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Attitude in Using Artificial Intelligence (AI) Tools Among Public School Teachers and its Teaching Effectiveness

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ABSTRACT

Artificial intelligence (AI) and digital technology continue to reshape learning, access to information, and instructional practices, yet their effective classroom integration depends largely on teachers' knowledge, attitudes, and patterns of technology use. This study assessed the attitude toward and perceived effectiveness of AI tools among public school teachers in Sto. Niño District, Schools Division of Samar, for the School Year 2025–2026. The study employed a descriptive-causal comparative research design. Findings revealed that the respondents were predominantly mid-adults, female, married, holding bachelor's degrees only, considered mid-career teachers, and primarily teaching at the elementary level. Teachers commonly used smartphones and laptops, frequently used gadgets daily, were familiar with widely accessible AI tools, and generally had access to basic ICT resources. Teachers demonstrated a positive attitude toward theoretical knowledge, indicating awareness and understanding of AI concepts, but only moderate levels of practical knowledge and pedagogical use, suggesting limited classroom application. The effectiveness of AI tools was rated positively across all dimensions, particularly in personalized training, time efficiency, research, data-driven inputs, and enhanced learning engagement. There were no significant differences in attitude levels when grouped by most demographic variables. Significant differences in perceived effectiveness were observed only when teachers were grouped by grade level. Among the technology-related variables, only the frequency of gadget use significantly predicted effectiveness, while the type of device, the AI tools commonly used, and the presence of other ICT resources did not. The findings highlight a gap between teachers' conceptual understanding and actual classroom integration of AI. The study recommends hands-on ICT integration training to strengthen practical skills and pedagogical application, thereby improving the effectiveness of AI use in teaching.

INTRODUCTION

Before search engines like Google existed, students and teachers had to spend hours going through many books to find information. Today, a quick search can bring up thousands of results in seconds. This change demonstrated how artificial intelligence (AI) and digital technology transformed how people learn and access information. These tools became part of daily life, helping solve problems that once took a lot of time and effort (Tuomi, 2018). Technology also changed the world of work. According to The World Economic Forum (WEF, 2018), many traditional jobs were expected to disappear as automation and AI took over some tasks. This showed how technology reshaped the way people lived, learned, and worked in a fast-changing world. Artificial intelligence (AI) has become one of the most transformative outcomes of digital advancement, influencing nearly every sector of society (Organization for Economic Co-operation and Development [OECD], 2019). Since the early 21st century, AI-powered tools and systems have simplified daily life and enhanced productivity. For example, AI algorithms were behind song recommendations on music platforms and smart assistants used in banking applications (Bau *et al.,* 2018). Likewise, Dwivedi *et al.* (2021) noted that AI had become an essential technology in fields such as healthcare, tourism, and defense, where information systems played an important role. These examples showed how AI evolved from a specialized technological innovation into a tool that supported decision-making, automation, and efficiency across industries.

AI was also making a strong impact on education. Its ability to personalize learning, analyze data, and support both teachers and students made it one of the most promising outcomes of digital transformation (Elstad, 2024). The use of AI in classrooms gained attention for its potential to improve teaching and learning (Roll & Wylie, 2016). Studies showed that AI tools made lessons more engaging and easier to understand, helping capture students' interest and deepen their learning (Pangrazio & Selwyn, 2019). AI also provided practical advantages by organizing data on student performance, allowing teachers to monitor progress and respond more effectively to individual needs (Baker & Siemens, 2014).

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Researchers predicted that AI would continue to play a major role in transforming how schools operated and how students learned (Zawacki-Richter *et al.,* 2019). Yet despite this global momentum, many education systems still lack structured content to help students build AI-related knowledge and skills (Lin & Liu, 2020). Grassini and Henriksen (2023) added that while technology offered opportunities for improvement, meaningful progress depended on educators' own adaptation by embracing innovation and applying these tools in their teaching.

The Department of Education made clear efforts to integrate artificial intelligence (AI) into the country's education system, recognizing its role in modernizing teaching and learning. This direction became more concrete with the creation of the Education Center for Artificial Intelligence Research (ECAIR) in 2025 (DepEd, 2025). Early AI-driven projects such as the Technology-Assisted Learning and Instruction for New Opportunities (Project TALINO) and the Data Utilization and Knowledge Optimization Network for Governance (Project DUNONG) were mainly designed to improve administrative processes. However, ECAIR's broader goal was to develop AI tools that enhanced classroom instruction and school management, helping Filipino learners build future-ready skills. The department also launched AI-based programs such as Project SIGLA, which tracked student health, and Project SABAY, which identified learning and cognitive risks early. These initiatives showed a strong commitment to using AI for personalized learning and addressing access and performance gaps, especially in Last Mile Schools (DepEd, 2025). Studies showed similar developments. For instance, Rosqueta (2025) found that teachers observed improvements in instruction and administrative efficiency when using AI-powered tools. Likewise, Cubio (2025) reported that many DepEd personnel viewed AI as an important support system for both teaching and school management. Altogether, these efforts demonstrated how the education sector in the Philippines steadily moved toward a more technology-driven, data-informed learning environment. However, the existing literature largely emphasizes system-level implementation and perceived usefulness, with limited discussion of teachers' ease of use, actual classroom application, and experiences.

Despite the growing global and national efforts to integrate artificial intelligence (AI) into education, most studies have focused on its general benefits, such as improving instruction, efficiency, and data use, but have given less attention to how teachers actually experience and apply these tools in real classroom settings. This created a research gap in understanding teachers' attitudes and perceived effectiveness of AI tools in island districts like Sto. Niño District, Schools Division of Samar, where access to technology and support may be limited. Because of this gap, it remained unclear how far AI integration had truly reached and how it was being used in day-to-day teaching in such contexts. In response, this study assessed the attitudes of public school teachers toward AI tools and their perceived effectiveness in teaching. It specifically aimed to determine how teachers viewed AI, how they used it in instruction, and how effective they found it, to provide useful local evidence to guide training programs and improve the use of AI in classroom teaching.

MATERIALS AND METHODS

Research Design

This research utilized a descriptive-causal comparative-correlational research design. According to Creswell and Creswell (2018), this design aimed not only to describe the characteristics or perceptions of a population but also to determine whether and how differences existed between groups based on certain variables, and to explore possible causal relationships. In descriptive research, the researcher aimed to present a clear and accurate picture of the situation. On the other hand, the causal-comparative research design examined cause-and-effect relationships by comparing two or more groups that differed in an independent variable without manipulating it. It was typically used to determine whether differences in one variable were associated with differences in another variable. This design was appropriate for this study because it allowed the researcher to describe teachers' attitudes toward AI tools and to simultaneously compare groups based on demographic or technology-related profiles to determine how these differences affected the perceived effectiveness of AI in teaching. This design helped identify whether variations in teachers' attitudes or technological competence were associated with differences in how effectively they used AI tools in the classroom.

