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# Artificial Intelligence Readiness among Public Elementary School Teachers in Mercedes District: A Descriptive – Comparative Study of Technology Self-Efficacy, Student Interaction, and Ethical Awareness

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**Abstract.** This study assessed the artificial intelligence readiness of public elementary school teachers in Mercedes District, addressing the limited evidence on multidimensional readiness among elementary teachers in Philippine district settings. Specifically, it determined the overall level of readiness and the levels of technology self-efficacy, student interaction, and ethical awareness. It also examined whether readiness differed according to age, sex, highest educational attainment, and years of teaching experience. A quantitative descriptive-comparative research design was employed, involving 207 public elementary school teachers who completed the 19-item Readiness for Artificial Intelligence Applications Scale, consisting of six technology self-efficacy items, seven student interaction items, and six ethical awareness items. Mean and standard deviation were used to describe readiness levels, while the Mann–Whitney U test and Kruskal–Wallis H test examined differences between groups. The Holm correction was applied to the p-values of the 16 omnibus tests to account for multiple testing. The findings showed that respondents had an overall Agree level of readiness (mean = 4.10, standard deviation = 0.55). Ethical awareness obtained the highest rating and was interpreted as Strongly Agree (mean = 4.38, standard deviation = 0.50), while student interaction (mean = 3.99, standard deviation = 0.64) and technology self-efficacy (mean = 3.96, standard deviation = 0.72) were interpreted as Agree. After applying the Holm correction, no statistically significant differences were found according to age, sex, highest educational attainment, or years of teaching experience. Overall, the findings indicate positive readiness, with ethical awareness as the highest-rated dimension and opportunities to strengthen teachers' technological confidence and student interaction. These findings may guide context-specific professional development initiatives to strengthen teachers' technological confidence, pedagogical application, and responsible use of artificial intelligence in elementary education.

***Keywords:*** Artificial Intelligence Readiness; Ethical Awareness; Public Elementary School Teachers; Student Interaction; Technology Self-Efficacy

## Introduction

Artificial Intelligence (AI) has become an increasingly important part of the continuously evolving teaching and learning environment. Its growing integration into educational settings has created opportunities for instructional planning, learning resource development, learner engagement, assessment, and other educational activities (Ramazanoglu & Akın, 2025). As technology continues to advance, educational institutions are expected to utilize emerging technologies in ways that are relevant to their instructional contexts.

In the Philippine basic education system, this development is particularly significant as the Department of Education (DepEd) continues to promote a relevant, responsive, and future-oriented educational program through the MATATAG Agenda and Curriculum (Department of Education, 2023). However, the integration of AI into education involves more than simply providing access to technological tools. Teachers also need to be prepared and properly equipped to use AI in meaningful, appropriate, and responsible ways. Understanding teacher readiness is therefore important in determining how teachers may respond to the growing integration of AI into teaching and learning (Chiu et al., 2025; Ramazanoglu & Akın, 2025).

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Teacher readiness for AI is a multidimensional construct that encompasses more than the ability to operate technological tools (Chiu et al., 2025; Ramazanoglu & Akın, 2025). In this study, the Readiness for Artificial Intelligence Applications Scale (RAIS) developed by Ramazanoglu and Akın (2025) was used to assess public elementary school teachers' readiness through three dimensions: Technology Self-Efficacy, Student Interaction, and Ethical Awareness.

Technology Self-Efficacy refers to teachers' perceived capability and confidence in engaging with AI-related technologies and performing AI-related tasks. Student Interaction refers to teachers' readiness to appropriately involve and engage learners in the integration of AI into teaching and learning. Ethical Awareness refers to teachers' recognition and consideration of ethical issues associated with the use of AI in education. The adopted RAIS consists of 19 items distributed across these three dimensions (Ramazanoglu & Akın, 2025). Together, these dimensions represent distinct yet complementary aspects of teacher readiness. Technology Self-Efficacy concerns teachers' perceived ability to use AI technologies, Student Interaction emphasizes the pedagogical and learner-centered aspects of AI integration, and Ethical Awareness highlights the importance of responsible and appropriate AI use in educational settings (Ramazanoglu & Akın, 2025).

