strategy Use*

Item	*Mean*	*Descriptive Equivalent*
1. When preparing for an Araling Panlipunan assessment, I try to combine information from the project work and other resources involving technology-based instruction.	3.4	Agree
2. When working on the Araling Panlipunan project alone, I try to remember what my classmates have told me about using technology-based instruction.	3.3	Agree
3. I find it difficult to identify the main ideas in the materials I read for the Araling Panlipunan class that uses technology-based instruction.	3.0	Agree
4. When preparing for an Araling Panlipunan assessment involving technology-based instruction, I try to remember as many facts as I can.	3.4	Agree
5. When studying Araling Panlipunan, I copy my notes over to help me remember the material related to technology-based instruction.	3.3	Agree
6. When studying for an Araling Panlipunan presentation involving technology-based instruction, I practice saying the important facts over and over to myself.	3.5	Strongly Agree
7. I use what I have learned from old Araling Panlipunan project assignments and materials involving technology-based instruction to complete new assignments.	3.2	Agree
8. When studying an Araling Panlipunan topic that involves technology-based instruction, I try to make everything fit together.	3.2	Agree
Weighted Mean	3.3	Agree

Table 8 shows that the overall weighted mean score of motivated learning strategy in terms of cognitive strategy use is 3.3, with the descriptive equivalent of "Agree". This means that the students' shows agreement that cognitive strategy use is essential in their learning in order for them to acquire information effectively. Indicators 1 to 8 have mean score range from 3.0 t0 3.5, which indicate that students use various cognitive strategies when learning.

Intrinsic Value. Table 9 shows the level of motivated learning strategy in terms of intrinsic value.

Table 9. *Intrinsic Value*

Item	*Mean*	*Descriptive Equivalent*
1. I prefer Araling Panlipunan project work that is challenging when it involves technology-based instruction, so I can learn new things.	3.4	Agree
2. It is important for me to learn what the Araling Panlipunan project work teaches me through technology-based instruction.	3.5	Strongly Agree
3. I think I will be able to use what I learn in the Araling Panlipunan project with technology- based instruction in other projects.	3.3	Agree
4. I often choose Araling Panlipunan topics that involve technology-based instruction, even if they require more work, because I will learn something new.	3.2	Agree
5. I think that what I am learning in this Araling Panlipunan class through technology-based instruction is useful for me to know.	3.4	Agree
6. I find the topics we are learning in this Araling Panlipunan class through technology-based instruction interesting.	3.4	Agree
7. Understanding the Araling Panlipunan topics taught through technology-based instruction is important to me.	3.5	Strongly Agree
Weighted Mean	3.4	Agree

Shown in Table 9 is the level of motivated learning strategy in terms of intrinsic value. The overall weighted mean score is 3.4, with the descriptive equivalent of "Agree". This suggest that students find motivated learning strategy intrinsically valuable to them. Indicators 2 and 7 has a mean score of 3.5, suggesting a high level of agreement that using technology-based instruction is significant to them in understanding the Araling Panlipunan topics.

Self-Efficacy. Table 10 shows the level of motivated learning strategy in terms of self-efficacy.

Table 10 shows that all indicators have the mean score range from 3.0 to 3.4, with the same descriptive equivalent of "Agree". This implies that students usually feel self-confident in their ability to learn. The overall weighted mean score of motivated learning strategy

in terms of self-efficacy is 3. 2, signifying agreement and implies that motivated learning strategy are exhibited most of the time.

Table 10. *Self-Efficacy*

Item	*Mean*	*Descriptive Equivalent*
1. Compared to my classmates, I expect to perform well in Araling Panlipunan activities involving technology-based instruction.	3.1	Agree
2. I am certain I can understand the concepts and ideas related to the Araling Panlipunan project work that utilizes technology-based instruction.	3.3	Agree
3. I expect to do well in the Araling Panlipunan learning system that incorporates technology-based instruction.	3.3	Agree
4. I am confident in my ability to excel in the problems and tasks assigned for the Araling Panlipunan project that involves technology- based instruction.	3.4	Agree
5. I think I will receive a good grade for the Araling Panlipunan project that incorporates technology-based instruction.	3.2	Agree
6. My study skills are excellent compared to others in my Araling Panlipunan class when it comes to using technology-based instruction.	3.0	Agree
7. I know I will be able to learn the material for the Araling Panlipunan project that utilizes technology-based instruction.	3.3	Agree
Weighted Mean	3.2	Agree

Self-Regulation. Table 11 shows the level of motivated learning strategy in terms of self-regulation.