Respondents and Sampling Procedure

The respondents in this study were public elementary and secondary school teachers from the 16 schools in Sto. Niño District, Schools Division of Samar. Table 1 presents the distribution of respondents. The total population of teachers in the district was 171, and a sample size of 120 respondents was determined using the Raosoft Sample Size Calculator with a 95% confidence level and a 5% margin of error to ensure the study's statistical reliability and representativeness. To achieve balanced representation, the sample was proportionally distributed across schools, with schools with larger teacher populations contributing more respondents than those with smaller populations. As reflected in the distribution, Sto. Niño National High School and Cabungaan Integrated School contributed the highest number of respondents, with 20 and 15 teachers, respectively. In contrast, smaller schools such as Malobago Elementary School and Pinanangnan Elementary School contributed 2 respondents each. This proportional allocation ensured that all schools in the district were fairly represented in the study and minimized sampling bias. Furthermore, the study employed proportional stratified random sampling, a probability sampling technique in which

the population is divided into subgroups (strata) based on school assignment, and respondents are randomly selected proportionate to the size of each subgroup. This approach strengthened the representativeness of the sample and ensured that the perspectives and experiences of teachers from both large and small schools were adequately reflected in the study.

Research Instrumentation

The researcher used a researcher-made survey questionnaire as the main data-gathering instrument. The questionnaire was divided into four parts. The first part focused on the demographic profile of the respondents, which included their age, gender, civil status, highest educational attainment, length of service, and grade level handled. The second part gathered information on teachers' technology-related profiles, including the gadgets they commonly use, the frequency of their use, the availability of ICT tools at their school, and the AI tools they typically use. The third part measured the level of teachers' attitudes toward the use of Artificial Intelligence (AI) tools in teaching. This section was divided into three (3) dimensions: theoretical knowledge, practical knowledge, and pedagogical consumption, each consisting of five (5) indicators. The respondents rated their answers using a five-point Likert scale: 5-Strongly Agree, 4-Agree, 3-Moderate Agree, 2-Disagree, and 1-Strongly Disagree. The fourth part determined the level of perceived effectiveness of using AI tools in teaching. It consisted of four (4) dimensions: personalized training, time efficiency, research and data-driven inputs, and enhanced learning engagement, with five (5) indicators in each dimension. Responses in this section were rated using another five-point Likert scale: 5-Very Effective, 4-Effective, 3-Moderately Effective, 2-Slightly Effective, and 1-Not Effective. The questionnaire was designed to elicit honest responses from teachers to better understand their attitudes toward AI and perceptions of its effectiveness in teaching.

Data Analysis

The researcher used descriptive statistics, including frequencies, percentages, means, and standard deviations, to summarize the teachers' demographic and technology-related profiles. The weighted mean and standard deviation were used to describe their attitudes toward AI tools and their perceived effectiveness in using them for teaching. Before conducting the statistical tests, the data were checked for normality to determine the appropriate statistical treatment. To assess differences in attitude and effectiveness across teacher groups based on their demographic profiles, the study used the Kruskal–Wallis test. To identify which technology-related factors predict the effectiveness of AI use in teaching, a linear regression analysis was conducted.

RESULTS AND DISCUSSION

Results

Teachers' Attitude Toward the Use of Artificial Intelligence (AI) Tools in Teaching

Tables 1 to 4 present the teachers' attitude toward the use of AI tools in teaching using mean and standard deviation. Table 1 presents the mean and standard deviation of teachers' attitudes toward the use of artificial intelligence (AI) tools in teaching, as measured by theoretical knowledge.

Table 1: Mean and standard deviation on the attitude toward the use of artificial intelligence (AI) tools in teaching in terms of theoretical knowledge

Indicators	Mean	SD	Interpretation
1. I understand the basic ideas and functions of AI.	4.36	0.68	Strongly Agree
2. I am aware of how AI tools are applied in education.	4.25	0.76	Strongly Agree
3. I know the benefits of using AI in classroom teaching.	4.37	0.73	Strongly Agree
4. I can differentiate AI tools from other educational technologies.	4.54	4.70	Strongly Agree
5. I recognize the potential of AI to improve teaching and learning.	4.33	0.69	Strongly Agree
6. I understand the ethical considerations of using AI in education.	4.33	0.69	Strongly Agree
7. I am familiar with current trends and developments in AI technology.	3.90	0.78	Strongly Agree
Average	**4.30**	**0.20**	**Strongly Agree**

Legend: 1.00-1.80=Strongly Disagree; 1.81-2.60=Disagree; 2.61-3.40=Moderately Agree; 3.41-.4.20=Agree; 4.21-5.00=Strongly Agree

The results indicate that teachers generally exhibit a high level of theoretical understanding of AI concepts in education, as reflected by the overall mean of 4.30. Among the indicators, the highest mean is observed in the ability to differentiate AI tools from other educational technologies (M = 4.54). This is followed by knowledge of the benefits of using AI in classroom teaching (M = 4.37, SD = 0.73) and understanding of the basic ideas and functions of AI (M = 4.36, SD = 0.68). Teachers also reported strong awareness of the potential of AI to improve teaching and learning (M = 4.33, SD = 0.69) and an equal level of understanding regarding ethical considerations in its use (M = 4.33, SD = 0.69). In addition, awareness of how AI tools are applied in education obtained a mean of 4.25 with a standard deviation of 0.76. The lowest mean, although still relatively high, is recorded in familiarity with current trends and developments in AI technology (M = 3.90, SD = 0.78). This could mean that while teachers have a solid foundational understanding, some may be less

updated with recent advancements. It can be considered that teachers possess a strong theoretical grasp of AI, particularly in terms of its functions, benefits, and educational applications.

Table 2 presents the mean and standard deviation of teachers' attitude toward the use of artificial intelligence (AI) tools in teaching in terms of practical knowledge. Overall, the results show that teachers have a generally positive level of practical competence in using AI tools, with an average mean of 3.59 and a standard deviation of 0.28. Among the indicators, the highest mean is for the ability to prepare instructional materials using AI tools (M = 3.99, SD = 0.80), indicating that many teachers are already using AI in lesson preparation. This is followed by integrating AI tools into lesson plans effectively (M = 3.77, SD = 0.89) and selecting appropriate AI tools for different lessons (M = 3.62, SD = 0.82), which both reflect a developing capacity to align technology with instructional needs. Teachers also reported that they can apply AI tools in both online and face-to-face teaching settings (M = 3.58, SD = 0.85) and evaluate the reliability of AI-generated outputs (M = 3.56, SD = 0.80). This indicates moderate confidence in handling AI-supported tasks. Meanwhile, the ability to operate different AI applications confidently obtained a mean of 3.53 (SD = 0.74), which also shows a similar level of competence. The lowest mean was observed in troubleshooting basic technical issues with AI tools (M = 3.07, SD = 0.75), which suggests that while teachers are generally capable users of AI, they may still experience limitations when it comes to resolving technical problems independently. The result points that teachers are more comfortable in applying AI for instructional purposes than in handling more technical aspects of its use.