The study is also informed by four theoretical perspectives that help explain the technological, pedagogical, behavioral, and ethical aspects of AI readiness. Social Cognitive Theory provides a basis for understanding teachers' perceived capability and self-efficacy. The Technological Pedagogical Content Knowledge (TPACK) Framework emphasizes the integration of technology, pedagogy, content, and learners' needs. The Technology Acceptance Model (TAM) offers further understanding of perceived usefulness and ease of use, while the UNESCO AI Competency Framework for Teachers emphasizes human-centered, pedagogically appropriate, and ethically responsible engagement with AI (Chiu et al., 2025).

Despite the growing body of literature on teachers' readiness for AI, research focusing on public elementary school teachers in the Philippines remains insufficient. Existing studies have examined AI readiness, AI competence, AI literacy, self-efficacy, ethical awareness, and technology-related preparedness across various countries and educational contexts. These studies suggest that teacher AI readiness involves multiple dimensions rather than a single technological skill. In particular, the RAIS provides a multidimensional measure comprising Technology Self-Efficacy, Student Interaction, and Ethical Awareness. Further research is needed to examine the application of this framework in elementary education, particularly in Philippine public schools (Chiu et al., 2025; Ramazanoglu & Akın, 2025).

This study assessed the artificial intelligence readiness of public elementary school teachers in Mercedes District by determining their overall level of readiness and their levels of readiness in Technology Self-Efficacy, Student Interaction, and Ethical Awareness. It also examined whether significant differences existed in overall readiness and its three dimensions when teachers were grouped according to age, sex, highest educational attainment, and years of teaching experience. As a descriptive-comparative study, it aimed to describe teachers' readiness and examine differences among groups rather than establish causal relationships or determine the effects of an intervention. The findings may provide localized evidence to help identify teachers' professional learning needs and inform appropriate institutional support for the responsible integration of artificial intelligence in elementary education.

## Research Questions

This study aims to assess the Artificial Intelligence Readiness of public elementary school teachers in Mercedes District through a multidimensional comparative assessment of Technology Self-Efficacy, Student Interaction, and Ethical Awareness. Specifically, it seeks to answer the following questions:

1. What is the level of Artificial Intelligence Readiness among public elementary school teachers in Mercedes District, overall and in terms of Technology Self-Efficacy, Student Interaction, and Ethical Awareness?
2. Is there a significant difference in the Artificial Intelligence Readiness of elementary school teachers, both overall and across its three dimensions, when grouped according to:
   2.1 Age;
   2.2 Sex;
   2.3 Highest Educational Attainment; and
   2.4 Years of Teaching Experience?

## Scope and Delimitation of the Study

The study focuses on the Artificial Intelligence Readiness of public elementary school teachers in Mercedes District. It specifically examines AI readiness through three dimensions: Technology Self-Efficacy, Student Interaction, and Ethical Awareness. The study focuses on describing and comparing the overall level of Artificial Intelligence Readiness and the level of readiness reflected in each of its three dimensions. It also examines whether significant differences exist when teachers are grouped according to selected demographic

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and professional characteristics. The participants of the study consisted of eligible public elementary school teachers from the 22 public schools within Mercedes District, Department of Education, Division of Zamboanga City. Based on the available population data, the district had a total of 380 elementary school teachers. All eligible teachers were invited to participate in the study to maximize participation and representation across the schools. Participation was voluntary and subject to informed consent. The study used a structured survey questionnaire based on the Readiness for Artificial Intelligence Applications Scale (RAIS) developed by Ramazanoglu and Akın (2025). The adopted scale contains 19 items distributed across Technology Self-Efficacy (6 items), Student Interaction (7 items), and Ethical Awareness (6 items), using a five-point Likert-type response format. The quantitative data were analyzed using descriptive and inferential statistical procedures. Mean and standard deviation were used to describe the overall AI readiness and its three dimensions, while appropriate comparative statistical tests were employed to determine whether significant differences exist across the selected respondent groups. The study is delimited to the specified district and teacher population; hence, its findings are intended primarily to describe the AI readiness profile within the study context and should not automatically be generalized to all elementary teachers in the Philippines.