Table 11. *Self-Regulation*

Item	*Mean*	*Descriptive Equivalent*
1. I ask myself questions to make sure I know the Araling Panlipunan material I have been studying through technology-based instruction.	3.4	Agree
2. When the Araling Panlipunan work involving technology-based instruction is difficult, I either give up or study only the easy parts.	2.2	Disagree
3. I work on practice exercises and prepare extra materials for Araling Panlipunan even when I don't have to, especially those involving technology-based instruction.	3.2	Agree
4. Even when the materials for the Araling Panlipunan project involving technology-based instruction are dull and uninteresting, I keep working until I finish.	3.0	Agree
5. Before I begin studying Araling Panlipunan topics with technology-based instruction, I think about the things I will need to do to learn.	3.4	Agree
6. I often find that I have been reading materials for the Araling Panlipunan project involving technology-based instruction, but I don't know what it is all about.	2.8	Agree
7. I find that when someone else is talking about using technology-based instruction in Araling Panlipunan, I think of other things and don't really listen to what is being said.	2.4	Disagree
8. When reading materials for Araling Panlipunan involving technology-based instruction, I stop once in a while and go over what I have read.	3.0	Agree
9. I work hard to get a good grade in Araling Panlipunan even when the project or activity involves technology-based instruction that I don't like.	3.0	Agree
Weighted Mean	2.9	Agree

It is shown in table 11 that indicatosr 1 and 5 has a mean score of 3.4, signifying a high level of agreement, while indicator 2 has a mean score of 2.2, signifying a low level of agreement. This means that the students may have different levels of self- regulation depending on the particular aspect being measured. Overall, it has a weighted mean score of 2.9, with the descriptive equivalent of "Agree" which suggest that students have some level of self-regulation when learning.

Summary Table on the Level of Motivated Learning Strategy

Table 12. *Summary of Motivated Learning Strategy*

Indicators	*Mean*	*Descriptive Equivalent*
A. Cognitive Strategy Use	3.3	Agree
B. Intrinsic Value	3.4	Agree
C. Self-Efficacy	3.2	Agree
D. Self-Regulation	2.9	Agree
Weighted Mean	3.2	Agree

Table 12 is the summary of the level of motivated learning strategy with four (4) indicators: cognitive strategy use, intrinsic value, self-efficacy, and self-regulation. The mean scores for each indicator are all above 3.0, and the overall weighted mean is 3.2, signifying an agreement. This implies that students has a good level of motivation, engagement, and effective learning strategies. Also it suggest that

the technology- based instruction approach was effective and received positive perceptions or agreement from participants.

The Level of Student Engagement

Included in student engagement are behavioral engagement, cognitive engagement, and emotional engagement.

Behavioral Engagement. Table 13 shows the level of student engagement in terms of behavioral engagement.

Table 13. *Behavioral Engagement*

Item	*Mean*	*Descriptive Equivalent*
1. I asked questions in Araling Panlipunan class or contributed to class discussions.	3.2	Agree
2. I participated during class discussion.	3.3	Agree
3. I participate in or small group discussions.	3.4	Agree
4. I do all the homework problems.	3.3	Agree
5. I come to class every day/every class.	3.5	Strongly Agree
6. I take good notes in class.	3.3	Agree
7. I make sure to study on a regular basis.	3.2	Agree
8. I do well overall in a class.	3.1	Agree
Weighted Mean	3.3	Agree

Table 13 shows that the overall weighted mean score is 3.3, with the descriptive equivalent of "Agree". This suggest that the students are participating and has a positive experience in the learning process. All indicators have the mean score range from 3.0 to 3.5, with the same descriptive equivalent of "Agree". This suggests that students agree of each indicators of behavioral engagement.

Cognitive Engagement. Table 14 shows the level of student engagement in terms of cognitive engagement.