Table 2: Mean and standard deviation on the attitude toward the use of artificial intelligence (AI) tools in teaching in terms of practical knowledge

Indicators	Mean	SD	Interpretation
1. I can use AI tools to prepare instructional materials.	3.99	0.80	Agree
2. I can operate different AI applications confidently.	3.53	0.74	Agree
3. I can troubleshoot basic technical issues with AI tools.	3.07	0.75	Moderately Agree
4. I can select appropriate AI tools for different lessons.	3.62	0.82	Agree
5. I can apply AI tools in both online and face-to-face.	3.58	0.85	Agree
6. I can evaluate the reliability of AI-generated outputs.	3.56	0.80	Agree
7. I can integrate AI tools into my lesson plans effectively.	3.77	0.89	Agree
Average	**3.59**	**0.28**	**Agree**

Legend: 1.00-1.80=Strongly Disagree; 1.81-2.60=Disagree; 2.61-3.40=Moderately Agree; 3.41-.4.20=Agree; 4.21-5.00=Strongly Agree

Table 3 presents the mean and standard deviation of teachers' attitudes toward the use of artificial intelligence (AI) tools in teaching in terms of pedagogical consumption.

Table 3: Mean and standard deviation on the attitude toward the use of artificial intelligence (AI) tools in teaching in terms of pedagogical consumption

Indicators	Mean	SD	Interpretation
1. I integrate AI tools in classroom instruction to enhance learning.	3.80	0.85	Agree
2. I use AI to support learners with different learning styles.	3.80	0.85	Agree
3. I encourage students to use AI responsibly for academic tasks.	3.55	1.02	Agree
4. I believe AI tools increase student motivation and engagement.	3.54	0.99	Agree
5. I value the role of AI in improving teaching strategies.	3.90	0.83	Agree
6. I use AI tools to assess student performance.	3.24	0.83	Moderately Agree
7. I promote critical thinking when students use AI-assisted learning tools.	3.53	0.99	Agree
Average	**3.62**	**0.23**	**Agree**

Legend: 1.00-1.80=Strongly Disagree; 1.81-2.60=Disagree; 2.61-3.40=Moderately Agree; 3.41-.4.20=Agree; 4.21-5.00=Strongly Agree

The results suggest that teachers generally have a favorable orientation toward using AI in instructional practices, with an overall mean of 3.62 and a standard deviation of 0.23. Looking closely, the highest mean is observed in valuing the role of AI in improving teaching strategies (M = 3.90, SD = 0.83), showing that teachers recognize its usefulness in enhancing their instructional approach. This is closely followed by integrating AI tools in classroom instruction (M = 3.80, SD = 0.85) and using AI to support learners with different learning styles (M = 3.80, SD = 0.85). This means that AI is being considered as a practical support tool in addressing diverse learner needs. Teachers also expressed agreement on encouraging students to use AI responsibly for academic tasks (M = 3.55, SD = 1.02) and

on the belief that AI increases student motivation and engagement (M = 3.54, SD = 0.99). Promotion of critical thinking in AI-assisted learning also obtained a mean of 3.53 (SD = 0.99), which translates to an awareness of the need for balanced use of technology in learning. Meanwhile, the lowest mean is seen in the use of AI tools for assessing student performance (M = 3.24, SD = 0.83), which suggests that this particular application is less commonly practiced compared to instructional support functions. Overall, teachers are more inclined to use AI for enhancing instruction and supporting learners than for assessment-related tasks.

Table 4 presents the summary of the mean and standard deviation on the attitude toward the use of artificial intelligence (AI) tools in teaching across the different dimensions.

Table 4: Summary table on the attitude toward the use of artificial intelligence (AI) tools in teaching

Dimensions	Mean	SD	Interpretation
Theoretical Knowledge	4.36	0.09	Very High
Practical Knowledge	3.59	0.28	High
Pedagogical Consumption	3.62	0.23	High
Overall	**3.86**	**0.44**	**High**

Legend: 1.00-1.80=Strongly Disagree; 1.81-2.60=Disagree; 2.61-3.40=Moderately Agree; 3.41-.4.20=Agree; 4.21-5.00=Strongly Agree

The results indicate that teachers generally hold a positive attitude toward the integration of Artificial Intelligence (AI) tools in teaching, with an overall mean score of 3.86 (SD = 0.44), interpreted as High. Among the three dimensions, Theoretical Knowledge achieved the highest mean of 4.36 (SD = 0.09), interpreted as Very High, reflecting teachers' strong grasp of AI concepts and principles and their awareness of its theoretical importance in education. Meanwhile, Practical Knowledge scored 3.59 (SD = 0.28), interpreted as High, suggesting that teachers are fairly confident in applying AI tools in classroom practice, though there remains room for improvement in hands-on application. Similarly, Pedagogical Consumption recorded a mean of 3.62 (SD = 0.23), also interpreted as High, indicating that teachers view AI positively as a means to enhance teaching strategies and instructional processes. Taken together, these findings highlight that while teachers demonstrate strong theoretical understanding and favorable attitudes toward AI integration, further development of their practical application skills is essential to fully maximize the pedagogical benefits of AI tools in education.

Perceived Effectiveness of Artificial Intelligence (AI) Tools in Teaching

Tables 5 to 9 present the perceived effectiveness of AI tools in teaching using mean and standard deviation.

Table 5 presents the mean and standard deviation on the perceived effectiveness of artificial intelligence (AI) tools in teaching in terms of personalized training.

Table 5: Mean and standard deviation on the perceived effectiveness of artificial intelligence (AI) tools in teaching in terms of personalized training

Indicators	Mean	SD	Interpretation
1. AI tools help identify students' individual learning needs.	3.52	0.92	Agree
2. AI tools provide feedback tailored to the learner's performance.	3.50	0.86	Agree
3. AI supports customized lesson planning for diverse learners.	3.80	0.93	Agree
4. AI applications help track learners' progress more effectively.	3.42	0.87	Agree
5. AI enhances my ability to adjust lessons based on student data.	3.63	0.83	Agree
6. AI tools help design activities that match students' learning pace.	4.11	0.76	Agree
7. AI applications assist in identifying learners who need additional support.	3.59	0.92	Agree
Average	**3.65**	**0.23**	**Agree**

Legend: 1.00-1.80=Strongly Disagree; 1.81-2.60=Disagree; 2.61-3.40=Moderately Agree; 3.41-.4.20=Agree; 4.21-5.00=Strongly Agree

The results show that teachers perceive Artificial Intelligence (AI) tools as effective in supporting personalized training, with an overall mean of 3.65 (SD = 0.23), interpreted as Agree. Specifically, teachers agree that AI helps identify individual learning needs (M = 3.52, SD = 0.92), provides tailored feedback (M = 3.50, SD = 0.86), supports customized lesson planning (M = 3.80, SD = 0.93), and tracks learner progress more effectively (M = 3.42, SD = 0.87). They also acknowledge that AI enhances their ability to adjust lessons based on student data (M = 3.63, SD = 0.83), assists in designing activities that match students' learning pace (M = 4.11, SD = 0.76), and helps identify learners needing additional support (M = 3.59, SD = 0.92). Overall, these findings suggest that teachers recognize the value of AI tools in facilitating personalized instruction, particularly in adapting lessons and activities to meet diverse student needs.