## Literature Review

### Artificial Intelligence Readiness in Education

As Artificial Intelligence (AI) becomes increasingly integrated into educational settings, there is a growing need to examine whether teachers are equipped to engage with AI in a meaningful, pedagogically effective, and responsible way. AI readiness involves more than simply having access to technology or being at ease with it. Wang et al. (2023) examined cognition, ability, vision, and ethical considerations within the context of Artificial Intelligence (AI) integration in education. In their extensive study of elementary teachers, they found that these factors were connected to teachers' AI-driven creativity. Their findings highlighted that preparation involves not merely one technological competency but a combination of interconnected elements of professional readiness. The study also revealed that ethical concerns were linked to teachers' understanding, competence, and perspectives on the utilization of AI.

Similarly, Ayanwale et al. (2022) studied the readiness and intention of 368 in-service teachers, from elementary to high school, to teach AI. The results indicated that confidence in teaching AI predicted teachers' intention to teach AI, whereas the perceived relevance of AI was a primary predictor of AI readiness. However, not all variables examined in their model served as significant predictors. In particular, AI anxiety did not significantly predict teachers' intention to teach AI, while perceptions of AI for social good did not significantly predict AI readiness.

The conceptualization of AI readiness has also continued to develop. Ramazanoglu and Akın (2025) defined readiness as a cognitive, affective, and behavioral state linked to performing a behavior or utilizing a technology. Their work is particularly relevant to the present study because they developed the Readiness for Artificial Intelligence Applications Scale (RAIS) specifically to assess teachers' readiness for AI. The resulting scale consists of three dimensions: Technology Self-Efficacy, Student Interaction, and Ethical Awareness. The three-factor structure was supported through exploratory and confirmatory factor analyses, with evidence of validity and reliability.

The RAIS thus operationalizes teachers' readiness for AI applications through its three validated dimensions of Technology Self-Efficacy, Student Interaction, and Ethical Awareness, providing a multidimensional basis for assessing teacher readiness. In the present study, AI readiness is operationalized through these three dimensions of the RAIS.

The development of AI-related measurement instruments demonstrates that AI readiness is an evolving concept. For instance, Chiu et al. (2025) developed the Teacher Artificial Intelligence Competency Self-Efficacy Scale (TAICS), which has six dimensions: AI knowledge, AI pedagogy, AI assessment, AI ethics, human-centered education, and professional engagement. Their findings support the multidimensionality of teachers' AI competence. Similarly, Rojas Guillén (2026) conducted a scoping review of 70 studies and found that teacher AI literacy extends beyond technical skills. It includes understanding AI's potential and limitations, adapting AI tools to classroom needs, evaluating AI-generated outputs, and assessing whether AI supports learning. Readiness was also connected with self-efficacy, perceived usefulness, institutional support, resources, infrastructure, and professional responsibility.

These studies suggest that there is no single universally adopted conceptualization of teacher AI readiness. Nevertheless, a common pattern is evident: to interact effectively with AI, teachers need technological capability, pedagogical judgment, confidence, and ethical awareness. This multidimensional perspective provides a strong basis for examining AI readiness among public elementary school teachers in the present study.

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## Theoretical Foundations of Teacher AI Readiness

Teachers' readiness for artificial intelligence (AI) can be contextualized within established educational and technology-related paradigms. Bandura's (1986) Social Cognitive Theory, particularly the concept of self-efficacy, provides a fundamental basis. Self-efficacy refers to a person's beliefs about their capability to perform specific behaviors successfully. Such beliefs affect how people approach tasks, how much effort they exert, how persistent they are when facing obstacles, and how they respond to failure. In AI-enabled education, teachers' confidence in their ability to engage effectively with AI-related technology may influence their willingness to explore and use these technologies in professional practice.