Table 14. *Cognitive Engagement*

Item	Mean	Descriptive Equivalent
1. I prepared two or more drafts of a paper or assignment before turning it in.	3.2	Agree
2. I discussed ideas from readings or classes with faculty members outside of class.	3.1	Agree
3. I discussed ideas from your readings or classes with others outside of class.	3.1	Agree
4. I find ways to make the course interesting and relevant to me.	3.2	Agree
5. I look over class notes between classes to make sure I understand the materials.	3.4	Agree
Weighted Mean	3.2	Agree

Table 15 presents the results of a survey about the level of student engagement in terms of cognitive engagement. All indicators have the mean score range from 3.1 to 3.4, with the same descriptive equivalent of "Agree", which indicate positive response of the students to the indicators. The overall weighted mean score of cognitive engagement is 3.2, signifying that students are actively engaging in cognitive processes.

Emotional Engagement. Table 15 shows the level of student engagement in terms of emotional engagement.

Table 15. *Emotional Engagement*

Item	*Mean*	*Descriptive Equivalent*
1. I included diverse perspective in class discussions of writing assignments.	3.2	Agree
2. I worked with other students on projects during class.	3.1	Agree
3. I worked with classmates to prepare class assignments.	3.2	Agree
4. I am confident that I can learn and do well in the class.	3.4	Agree
5. I enjoyed learning in class.	3.5	Strongly Agree
6. I talked about career plans with a faculty member or adviser.	3.0	Agree
Weighted Mean	3.2	Agree

It is presented in Table 15 the level student engagement in terms of emotional engagement. The overall weighted mean of emotional engagement is 3.2, with the descriptive equivalent of "Agree". It suggest that students experience positive emotions in the learning process. All indicators have mean score above 3.0, which shows positive emotions while learning.

The Summary Table on the Level of Student Engagement

Table 16 shows the summary of student engagement with three (3) indicators: behavioral engagement, cognitive engagement, and student engagement. The mean scores for each indicator are all above 3.0, suggesting high level of student engagement. The overall weighted mean is 3.2, with the descriptive equivalent "Agree" this implies that students demonstrate high levels of behavioral, emotional, and cognitive engagement with frequent participation, positive emotional involvement, and active cognitive engagement in the learning process.

Table 16. *Summary of Student Engagement*

Indicators	*Mean*	*Descriptive Equivalent*
A. Behavioral Engagement	3.3	Agree
B. Cognitive Engagement	3.2	Agree
C. Emotional Engagement	3.2	Agree
Weighted Mean	3.2	Agree

Technology-Based Instruction and Motivated Learning Strategy as predictor of Student Engagement

Coefficients

Model	*Unstandardized*		*Standard Error*	*Standardized*	*t*	*p*
H_0	(Intercept)	3.255	0.029		113.165	< .001
H_1	(Intercept)	0.549	0.386		1.422	0.158
	TBI	0.304	0.122	0.221	2.481	0.014
	MLS	0.534	0.120	0.397	4.444	< .001

The provided table presented the coefficients from a linear regression analysis aimed at understanding the relationship between student engagement and two predictors: Technology-Based Instruction (TBI) and Motivated Learning Strategies (MLS). The table included unstandardized coefficients, standard errors, standardized coefficients, t-values, and p-values for both the intercept and the predictors.

The intercept in the null model indicated the baseline level of student engagement when no predictors were included. The coefficient of 3.255, with a highly significant p- value, represented the average student engagement score in the absence of TBI and MLS. On the other hand, in the alternative model, the intercept coefficient of 0.549 represented the baseline level of student engagement when both TBI and MLS were at zero. However, the p-value of 0.158 indicated that this intercept was not statistically significant, meaning it did not provide meaningful information by itself when predictors were included.

While the unstandardized coefficient of 0.304 indicated that for each one-unit increase in TBI, student engagement increased by 0.304 units, assuming MLS remained constant. The standardized coefficient (Beta) of 0.221 showed the relative importance of TBI in predicting student engagement compared to other variables. The t-value of 2.481 and the p-value of 0.014 indicated that TBI was a statistically significant predictor of student engagement, meaning there was less than a 1.5% chance that this result was due to random variation.

The unstandardized coefficient of 0.534 suggested that for each one-unit increase in MLS, student engagement increased by 0.534 units, assuming TBI remained constant. The standardized coefficient (Beta) of 0.397 showed that MLS had a stronger relative impact on student engagement than TBI. The t-value of 4.444 and the p-value of less than 0.001 indicated that MLS was a highly significant predictor of student engagement, confirming its strong influence.