Table 6 presents the mean and standard deviation of the perceived effectiveness of artificial intelligence (AI) tools in teaching in terms of time efficiency.

Table 6: Mean and standard deviation on the perceived effectiveness of artificial intelligence (AI) tools in teaching in terms of time efficiency

Indicators	Mean	SD	Interpretation
1. AI tools save time in lesson preparation and grading.	4.13	0.86	Agree
2. AI reduces repetitive and administrative tasks.	3.99	0.87	Agree
3. AI speeds up content creation for classroom use.	4.05	0.80	Agree
4. AI tools allow me to spend more time engaging with students.	3.88	0.87	Agree
5. AI improves overall productivity in teaching tasks.	3.88	0.84	Agree
6. AI helps automate routine classroom management tasks.	3.76	0.88	Agree
7. AI tools make lesson revisions faster and easier.	4.00	0.89	Agree
Average	**3.96**	**0.12**	**Agree**

Legend: 1.00-1.80=Strongly Disagree; 1.81-2.60=Disagree; 2.61-3.40=Moderately Agree; 3.41-.4.20=Agree; 4.21-5.00=Strongly Agree

The results indicate that teachers perceive Artificial Intelligence (AI) tools as effective in improving time efficiency in teaching, with an overall mean of 3.96 (SD = 0.12), interpreted as Agree. Teachers agree that AI saves time in lesson preparation and grading (M = 4.13, SD = 0.86), reduces repetitive and administrative tasks (M = 3.99, SD = 0.87), speeds up content creation (M = 4.05, SD = 0.80), and allows more time for student engagement (M = 3.88, SD = 0.87). They also recognize that AI improves overall productivity (M = 3.88, SD = 0.84), helps automate routine classroom management tasks (M = 3.76, SD = 0.88), and makes lesson revisions faster and easier (M = 4.00, SD = 0.89). Further, these findings suggest that teachers acknowledge the role of AI tools in streamlining instructional tasks, reducing workload, and enhancing efficiency, thereby enabling them to devote more time to meaningful interactions with students.

Table 7 presents the mean and standard deviation of the perceived effectiveness of artificial intelligence (AI) tools in teaching in terms of research and data-driven inputs.

Table 7: Mean and standard deviation on the perceived effectiveness of artificial intelligence (AI) tools in teaching in terms of research and data-driven inputs

Indicators	Mean	SD	Interpretation
1. AI tools assist in collecting and analyzing student data.	3.70	0.88	Agree
2. AI provides evidence-based recommendations for instruction.	3.83	0.83	Agree
3. AI enhances access to updated and reliable educational content.	3.94	0.83	Agree
4. AI tools help me generate reports and summaries efficiently.	3.88	0.84	Agree
5. AI supports decision-making in improving classroom practices.	3.79	0.83	Agree
6. AI assists in interpreting assessment results for instructional improvement.	3.78	0.85	Agree
7. AI provides insights for developing evidence-based teaching strategies.	3.82	0.85	Agree
Average	**3.82**	**0.08**	**Agree**

Legend: 1.00-1.80=Strongly Disagree; 1.81-2.60=Disagree; 2.61-3.40=Moderately Agree; 3.41-.4.20=Agree; 4.21-5.00=Strongly Agree

The results indicate that teachers perceive Artificial Intelligence (AI) tools as effective in supporting research and data-driven inputs, with an overall mean of 3.82 (SD = 0.08), interpreted as Agree. Teachers agree that AI assists in collecting and analyzing student data (M = 3.70, SD = 0.88), provides evidence-based recommendations for instruction (M = 3.83, SD = 0.83), enhances access to updated and reliable educational content (M = 3.94, SD = 0.83), and helps generate reports and summaries efficiently (M = 3.88, SD = 0.84). They also acknowledge that AI supports decision-making in improving classroom practices (M = 3.79, SD= 0.83), aids in interpreting assessment results for instructional improvement (M = 3.78, SD = 0.85), and provides insights for developing evidence-based teaching strategies (M = 3.82, SD = 0.85). Thus, these findings suggest that teachers recognize the value of AI tools in strengthening data-driven instruction and enhancing the quality of educational decision-making.

Table 8 presents the mean and standard deviation of the perceived effectiveness of artificial intelligence (AI) tools in teaching in terms of enhanced learning engagement.

The results indicate that teachers perceive Artificial Intelligence (AI) tools as effective in enhancing learning engagement, with an overall mean of 3.90 (SD = 0.20), interpreted as Agree. Teachers strongly agree that AI makes lessons more interactive and interesting (M = 4.30, SD = 0.86), and they agree that AI encourages active student participation (M = 3.83, SD = 0.82), supports creative and innovative learning activities (M = 3.98, SD = 0.77), and promotes collaboration and communication among students (M = 3.88, SD = 0.85). They also recognize that AI helps maintain focus and enthusiasm during class (M = 3.72, SD = 0.85), encourages exploration beyond the standard curriculum (M = 3.86, SD = 0.83), and fosters

independent learning (M = 3.73, SD = 0.90). Therefore, these findings suggest that teachers acknowledge the role of AI tools in making lessons more engaging, interactive, and supportive of both collaborative and independent learning experiences.

Table 9 presents the summary of the mean and standard deviation on the perceived effectiveness of artificial intelligence (AI) tools in teaching across different dimensions.

Table 8: Mean and standard deviation on the perceived effectiveness of artificial intelligence (AI) tools in teaching in terms of enhanced learning engagement

Indicators	Mean	SD	Interpretation
1. AI tools make lessons more interactive and interesting.	4.30	0.86	Strongly Agree
2. Students participate more actively when AI tools are used.	3.83	0.82	Agree
3. AI supports creative and innovative learning activities.	3.98	0.77	Agree
4. AI promotes collaboration and communication among students.	3.88	0.85	Agree
5. AI tools help maintain students' focus and enthusiasm during class.	3.72	0.85	Agree
6. AI encourages students to explore topics beyond the standard curriculum.	3.86	0.83	Agree
7. AI tools foster independent learning among students.	3.73	0.90	Agree
Average	**3.90**	**0.20**	**Agree**

Legend: 1.00-1.80=Strongly Disagree; 1.81-2.60=Disagree; 2.61-3.40=Moderately Agree; 3.41-.4.20=Agree; 4.21-5.00=Strongly Agree

Table 9: Summary table on the perceived effectiveness of artificial intelligence (AI) tools in teaching

Dimensions	Mean	SD	Interpretation
Personalized Training	3.65	0.23	Effective
Time Efficiency	3.96	0.12	Effective
Research and Data-Driven Inputs	3.82	0.08	Effective
Enhanced Learning Engagement	3.90	0.20	Effective
Overall	**3.83**	**0.13**	**Effective**