This theoretical perspective is supported by empirical evidence. Ayanwale et al. (2022) found a relationship between teachers' confidence in teaching AI and their intention to teach AI. Similarly, Sumandal (2023) examined teachers' self-efficacy regarding AI-driven educational resources and highlighted the importance of teachers' perceived capabilities when using AI-supported educational technologies. Chiu et al. (2025) also identified AI competency self-efficacy as a salient component of teacher AI competence.

An additional relevant theoretical framework is the Technology Acceptance Model (TAM), introduced by Davis (1989). According to TAM, an individual's acceptance of technology is influenced by perceived usefulness and ease of use. Although the present study does not examine technology acceptance as a separate variable, the framework helps explain teachers' perceptions of AI and their confidence in using it, which may, in turn, relate to their readiness to engage with AI technologies.

Similarly, the Technological Pedagogical Content Knowledge (TPACK) framework of Mishra and Koehler (2006) emphasizes that effective technology integration requires more than technological knowledge. Teachers need to understand the relationship among technology, pedagogy, and content. This is particularly relevant to AI because knowing how an AI tool works does not necessarily provide a teacher with the knowledge needed to utilize it effectively for instruction, learner engagement, assessment, or classroom interaction.

These theoretical viewpoints complement rather than replace one another. Social Cognitive Theory helps explain teachers' perceived capability; the Technology Acceptance Model (TAM) offers insights into technology acceptance; and the Technological Pedagogical Content Knowledge (TPACK) framework emphasizes the integration of technology with pedagogy and content. Collectively, these frameworks support the perspective that teacher AI readiness is a multidimensional phenomenon involving technological, behavioral, pedagogical, and professional considerations.

Within this multidimensional perspective, Technology Self-Efficacy is particularly related to Social Cognitive Theory because the theory emphasizes individuals' beliefs about their capabilities to perform specific behaviors. Student Interaction represents the pedagogical dimension of AI readiness because AI applications may be used within teaching and learning processes involving interaction with learners. Ethical Awareness reflects the responsible and professional considerations associated with the use of AI in educational settings. In the present study, these three dimensions are used to operationalize AI readiness based on the validated structure of the Readiness for Artificial Intelligence Applications Scale (RAIS) developed by Ramazanoglu and Akın (2025).

## Technology Self-Efficacy and AI Readiness

Technology Self-Efficacy is an important dimension of teacher AI readiness because readiness for AI applications involves teachers' confidence in their capability to use AI-related technologies. In the present study, Technology Self-Efficacy refers to teachers' perceived capability and confidence in engaging with AI-related technologies and performing AI-related tasks.

This dimension can be explained by Bandura's (1986) Social Cognitive Theory. Teachers who have confidence in their technological skills may be more likely to approach technological challenges with confidence and persistence. This is particularly important when considering AI because AI tools may differ from traditional digital technologies and require users to evaluate outputs, design effective prompts, recognize limitations, and make informed decisions about their use.

Empirical studies have highlighted the importance of confidence and perceived competence. Ayanwale et al. (2022) reported that teachers' confidence in teaching AI influenced their intention to teach AI. Sumandal (2023) also investigated teachers' self-efficacy in the use of AI-based instructional tools. These findings suggest that teachers' perceived skills are an important basis for AI engagement.

However, self-efficacy should not be regarded as sufficient on its own. Wang et al. (2023) conceptualized teacher AI preparedness through multiple components, including cognition, capability, foresight, and ethical considerations, rather than confidence alone. Similarly, Chiu et al. (2025) identified AI knowledge, AI pedagogy, AI assessment, AI ethics, human-centered education, and professional engagement as distinct but related dimensions of teacher AI competency. These perspectives suggest that teachers may feel confident in using technology while still needing additional knowledge and professional judgment to implement AI effectively.

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Likewise, Du et al. (2024) recognized the need to understand the factors that influence teachers' learning and professional development in AI in relation to AI literacy. Their findings indicate the need to move away from the assumption that exposure to AI technologies automatically makes teachers AI-ready.

Consequently, the literature supports Technology Self-Efficacy as an important component of teacher AI readiness but also indicates that it needs to be considered alongside pedagogical and ethical elements. This perspective is reflected in the present study, which regards Technology Self-Efficacy as one facet of the larger construct of teacher AI preparedness rather than as an independent variable.