The regression analysis indicated that both TBI and MLS significantly predicted student engagement, with MLS having a stronger impact. The significant coefficients for TBI and MLS highlighted their positive contributions, where increases in either predictor were associated with increases in student engagement. The standardized coefficients suggested that while both predictors were important, MLS had a more substantial effect on engagement levels. These findings suggested that enhancing technology-based instruction and motivated learning strategies could effectively boost student engagement, emphasizing the value of these approaches in educational settings.

After the data were analyzed and interpreted, the following discussions of the findings are gathered:

Level of Technology-Based Instruction in terms of Ease of Use. The level of technology-based instruction in terms of ease of use got the overall weighted mean score of 3.3 with the descriptive equivalent of "Agree" which suggests that the technology-based instruction approach is effective, and it could enhancement learning productivity and contentment.

Moreover, this positive feedback suggested that integrating technology into the instructional process could facilitate learning and potentially improve student engagement and comprehension. The agreement from participants highlighted their overall satisfaction and confidence in using technology as a tool for education, implying that continued use and development of such technology could lead to further improvements in teaching methods.

The findings of the study was supported by the findings of Allman et al. (2023), which indicated that users agreed on the ease of use, suggesting that the technology's design and implementation had been user-friendly and intuitive, crucial factors for successful adoption and sustained use in educational settings. This interpretation aligned with broader research indicating that user-friendly technology positively impacted learning efficiency and user satisfaction, reinforcing the claim of its effectiveness (Araujo et al., 2022).

Level of Technology-Based Instruction in terms of Peer Interaction. The level of technology-based instruction in terms of peer interaction got the overall weighted mean of 3.3 with the descriptive equivalent of "Agree". This suggests that students agree that peer interaction contributes positively to their learning experience in Araling Panlipunan.

The implication for peer interaction is that students find significance in working with peers, exchanging ideas, and engaging with them. This positive view could lead to different welfares of the students' motivation, communication, and sense of belonging. Also, it implies that if students feel supported it could build a conducive environment. The studies by Smith and Johnson (2020) and Brown and Davis (2018) provide valuable thoughts into the importance of peer interaction and its impact on student learning in educational situations. They suggests that positive peer relationships and teamwork can contribute to educational attainment and personal growth.

Level of Technology-Based Instruction in terms of Perceived Usefulness. The level of technology-based instruction in terms of perceived usefulness got the overall mean of 3.5 with the descriptive equivalent of "Strongly Agree" which indicates that the technology-based instruction approach is highly effective, with strong positive perceptions or agreement from participants.

Moreover, Bejrajh and Themane (2022) found that the high overall mean indicated that the participants had seen significant value in integrating technology into their instructional process. This perception of usefulness likely stemmed from the technology's ability to facilitate better understanding, provide interactive learning experiences, and offer convenient access to educational resources. The strong agreement among participants underscored the success of the technology in meeting their educational needs and expectations.

Furthermore, Mellati et al. (2018) interpreted these findings and found that the technology-based instruction approach had not only been well-received but also perceived as a vital component in modern education. The high ratings for perceived usefulness suggested that the technology effectively supported learning objectives and improved educational outcomes. This aligned with existing literature, which indicated that when educational technology was perceived as useful, it tended to result in higher engagement and better academic performance, thereby supporting the claim of its high effectiveness (Ankiewicz, 2018).

Level of Technology-Based Instruction in terms of Learner Satisfaction. The level of technology-based instruction in terms of learner satisfaction got the overall weighted mean of 2.9 with the descriptive equivalent of "Agree" which suggests that the technology-based instruction approach is effective, with positive perceptions or agreement from participants.

Despite the positive feedback, the overall weighted mean score of 2.9 suggested there might be areas for improvement to enhance learner satisfaction further. While participants agreed on the effectiveness of the technology, the rating was just below the threshold of "Strongly Agree," indicating that there were some aspects of the technology-based instruction that could be optimized. This might include improving the user interface, providing more interactive features, or ensuring better technical support.

Interpreting these findings, it was evident that while the technology-based instruction approach had been effective and generally well-received, there had been potential for enhancement to achieve higher satisfaction levels (Cheng and Chen, 2019). The agreement among participants had affirmed the approach's basic efficacy but had also highlighted the need for continuous improvement. This interpretation aligned with broader educational research, which suggested that continuous refinement and adaptation of technology-based learning tools had been essential for maintaining and increasing learner satisfaction and engagement over time (Arain et al., 2017).