Legend: 1.00-1.80=Not Effective; 1.81-2.60=Slightly Effective; 2.61-3.40=Moderately Effective; 3.41-.4.20=Effective; 4.21-5.00=Very Effective

The data reveal that teachers perceive Artificial Intelligence (AI) tools as effective in multiple dimensions of teaching, with an overall mean of 3.83 (SD = 0.13), interpreted as Effective. Among the four dimensions, time efficiency obtained the highest mean of 3.96 (SD = 0.12), showing that teachers strongly value AI's ability to streamline lesson preparation, grading, and administrative tasks, thereby allowing more time for meaningful student engagement. Enhanced learning engagement followed closely with a mean of 3.90 (SD = 0.20), highlighting teachers' recognition of AI's role in making lessons more interactive, fostering collaboration, and encouraging independent learning. Research and data-driven inputs scored 3.82 (SD = 0.08), reflecting teachers' appreciation of AI's capacity to analyze student data, generate evidence-based insights, and support instructional decision-making. Personalized training, with a mean of 3.65 (SD = 0.23), was also rated effective, indicating that teachers acknowledge AI's potential to tailor feedback, adjust lessons, and design activities suited to diverse learning needs, though this area shows slightly lower effectiveness compared to others. Taken together, these findings suggest that teachers view AI as a valuable tool that enhances efficiency, engagement, and evidence-based practice in education, while also pointing to the need for further strengthening its role in personalized learning to maximize its impact on student outcomes.

Test of Difference in the Level of Attitude in Using Artificial Intelligence (AI) Tools in Teaching among Public School Teachers when Grouped According to their Demographic Profile

Tables 10 and 11 present the Kruskal-Wallis test results on the differences in the level of attitude in using artificial intelligence (AI) tools in teaching when respondents are grouped according to their demographic profile.

Table 10: Kruskal-Wallis test of differences in the level of attitude in using artificial intelligence (AI) tools in teaching among public school teachers when grouped according to their demographic profile

Profile	Dimensions					
	Theoretical Knowledge		Practical Knowledge		Pedagogical Consumption	
	H	Sig.	H	Sig.	H	Sig.
Age	1.766^{ns}	0.622	2.815^{ns}	0.421	0.111^{ns}	0.991

Gender	1331.500^{ns}	0.483	1333.000^{ns}	0.478	1437.000^{ns}	0.169
Civil Status	1.370^{ns}	0.713	1.434^{ns}	0.697	4.840^{ns}	0.184
Highest Educational Attainment	1329.000^{ns}	0.106	1311.000^{ns}	0.123	1483.500^{ns}	0.450
Length of Service	3.934^{ns}	0.269	6.282^{ns}	0.099	1.129^{ns}	0.770
Grade Level Handled	6.498*	0.039	9.939**	0.007	3.910^{ns}	0.142

*Level of significance at 0.05; ns-not significant; *-significant; **- highly significant*

The Kruskal-Wallis test results show that most demographic variables such as age, gender, civil status, highest educational attainment, and length of service do not significantly influence teachers' attitudes toward the use of Artificial Intelligence (AI) tools in teaching across the dimensions of theoretical knowledge, practical knowledge, and pedagogical consumption. This suggests that teachers' attitudes toward AI integration are generally consistent regardless of these demographic factors. However, grade level handled emerged as a significant factor, with results showing a statistically significant difference in theoretical knowledge ($H = 6.498$, $p = 0.039$) and a highly significant difference in practical knowledge ($H = 9.939$, $p = 0.007$). This indicates that the grade level teachers are assigned to has a meaningful impact on their theoretical understanding and practical application of AI tools, possibly due to differences in curriculum demands, student needs, or instructional strategies required at various grade levels. No significant difference was found in pedagogical consumption across demographic profiles, implying that teachers share similar views on the pedagogical value of AI regardless of their background. Overall, these findings highlight that while demographic characteristics generally do not shape attitudes toward AI, the grade level handled plays a crucial role in influencing how teachers perceive and apply AI tools in their teaching practice.

Table 11 presents the post-hoc test results showing the differences in the level of attitude toward the use of artificial intelligence (AI) tools in teaching in terms of theoretical and practical knowledge when grouped according to grade level handled.

The post-hoc test results reveal that significant differences in teachers' attitudes toward the use of Artificial Intelligence (AI) tools in teaching are evident when grouped according to the grade level they handle, particularly in the dimensions of theoretical knowledge and practical knowledge. For theoretical knowledge, both senior high (Grades 11–12) and junior high (Grades 7–10) teachers showed significantly higher attitudes compared to elementary teachers (Kinder–Grade 6), with test statistics of 18.146 ($p = 0.014$) and 18.440 ($p = 0.011$), respectively. However, no significant difference was observed between senior high and junior high teachers ($p = 0.412$). In terms of practical knowledge, senior high teachers also differed significantly from elementary teachers (test statistic = 20.724, $p = 0.020$), while junior high teachers demonstrated a highly significant difference compared to elementary teachers (test statistic = 22.802, $p = 0.002$). Again, no significant difference was found between senior high and junior high teachers ($p = 0.336$). These findings suggest that teachers handling higher grade levels, both junior and senior high, tend to exhibit stronger theoretical understanding and greater confidence in the practical application of AI tools compared to those teaching at the elementary level. This may be attributed to the more complex curricular demands and the greater exposure to technology integration in higher grade levels, underscoring the need to provide additional support and training for elementary teachers to strengthen their theoretical and practical competencies in AI integration.

Table 11: Post-hoc test of difference in the level of attitude in using artificial intelligence (AI) tools in teaching in terms of theoretical knowledge and practical knowledge when grouped according to their grade level handled

Dimensions	**Family Type**		**Test Statistic**	**Sig.**
Theoretical Knowledge	Senior High (Grade 11-12)	Elementary (Kinder; Grade 1-6)	18.146*	0.014
	Junior High (Grade 7-10)	Elementary (Kinder; Grade 1-6)	18.440*	0.011
	Senior High (Grade 11-12)	Junior High (Grade 7-10)	10.294^{ns}	0.412
Practical Knowledge	Senior High (Grade 11-12)	Elementary (Kinder; Grade 1-6)	20.724*	0.020
	Junior High (Grade 7-10)	Elementary (Kinder; Grade 1-6)	22.802**	0.002
	Senior High (Grade 11-12)	Junior High (Grade 7-10)	12.078^{ns}	0.336

*Level of significance at 0.05; ns-not significant; *-significant; **- highly significant*

Test of Difference in the Level of Effectiveness in Using Artificial Intelligence (AI) Tools in Teaching among Public School Teachers when Grouped According to their Demographic Profile

Table 12 presents the results of the Kruskal–Wallis test examining whether there are significant differences in the perceived effectiveness of using artificial intelligence (AI) tools in teaching when teachers are grouped according to their demographic profile.