**Student Interaction and the Pedagogical Dimension of AI Readiness**

Although technological proficiency is important, the successful integration of AI ultimately takes place in the context of teaching and learning. Teachers must therefore evaluate the impact of AI on interactions with learners, instructional decision-making, engagement, and the role of the teacher in the classroom. In the present study, the Student Interaction dimension pertains to teachers' preparedness to consider how learners are involved in the use of AI in teaching and learning.

The TPACK framework of Mishra and Koehler (2006) provides a theoretical basis for understanding this dimension. The framework emphasizes that technology integration becomes educationally meaningful when technological knowledge is integrated with pedagogical and content knowledge. Therefore, teachers cannot be considered fully prepared solely on the basis of their ability to use an AI tool. They must also understand how technology influences instructional practices and learner experiences.

Similarly, Wang et al. (2023) conceptualized teachers as key actors in AI-augmented education. The researchers developed a model for AI readiness based on cognition, capability, foresight, and ethical considerations. They found an association between teacher AI readiness and AI-augmented creativity. This supports the view that preparedness involves teachers' ability to incorporate AI into professional and instructional practice rather than merely being aware of AI.

The UNESCO AI Competency Framework for Teachers supports this pedagogical perspective. The framework specifies 15 competencies under five dimensions: human-centered mentality, ethics of AI, foundations and applications of AI, pedagogy of AI, and AI for professional learning. The AI pedagogy dimension emphasizes that teachers need to develop the competencies required to integrate AI into teaching and learning while preserving human agency and educational purpose (Miao & Cukurova, 2024).

Sperling et al. (2024) conducted a scoping review of 34 articles and identified AI literacy in teacher education as an emerging field. They found that the available research did not fully capture teachers' practical and professional knowledge. Importantly, their analysis pointed out that teachers' practical expertise tends to be associated with the adoption of digital tools, whereas ethical and professional elements receive comparatively less attention. Hence, they recommended additional in-situ research investigating teachers' practical and ethical expertise in real educational environments.

The literature thus indicates that AI readiness involves the ability to maintain meaningful teacher–student interaction even when AI is integrated into instructional processes. In elementary education, teachers play a significant role in guiding learners' understanding, participation, and responsible use of technology. This makes the pedagogical dimension particularly relevant when examining teachers' preparedness to integrate AI into classroom activities.

**Ethical Awareness and Responsible Use of AI**

Ethical awareness represents another important component of teacher AI readiness. AI applications can create opportunities for personalization, efficiency, resource development, and instructional support; however, their implementation also raises questions concerning privacy, bias, accuracy, transparency, accountability, academic integrity, and human oversight.

Nguyen et al. (2023) examined ethical principles for Artificial Intelligence in the educational context and emphasized the importance of considering ethical consequences when AI applications are used in educational settings. Similarly, Miao and Cukurova (2024) positioned ethics as a central component of the UNESCO AI Competency Framework for Teachers. The framework highlights human-centered methods, safe and responsible practices, ethical AI use, and the preservation of human agency.

Recent research has further demonstrated that ethical awareness cannot be reduced to merely recognizing that AI poses risks. Tagare et al. (2025), in a systematic review of 76 studies on K–12 teacher AI literacy, identified ethical competencies involving knowledge, skills, and dispositions. These included awareness of AI limitations and ethical issues, understanding the human role in AI systems, critical analysis of AI, transparency and explainability, and culturally responsive and inclusive practices. The review suggests that ethical competencies are interconnected and should be developed as part of broader AI literacy.

In the literature, ethical issues in AI are sometimes discussed in relation to the technical challenges associated with data-driven AI systems. In their review, Sperling et al. (2024) identified a gap in understanding

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teachers' practical and professional ethical knowledge. This is significant because the appropriate use of AI in classrooms involves teachers exercising context-sensitive judgment rather than merely applying technical rules.