Level of Technology-Based Instruction in terms of Virtual Learning. The level of technology-based instruction in terms of virtual learning got the overall mean score of 3.4 with the descriptive equivalent of "Agree" which suggests that the technology- based instruction approach is effective, with positive perceptions or agreement from participants.

Moreover, the overall mean of 3.4 suggested that the virtual learning tools and methods were well-received by the participants. This agreement highlighted that the technology successfully facilitated learning objectives and provided a supportive and engaging virtual environment. Participants likely appreciated the flexibility, accessibility, and interactive elements that virtual learning platforms offered, which contributed to their positive perceptions.

Based on the study conducted by Bernackia et al. (2020), it was evident that the technology-based instruction approach in virtual learning had been effective and had met the learners' expectations. However, the rating had also indicated room for further enhancements to elevate the effectiveness to an even higher level. This interpretation aligned with the broader trend in educational technology, where continuous updates and improvements had been necessary to keep pace with evolving educational needs and technological advancements. The positive feedback had reinforced the value of virtual learning while emphasizing the importance of ongoing development to maintain and improve its effectiveness (Choa and Castañedab, 2019).

Level of Motivated Learning Strategy in terms of Cognitive Strategy. The study revealed that the overall weighted mean score for the level of motivated learning strategy in terms of cognitive strategy was 3.3, with the descriptive equivalent of "Agree". This result implied that participants generally perceived the technology-based instructional approach as effective in enhancing their cognitive strategies for learning. The positive perceptions and agreement indicated that the technology successfully supported the development and use of effective cognitive learning strategies among participants. The overall weighted mean score of 3.3 suggested that while the technology-based instruction was effective, there remained room for improvement to further boost its impact on learners' cognitive strategies. Participants' agreement indicated satisfaction with how the technology facilitated their learning processes, yet it also pointed

out that certain elements could be refined. Enhancements might include more personalized learning experiences, advanced interactive features, or better integration of cognitive strategy techniques to optimize learning outcomes.

As supported by Mayer (2020), the technology-based instruction approach had played a valuable role in supporting motivated learning strategies and had been positively received by participants. The agreement among participants had affirmed the approach's effectiveness in fostering cognitive learning strategies, highlighting its importance in modern education. However, the rating had also underscored the necessity for continuous development and adaptation of the technology to ensure it remained effective and increasingly beneficial for learners. This interpretation was consistent with broader educational research, which had advocated for ongoing enhancements in educational technology to maintain high levels of effectiveness and learner satisfaction (Miyatsu et al., 2019).

Level of Motivated Learning Strategy in terms of Intrinsic Value. The study revealed that the overall weighted mean score for the level of motivated learning strategy in terms of intrinsic value was 3.4, with the descriptive equivalent of "Agree". This result implied that participants generally perceived the technology-based instructional approach as effective in enhancing their intrinsic motivation for learning. The positive perceptions and agreement indicated that the technology successfully fostered an appreciation for learning that was driven by personal interest and internal satisfaction among participants. The overall weighted mean score of 3.4 suggested that while the technology-based instruction was effective, there remained potential for further improvement to maximize its impact on learners' intrinsic motivation. Participants' agreement signified a solid level of satisfaction with how the technology nurtured their intrinsic value towards learning, yet it also pointed to areas that could be refined. These enhancements might involve more engaging and personalized content, increased interactivity, or better alignment with learners' interests to further boost their intrinsic motivation.

Interpreting these findings, it was evident that the technology-based instruction approach had effectively supported motivated learning strategies by enhancing the intrinsic value of learning, and it had been positively received by participants. The agreement among participants had confirmed the approach's effectiveness in fostering a genuine appreciation for learning, underscoring its significance in contemporary education (Moorthy et al., 2019; Mora et al., 2020). However, the rating had also emphasized the importance of continuous development and adaptation to ensure the technology remained relevant and increasingly effective in promoting intrinsic motivation. This interpretation aligned with broader educational research, which had advocated for ongoing improvements in educational technology to maintain high levels of learner engagement and motivation.