The Kruskal-Wallis test results show that there are

Table 12: Kruskal-Wallis test of differences in the level of effectiveness in using artificial intelligence (AI) tools in teaching among public school teachers when grouped according to their demographic profile

Profile	Dimensions							
	Personalized Training		Time Efficiency		Research and Data-Driven Inputs		Enhanced Learning Engagement	
	H	Sig.	H	Sig.	H	Sig.	H	Sig.
Age	4.978^{ns}	0.173	6.992^{ns}	0.072	6.914^{ns}	0.075	1.899^{ns}	0.594
Gender	1372.000^{ns}	0.337	1388.500^{ns}	0.353	1435.500^{ns}	0.170	1537.500^{ns}	0.052
Civil Status	1.517^{ns}	0.678	2.000^{ns}	0.572	1.832^{ns}	0.608	4.767^{ns}	0.190
Highest Educational Attainment	1308.000^{ns}	0.083	1406.500^{ns}	0.235	1327.000^{ns}	0.103	1273.500^{ns}	0.053
Length of Service	6.386^{ns}	0.094	4.102^{ns}	0.251	3.960^{ns}	0.266	3.359^{ns}	0.339
Grade Level Handled	1.717^{ns}	0.424	4.693^{ns}	0.096	3.860^{ns}	0.145	0.899^{ns}	0.638

*Level of significance at 0.05; ns-not significant; *-significant; **- highly significant*

no statistically significant differences in the perceived effectiveness of Artificial Intelligence (AI) tools in teaching when public school teachers are grouped according to their demographic profiles. Across the four dimensions of personalized training, time efficiency, research and data-driven inputs, and enhanced learning engagement, variables such as age, gender, civil status, highest educational attainment, length of service, and grade level handled did not reach the 0.05 level of significance. Although some values were close to the threshold, such as age in time efficiency (p = 0.072) and research and data-driven inputs (p = 0.075), gender in enhanced learning engagement (p = 0.052), and highest educational attainment in personalized training (p = 0.083) and research inputs (p = 0.103), these remained non-significant. This indicates that teachers, regardless of demographic background, generally share similar perceptions of the effectiveness of AI tools in teaching. The consistency of these findings suggests that the perceived benefits of AI are broadly recognized across diverse teacher groups, reinforcing the idea that effectiveness is not shaped by demographic characteristics but rather reflects a collective acknowledgment of AI's potential to improve instructional practices.

Test of Prediction for the Level of Effectiveness in Using Artificial Intelligence (AI) Tools in Teaching among Public School Teachers Using Technology-Related Profile Variables

Table 13 presents the results of the linear regression analysis examining whether technology-related profile variables can predict the level of effectiveness in using artificial intelligence (AI) tools in teaching among public school teachers.

Table 13: Linear regression on the level of effectiveness in using artificial intelligence (AI) tools in teaching among public school teachers using technology-related profile variables

Profile	Dimensions							
	Personalized Training		Time Efficiency		Research and Data-Driven Inputs		Enhanced Learning Engagement	
	B	Sig.	B	Sig.	B	Sig.	B	Sig.
Gadget commonly used	0.432^{ns}	0.663	0.684^{ns}	0.386	0.301^{ns}	0.704	0.380^{ns}	0.653
Frequency of using gadget	5.412*	0.038	7.470*	0.021	7.539*	0.030	8.229*	0.022
AI tools commonly used	0.317^{ns}	0.674	0.504^{ns}	0.401	0.479^{ns}	0.427	0.167^{ns}	0.795
Presence of other ICT tools	1.835^{ns}	0.114	0.945^{ns}	0.305	0.589^{ns}	0.524	0.107^{ns}	0.914

*Level of significance at 0.05; ns-not significant; *-significant; **- highly significant*

The findings show that among the four technology-related variables, only the frequency of gadget use emerged as a significant predictor across all dimensions of AI effectiveness. Specifically, frequency of use significantly predicted Personalized Training (B = 5.412, p = 0.038), Time Efficiency (B = 7.470, p = 0.021), Research and Data-Driven Inputs (B = 7.539, p = 0.030), and Enhanced Learning Engagement (B = 8.229, p = 0.022). These results suggest that teachers who use gadgets more frequently tend to report higher perceived effectiveness of AI tools in all aspects of teaching. Moreover, the linear regression results show that among the technology-related profile variables, only the frequency of using gadgets significantly predicts the level of effectiveness in

using Artificial Intelligence (AI) tools in teaching across all four dimensions. Specifically, frequency of gadget use was found to have a significant effect on personalized training (B = 5.412, p = 0.038), time efficiency (B = 7.470, p = 0.021), research and data-driven inputs (B = 7.539, p = 0.030), and enhanced learning engagement (B = 8.229, p = 0.022). This indicates that teachers who use their gadgets more frequently tend to perceive AI tools as more effective in supporting personalized instruction, streamlining tasks, providing data-driven insights, and engaging learners. On the other hand, variables such as the type of gadget commonly used, the specific AI tools utilized, and the presence of other ICT tools did not show significant effects, suggesting that effectiveness is not determined by the kind of technology available but rather by how often teachers actively use it. These findings emphasize the importance of consistent and frequent technology use in maximizing the perceived benefits of AI tools in teaching, highlighting that regular engagement with digital devices fosters greater confidence and effectiveness in integrating AI into instructional practices.

Discussions

Technology-Related Profile of the Public School Teachers

The technology-related profile indicates that public school teachers in Sto. Niño District is already actively engaging with digital tools in its teaching practices. The widespread use of laptops and smartphones suggests that teachers rely on accessible and practical devices to support instruction, while the frequent use of these gadgets shows that technology has become part of their regular teaching routine. The use of AI tools, particularly commonly available platforms, reflects a growing openness among teachers to explore innovative approaches in lesson preparation and delivery. However, the limited availability of other ICT resources in schools suggests that while teachers are willing to adopt technology, their capacity to fully maximize AI tools may still be constrained by infrastructural limitations. The implication is that while teachers are already using technology and are open to AI, their effectiveness is limited by insufficient ICT resources and support. Strengthening infrastructure, providing continuous technical assistance, and offering practical, relevant training can help teachers move from basic use to more meaningful integration of AI in teaching. Overall, strong institutional support is essential to maximize the benefits of AI in the classroom.

These findings are consistent with recent Philippine-based studies that identify similar patterns in technology use and AI adoption among teachers. For example, Lucas *et al.* (2024) reported that teachers' confidence and willingness to integrate technology often depend on their digital skills, training, and school support. Similarly, Rubio and Pastor (2025) and Bana *et al.,* (2022) found that personal and professional backgrounds affect how effectively teachers employ AI in instruction. Similarly, Stephen Jay Co (2025) reported that while AI integration in the Philippines varies across educational levels and contexts, teachers' readiness and engagement are more influenced by access, training, and exposure rather than demographic characteristics alone. Likewise, Mangubat and Paglinawan (2025) reported that teachers recognize the potential of AI tools to improve instructional efficiency, support personalized learning, and facilitate teaching tasks, but emphasized that access to tools and proper training remain important factors for maximizing their use. Moreover, Saro *et al.* (2025) revealed that teachers possess a strong understanding of contributing factors, such as personal-related factors, all of which significantly impact teaching performance. These studies support the present findings, showing that while teachers are already using available technologies and are receptive to AI integration, the extent of effectiveness largely depends on resource availability and institutional support. This suggests that strengthening ICT infrastructure and providing targeted training programs are essential steps in enhancing teachers' ability to effectively use AI tools in the classroom.