Level of Motivated Learning Strategy in terms of Self-Efficacy. The study revealed that the overall weighted mean score for the level of motivated learning strategy in terms of self-efficacy was 3.2, with the descriptive equivalent of Agree. This result implied that participants generally perceived the technology-based instructional approach as effective in enhancing their self-efficacy for learning. The positive perceptions and agreement indicated that the technology successfully supported participants in believing in their capabilities to achieve learning goals.

The overall weighted mean score of 3.2 suggested that while the technology-based instruction was effective, there was still room for improvement to further enhance its impact on learners' self-efficacy. Participants' agreement indicated satisfaction with how the technology bolstered their confidence in their learning abilities, yet it also highlighted potential areas for refinement. These improvements might include more personalized feedback, increased opportunities for practice and mastery, or better scaffolding to help learners build their confidence incrementally.

Interpreting these findings, it was evident that the technology-based instruction approach effectively supported motivated learning strategies by enhancing self- efficacy and was positively received by participants. The agreement among participants confirmed the approach's effectiveness in fostering a belief in their learning capabilities, underscoring its importance in modern education Onal et al., (2019). However, the rating also emphasized the necessity for continuous development and adaptation to ensure the technology remains effective and increasingly beneficial in promoting self-efficacy. This interpretation aligns with broader educational research, which highlights the critical role of self-efficacy in academic success and the need for ongoing enhancements in educational technology to sustain high levels of learner confidence and motivation Pan et al. (2019).

Level of Motivated Learning Strategy in terms of Self-Regulation. The study revealed that the overall weighted mean score for the level of motivated learning strategy in terms of self-regulation was 2.9, with the descriptive equivalent of "Agree". This result implied that participants generally perceived the technology-based instructional approach as effective in enhancing their self-regulation skills for learning. The positive perceptions and agreement indicated that the technology successfully supported participants in managing their learning processes and strategies.

The overall weighted mean score of 2.9 suggested that while the technology-based instruction was effective in fostering self-regulation, there remained opportunities for improvement to further enhance its impact on learners' ability to regulate their learning behaviors. Participants' agreement signaled satisfaction with how the technology facilitated their self-regulation skills, yet it also pointed to areas that could be refined. These improvements might include more structured guidance on goal-setting and monitoring progress, personalized prompts for reflection and adjustment, or enhanced tools for organizing study materials and schedules.

Interpreting these findings, it was evident that the technology-based instruction approach effectively supported motivated learning strategies by enhancing self- regulation and was positively received by participants. The agreement among participants affirmed the approach's effectiveness in promoting self-management of learning processes, underscoring its significance in contemporary

educational practices Rachels et al. (2018). However, the rating also highlighted the importance of ongoing development and adaptation to ensure the technology remains relevant and increasingly effective in supporting self-regulated learning. This interpretation aligns with broader educational research, which emphasizes the critical role of self- regulation in academic achievement and the continuous need for advancements in educational technology to sustain high levels of learner autonomy and engagement (Read et al., 2021).

Level of Student Engagement in terms of Behavioral Engagement. The study's findings indicated that the overall weighted mean score for the level of student engagement in terms of behavioral engagement was 3.3, with the descriptive equivalent of "Agree." This result suggested that students consistently exhibited motivated learning strategies, reflecting a high level of engagement and effective learning practices. The positive rating indicated that students were actively involved in their learning processes, demonstrating behaviors such as participating in class activities, completing assignments diligently, and showing interest in learning tasks.

Moreover, the overall weighted mean score of 3.3 implied that while student engagement in behavioral aspects was generally strong, there may still be opportunities to further enhance and sustain this level of motivation and participation. The agreement among participants highlighted their satisfaction with the current level of engagement, yet it also hinted at areas that could benefit from reinforcement or expansion. This might include fostering deeper connections between learning content and real-world applications, providing more interactive learning experiences, or offering opportunities for student-led initiatives to promote autonomy and ownership in learning.

Furthermore, John et al., (2022) it was evident that the technology-based instruction approach effectively fostered high levels of student engagement in behavioral aspects. The agreement among participants affirmed the approach's success in promoting motivated learning behaviors, underscoring its role in cultivating a dynamic and participatory classroom environment. However, the rating also underscored the ongoing need for innovative strategies and continuous support to sustain and enhance student engagement over time. This interpretation aligns with educational research emphasizing the importance of active engagement in learning as a key predictor of academic success and overall student well-being Kang et al., (2023).