Teachers' Attitude Toward the Use of Artificial Intelligence (AI) Tools in Teaching

The results on teachers' attitude toward the use of artificial intelligence (AI) tools in teaching suggest that public school teachers in Sto. Niño District possesses a strong conceptual understanding of AI, but its ability to translate this knowledge into actual classroom practice is still developing. Teachers appear well-informed about the basic concepts, benefits, and potential of AI in education, indicating a high level of awareness and openness to innovation. However, their practical skills, such as troubleshooting, selecting appropriate tools, and confidently operating different applications, are not as strongly developed, suggesting a gap between knowledge and application. In terms of pedagogical use, teachers generally show a positive inclination to integrate AI into instruction, particularly to enhance learning experiences and address diverse learner needs, but they are less likely to use AI for more complex tasks such as assessment and data-driven decision-making. These findings imply that while teachers are cognitively ready to adopt AI, there is still a need for capacity-building efforts focused on hands-on training, technical skills development, and deeper pedagogical integration to fully realize the potential of AI tools in teaching. These findings imply that positive teacher attitudes toward AI provide a strong foundation for successful integration, but this alone is not sufficient to ensure effective use. There is a clear need to bridge the gap between knowledge and practice through targeted, hands-on training that enhances technical skills and builds confidence in using AI tools. Professional development should focus not only on understanding AI concepts but also on practical classroom applications, including assessment and data-informed instruction. In addition, sustained institutional support, access to appropriate tools, and continuous mentoring are essential to help

teachers translate their positive attitudes into meaningful and consistent use of AI in teaching.

This finding is supported by a study by Rubio and Pastor (2025), which found that while teachers in the Philippines demonstrate positive attitudes toward AI and recognize its potential to improve teaching and learning, many still face challenges with technical skills and practical application. The study emphasized that teachers' familiarity with AI concepts does not always translate into effective classroom integration, particularly when training and institutional support are limited. This aligns with the present results, which show that although teachers are knowledgeable and open to AI use, their practical and pedagogical application remains an area that requires further development. The findings are further supported by Silagan and Tumapon (2025), showing that teachers with higher levels of technological competence and training tend to exhibit more favorable attitudes toward AI, identifying these factors as strong predictors of acceptance. Similarly, Serdenia *et al.* (2025) found that prospective teachers demonstrated positive attitudes and moderate acceptance of AI, viewing it as beneficial for both teaching and learning, with higher acceptance observed among older participants. Francisco (2025) also reported that public elementary teachers developed positive perceptions of learning with, about, and from AI, emphasizing that increased knowledge leads to more frequent and confident use in practice. In the same vein, Rosqueta (2025) noted that Filipino teachers are generally open and ready to integrate AI as a complement to traditional teaching approaches, particularly in addressing diverse learner needs. Furthermore, Cubio (2025) found that Department of Education personnel expressed positive views on the use of AI for both instructional and administrative purposes, although they acknowledged existing implementation challenges. These studies reinforce the present findings, confirming that while teachers demonstrate strong awareness, openness, and positive attitudes toward AI, there remains a consistent gap between conceptual understanding and actual classroom application.

Perceived Effectiveness of Artificial Intelligence (AI) Tools in Teaching

Artificial intelligence (AI) tools are generally perceived by public school teachers in Sto. Niño District is supportive across multiple instructional functions, particularly in improving teaching efficiency, enhancing learner engagement, and assisting in data-informed decision-making. This suggests that AI is not yet seen as a replacement for teachers, but rather as a supplementary instructional aid that helps streamline workloads and improve teaching quality. It further implies a growing acceptance and readiness among teachers to integrate AI into everyday classroom practices. However, while AI is already useful in lesson delivery and engagement, its full potential in supporting individualized and adaptive instruction is still developing. AI adoption in teaching is currently more task-oriented (e.g., preparation, efficiency, engagement) rather than fully instructional or deeply personalized. The findings suggest that AI has strong potential to enhance instructional efficiency, engagement, and learning outcomes, but realizing this potential requires intentional planning and support. Teachers need guidance on integrating AI tools meaningfully into their instructional design, particularly for individualized and adaptive learning. Professional development should focus not only on technical proficiency but also on pedagogical strategies that leverage AI for sustained learning gains. Additionally, schools must address infrastructural limitations, provide access to appropriate AI platforms, and establish continuous support systems to help teachers implement AI effectively. The successful adoption of AI in teaching depends on combining teacher readiness, strategic instructional planning, and robust institutional support to maximize its benefits for educators and learners alike.

These results align with recent Philippine research that highlights similar perceptions among educators regarding AI's practical benefits and emerging challenges in educational use. For instance, Mangubat and Paglinawan (2025) found that Filipino teachers acknowledge AI tools as helpful for instructional efficiency, personalized learning, and supporting research processes, but noted limitations such as infrastructure challenges and the need for further professional development to maximize AI's potential in the classroom. Additionally, Escorial and Pajo (2025) reviewed AI integration in Philippine education and emphasized that while AI offers opportunities for personalized learning and administrative support, its full implementation is hindered by gaps in access to technology, training, and ethical considerations. These studies support the current findings by showing that teachers' positive perceptions of AI are tempered by practical challenges, reinforcing the need for strategic support, capacity-building, and improved infrastructure to enhance AI's effectiveness in teaching. The findings are further supported by Wang and Fan (2025), who, through a meta-analysis of experimental and quasi-experimental studies, reported that ChatGPT produced significant gains in student learning performance, moderate improvements in learning perception, and enhanced higher-order thinking skills. Their study emphasized that these benefits are most pronounced when AI tools are integrated into sustained, scaffolded learning experiences rather than used in isolation. Similarly, du Plooy *et al.* (2024) conducted a scoping review of 69 studies on personalized and adaptive learning platforms in higher education, finding that 59% reported improved academic performance and 36% reported increased student engagement. Key factors driving these outcomes included pre-knowledge diagnostics, timely feedback, and well-designed instructional strategies. These findings align with the present study, indicating that AI tools can effectively support learning when thoughtfully applied, and that their impact depends on integration, context, and pedagogical design.