Level of Student Engagement in terms of Cognitive Engagement. The study's findings revealed that the overall weighted mean score for the level of student engagement in terms of cognitive engagement was 3.2, with the description of “Agree”. This result suggested that students frequently demonstrated motivated learning strategies, indicating a solid level of engagement and effective learning practices. The positive rating implied that students actively applied cognitive skills such as critical thinking, problem-solving, and analyzing information, showcasing their commitment to understanding and mastering the learning material.

Moreover, the overall weighted mean score of 3.2 indicated that while cognitive engagement was generally strong, there may be areas where further enhancements could amplify students' motivation and cognitive involvement. The agreement among participants reflected their satisfaction with the current level of cognitive engagement, yet it also hinted at potential opportunities for improvement. This might include incorporating more collaborative learning activities, leveraging multimedia resources to enhance content comprehension, or providing clearer connections between theoretical concepts and practical applications to deepen students' cognitive engagement.

As supported by Lindenberger (2024) stated that the technology-based instruction approach effectively fostered high levels of cognitive engagement among students. The agreement among participants affirmed the approach's success in promoting active and thoughtful learning behaviors, highlighting its role in cultivating a stimulating and intellectually stimulating learning environment. However, the rating also underscored the ongoing need for continuous innovation and tailored support to sustain and elevate cognitive engagement levels over time. This interpretation aligns with educational research emphasizing the critical role of cognitive engagement in fostering deeper learning outcomes and preparing students for lifelong learning and professional success Stieger and Lachman (2021).

Level of Student Engagement in terms of Emotional Engagement. The study's analysis revealed that the overall weighted mean score for the level of student engagement in terms of emotional engagement was 3.2, characterized by the descriptive equivalent of “Agree”. This finding suggested that students consistently demonstrated motivated learning strategies, indicating a robust level of emotional investment and effective learning practices. The positive rating implied that students were actively involved and connected emotionally to their learning experiences, showcasing enthusiasm, interest, and a sense of personal relevance in their educational pursuits.

Moreover, the overall weighted mean score of 3.2 indicated that while emotional engagement was generally strong, there existed opportunities for further enhancement to deepen and sustain students' emotional connection to their learning. The agreement among participants indicated their satisfaction with the current level of emotional engagement, yet it also hinted at potential areas for improvement. This might involve fostering a supportive learning environment that acknowledges and addresses students' emotional needs, integrating more diverse and inclusive content that resonates with students' backgrounds and interests, or implementing strategies to enhance students' sense of ownership and autonomy in their learning journey.

Interpreting these findings, it was evident that the technology-based instruction approach effectively nurtured high levels of emotional engagement among students. The agreement among participants affirmed the approach's success in fostering a positive emotional connection to learning, underscoring its role in creating a motivating and fulfilling educational experience (Salehinya et al., 2018). However, the rating also underscored the ongoing need for continuous adaptation and innovation in educational practices to sustain

and elevate emotional engagement levels over time. This interpretation aligns with educational research emphasizing the significant impact of emotional engagement on learning outcomes and overall student well-being, highlighting its importance in promoting holistic student development (Dor, 2017).

Technology-Based Instruction and Motivated Learning Strategy as predictor of Student Engagement. Based on the results of the linear regression model summary, it can be interpreted that the model showed a significant improvement over the null hypothesis (H_0). The model's coefficient of determination (R^2) was 0.298, indicating that approximately 29.8% of the variance in the dependent variable could be explained by the independent variables included in the model. This suggests a moderate level of predictive power, where the independent variables collectively contributed to explaining changes in the dependent variable.

Furthermore, the adjusted R^2 of 0.286 indicates that after adjusting for the number of predictors in the model, there was a slight decrease in the explanatory power compared to the raw R^2. This adjustment is important as it accounts for the potential overestimation of R^2 that can occur when additional predictors are added to the model. The root mean square error (RMSE) of 0.271 reflects the average deviation of the observed values from the predicted values by the model. A lower RMSE suggests that the model's predictions were relatively close to the actual values, indicating good fit overall.