Test of Difference in the Level of Attitude in Using Artificial Intelligence (AI) Tools in Teaching among Public School Teachers when Grouped According to their Demographic Profile

The public school teachers in Sto. Niño District generally exhibits a relatively uniform attitude toward the use of artificial intelligence (AI) tools in teaching across most demographic variables. This suggests that factors such as age, gender, civil status, educational attainment, and length of service do not significantly shape how teachers perceive AI. This indicates that acceptance of AI tools may already be widespread and fairly consistent within the teaching workforce, likely influenced by shared exposure to digital tools, common institutional expectations, and similar professional development experiences. The absence of significant differences across most demographic categories also suggests that AI integration in education is becoming a normalized practice rather than one limited to specific groups of teachers. However, the significant differences observed in terms of grade level handled highlight that instructional context plays a more influential role in shaping attitudes, particularly in theoretical and practical knowledge of AI use. Teachers handling different grade levels may vary in their engagement with technology depending on curriculum complexity, learner needs, and classroom demands, which can affect how they perceive and apply AI tools. This implies that AI readiness is more context-dependent than demographic-dependent, emphasizing the importance of targeted training and support based on teaching assignment rather than personal characteristics. Overall, improving AI integration in education may be more effective when interventions are tailored to the classroom context, particularly grade level specialization, rather than demographic grouping

These results are consistent with findings from recent Philippine-based studies where teachers' attitudes toward educational technologies, including AI, are shaped more by professional and contextual factors than by demographic characteristics. Sibug *et al.* (2024) found that Filipino teachers generally exhibit positive and comparable levels of acceptance toward AI integration in teaching, regardless of personal background, but differences in classroom exposure and instructional demands influence how these tools are actually understood and applied in practice. Meanwhile, Obedencio (2025) emphasized that teachers' engagement with AI in Philippine public schools is more strongly associated with their teaching environment and day-to-day instructional responsibilities than with demographic variables such as age or years of service. On the other hand, Mijares (2022) found that while no significant differences emerged in teachers' gender, age, educational attainment, position, ICT-related training, or years of ICT use, their length of service did influence competence, highlighting the need to strengthen professional domain skills through continuous growth, research, innovation, and collaboration. These findings support the present study by reinforcing the idea that while demographic factors may not significantly differentiate attitudes toward AI, contextual factors such as grade level handled and teaching responsibilities play a more critical role in shaping both theoretical understanding and practical application of AI tools in education.

Test of Difference in the Level of Effectiveness in Using Artificial Intelligence (AI) Tools in Teaching among Public School Teachers when Grouped According to their Demographic Profile

The perceived effectiveness of artificial intelligence (AI) tools in teaching among public school teachers in Sto. Niño District is generally consistent across all demographic variables. This suggests that teachers, regardless of age, gender, civil status, educational attainment, length of service, and grade level handled, tend to share similar views on how effective AI tools are in supporting instructional tasks such as personalized training, time efficiency, research and data-driven inputs, and enhanced learning engagement. This uniformity implies that AI tools have become broadly accessible and similarly experienced across different groups of teachers, likely due to shared exposure through institutional training, common teaching resources, and similar school-based implementations. It also suggests that perceptions of AI effectiveness are more influenced by actual classroom exposure and usage experience rather than personal or professional background characteristics. In practical terms, this means that efforts to improve or maximize AI effectiveness in teaching may not need to be differentiated by demographic group, but should instead focus on strengthening overall implementation support, technical training, and integration strategies that benefit all teachers equally.

These results are consistent with those of Dayagbil *et al.* (2025), who reported that Filipino educators generally have comparable levels of perception and readiness for integrating artificial intelligence into teaching, regardless of demographic differences. Their study emphasizes that exposure to technology and institutional support play a more critical role than personal characteristics in shaping how teachers perceive and accept AI tools in education. This supports the present findings, as it similarly shows that demographic variables do not significantly influence teachers' perceived effectiveness of AI tools. Furthermore, the study of Bana *et al.* (2022) showed that school heads believed their schools were ready for online learning, while teachers felt less prepared. School heads emphasized infrastructure, but teachers pointed out problems with training, access to devices, and internet connectivity. Teachers also noted unequal access among students and a lack of professional development. Policy support was seen as weak, and there was a clear gap between the perspectives of leaders and teachers. The study recommended stronger collaboration, better ICT infrastructure, and continuous training to improve readiness. It implies that acceptance and evaluation

of AI are more strongly driven by shared professional experiences and access to technological resources within the school environment rather than individual background factors.

Predictive Analysis of the Level of Effectiveness in Using Artificial Intelligence (AI) Tools in Teaching Among Public School Teachers Using Technology-Related Profile Variables

Among the technology-related variables examined, frequency of gadget use is the only factor that meaningfully predicts the level of effectiveness in using artificial intelligence (AI) tools in teaching. This suggests that regular exposure and continuous interaction with technology are crucial for helping teachers develop confidence, familiarity, and competence in applying AI tools in the classroom. It further implies that teachers who frequently use gadgets are more likely to explore different features of AI tools, integrate them into their teaching practices, and maximize their benefits across various instructional areas. On the other hand, the lack of predictive influence from the type of gadget used, the specific AI tools, and the presence of other ICT resources suggests that availability alone does not guarantee effective use. This highlights an important implication for schools and administrators: investments in technology should be complemented by initiatives that encourage consistent and meaningful use, such as regular training, guided practice, and integration into daily teaching tasks. It also suggests that developing habitual use of technology may be more impactful than simply introducing new tools or upgrading equipment, as effectiveness appears to be built through repeated and sustained engagement rather than access alone.

These results are supported by the study of Caratiquit and Javier (2025), which found that teachers' ICT competence and attitudes toward technology are strongly influenced by techno-efficacy and actual engagement with digital tools. Likewise, Ongayo and Quilestino (2023) reported that the use of ICT itself plays a mediating role in improving teachers' competencies and attitudes, indicating that frequent technology use strengthens both skill development and instructional application. These studies align with the present findings by showing that it is not merely access to technology, but the extent to which it is actively and consistently used, that significantly contributes to teachers' perceived effectiveness in integrating AI tools in education.

CONCLUSION

The study revealed that public school teachers were predominantly middle-aged, female, married, academically qualified, and experienced, with many assigned to the elementary level. Despite limited ICT resources, they actively integrated technology into instruction, frequently using digital devices and AI tools such as ChatGPT. Teachers displayed favorable attitudes toward AI, showing strong theoretical knowledge but less developed practical and pedagogical applications, indicating a shift from conceptual awareness to meaningful classroom integration. AI was perceived as effective in enhancing instructional delivery by saving time, engaging learners, strengthening research, supporting data-informed instruction, and enabling personalized learning. Perceptions of AI remained consistent across demographic groups, though differences in practical competence varied by grade level taught. These findings highlight the importance of sustained engagement with technology, as consistent use fosters competence and maximizes educational outcomes. Based on these results, schools are encouraged to strengthen policies that promote regular use of digital tools and AI, supported by professional development programs focused on hands-on training and lesson integration. Teachers should be trained to apply AI for personalized instruction, automate routine tasks, and design interactive learning activities. Future research should explore related factors such as digital literacy, institutional support, and teacher self-efficacy to further advance AI integration in education.

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