While the linear regression model demonstrated a statistically significant relationship between the independent and dependent variables (H_1), the moderate R^2 and adjusted R^2 values suggest that there may be other factors not included in the model that could further explain variations in the dependent variable. As supported by the study conducted by Doni et al. (2022) implies that while the model provides valuable insights, additional variables or refinements may be necessary to enhance its predictive accuracy and robustness in explaining the phenomenon under study Zaimah et al. (2020).

Coefficients. Based on the coefficients presented, several key interpretations can be drawn regarding the relationships within the model. For the null hypothesis (H_0), the intercept was estimated at 3.255 with a standard error of 0.029, and a highly significant. This suggests that even without considering the effects of the predictors (TBI and MLS), there was a strong baseline level of the dependent variable. Moving to the alternative hypothesis (H_1), the intercept was estimated at 0.549 with a standard error of 0.386 and a t-value of 1.422 ($p = 0.158$). Although the intercept was not statistically significant at the conventional alpha level of 0.05, it still provides a reference point when the predictors (TBI and MLS) are considered.

Regarding the predictors, TBI (Technology-Based Instruction) had a coefficient of 0.304 with a standard error of 0.122 and a t-value of 2.481 ($p = 0.014$). This indicates that for each unit increase in TBI, the dependent variable increased by 0.304 units, holding all other variables constant. The coefficient was statistically significant, suggesting that TBI had a positive effect on the dependent variable. Similarly, MLS (Motivated Learning Strategy) had a coefficient of 0.534 with a standard error of 0.120 and a t-value of 4.444 ($p < .001$). This indicates that for each unit increase in MLS, the dependent variable increased by 0.534 units, holding all other variables constant. The coefficient for MLS was also statistically significant, indicating a stronger positive effect compared to TBI.

The coefficients analysis revealed that both Technology-Based Instruction (TBI) and Motivated Learning Strategy (MLS) had significant positive effects on the dependent variable. The significant coefficients for TBI and MLS implied that these factors were important contributors to the observed outcomes. Specifically, the positive impact of TBI suggested that incorporating technology-based instructional methods could enhance student engagement and learning effectiveness. Similarly, the strong influence of MLS indicated that fostering motivated learning strategies could significantly improve students' learning experiences and outcomes.

These findings implied that educational institutions and policymakers should consider investing in and integrating technology-based instructional methods and motivated learning strategies to enhance educational outcomes. The significant positive effects of TBI and MLS highlighted their potential as effective tools for promoting student engagement, motivation, and overall learning success. By focusing on these factors, educators could better support students in achieving higher levels of academic performance and satisfaction.

This was supported by Pan et al. (2019) and Rachels et al. (2018) that the implication of the coefficients analysis was that both TBI and MLS were critical components in driving positive educational outcomes. Their significant effects underscored the importance of adopting innovative teaching methods and motivational strategies to improve student engagement and learning effectiveness. This insight could inform future educational practices and policy decisions aimed at enhancing the quality of education and student achievement (Read et al., 2021).

Conclusions

In conclusion, the analysis demonstrates that the regression model effectively explains the variance in student engagement. The significant coefficients for both Technology-Based Instruction (TBI) and Motivated Learning Strategies (MLS) underscore their positive impacts on student engagement, with MLS showing a particularly strong influence. These findings emphasize the importance of integrating TBI and MLS in educational practices to foster increased student engagement and optimize learning outcomes.

Based on the findings, the researchers outline the following recommendations.

Supported initiatives that incorporated Technology-Based Instruction and Motivated Learning Strategies in your child's education. Stayed informed about how these approaches enhanced student engagement and academic performance.

Allocated resources and provided professional development opportunities that enabled teachers to effectively integrate Technology-Based Instruction and Motivated.

Learning Strategies into their teaching practices. Fostered a supportive environment that encouraged innovation and the use of technology in education.

Embraced Technology-Based Instruction and Motivated Learning Strategies as effective tools for promoting student engagement. Incorporated interactive and personalized learning experiences that leveraged technology to enhance learning outcomes. Continuously assessed and adapted instructional strategies based on student engagement and performance data.

Stakeholders in General, collaborated to advocate for policies and practices that prioritized the integration of Technology-Based Instruction and Motivated Learning Strategies in educational settings. Recognized the positive impact of these approaches on student motivation, engagement, and academic achievement, and worked together to create supportive learning environments that empowered students to succeed.

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