According to Wang et al. (2023), ethical considerations were connected with teachers' cognition, capability, and foresight. Their findings provide empirical support for the view that ethical considerations are interconnected with other aspects of teacher AI preparedness and are associated with teachers' general understanding of and proficiency in AI.

The importance of ethical awareness is also indicated by Philippine research. Manuel et al. (2026) examined teachers in rural Philippine high schools and found that their understanding of AI, digital competence, and ethical reflection were relatively strong, while institutional and professional support needed further attention. Similarly, Subosa (2026) studied secondary teachers in Iloilo in relation to their AI knowledge, attitudes, and ethical practices. The study found strong correlations among AI knowledge, attitudes, and ethical practices. These findings suggest that awareness and responsible practice need to be developed alongside technological capability.

Meneses (2026) also examined AI literacy and ethical awareness in relation to educators' preparedness to use AI responsibly. Taken together, these findings support the inclusion of an ethical dimension in teacher AI preparedness. Therefore, Ethical Awareness is treated as one of the three dimensions used to operationalize overall AI readiness in the present study.

**AI Competence, Literacy, and Readiness: Related but Distinct Concepts**

In addition, the literature reveals an important conceptual issue: the terms AI literacy, AI competence, AI readiness, AI self-efficacy, and AI acceptance are related but should not be treated as interchangeable.

AI literacy is typically defined as the knowledge and skills required to understand, assess, and use AI. Sperling et al. (2024) showed that, in teacher education, AI literacy has been characterized through multiple forms of professional knowledge, such as theoretical knowledge, practical knowledge, and professional judgment. Similarly, the UNESCO framework identifies a range of competencies that teachers need in AI-enabled educational environments (Miao & Cukurova, 2024).

In contrast, AI competence refers to teachers' knowledge and abilities related to artificial intelligence. For instance, Chiu et al. (2025) introduced the Teacher Artificial Intelligence Competency Self-Efficacy Scale (TAICS), which consists of six dimensions: AI knowledge, AI pedagogy, AI assessment, AI ethics, human-centered education, and professional engagement.

In the present study, AI readiness refers specifically to teachers' preparedness to engage with AI. Ramazanoglu and Akın (2025) operationalized teacher AI readiness through Technology Self-Efficacy, Student Interaction, and Ethical Awareness. This distinction is particularly important to the present study because it does not attempt to measure all aspects of AI literacy or general digital competence. Instead, it seeks to determine the level of AI readiness among public elementary school teachers.

This distinction also explains why the RAIS is appropriate for the study. Its structure provides a direct measurement framework for examining overall readiness while allowing readiness to be described through the three dimensions relevant to the present research.

**Philippine Context of Teacher AI Readiness**

The educational context of the Philippines provides an important setting for examining teacher AI readiness. The Department of Education's MATATAG Agenda emphasizes the enhancement of the quality and relevance of basic education in response to changing educational demands (Department of Education, 2023). As AI technologies are increasingly integrated into educational practice, teachers need to navigate new tools while continuing to meet curriculum requirements and maintain learner-centered instruction.

Recent research in the Philippines provides emerging evidence concerning teacher preparedness for AI. Dayagbil et al. (2025), for example, investigated the knowledge, perceptions, and experiences of 515 pre-service teachers in Central Visayas. Their findings reflected cautious optimism toward AI while also highlighting concerns involving AI limitations, bias, originality, and the need for human oversight. Although the participants were pre-service rather than in-service elementary teachers, the findings suggest that teacher preparedness for AI in the Philippine educational context involves both perceived opportunities and concerns regarding responsible use.

Lagman and Tamayo (2026) specifically examined the readiness of elementary teachers in the Philippines regarding AI utilization and drew on theoretical perspectives including TPACK, TAM, and constructivism. Their study highlighted concerns related to data privacy and ethical use, as well as perceptions that AI may be complex or more appropriate for technologically oriented users. This study is directly relevant because it establishes that elementary teachers' AI readiness has already received attention in the Philippine context. The present study extends this line of inquiry by providing district-specific evidence for Mercedes

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District using the three dimensions of the Readiness for Artificial Intelligence Applications Scale and by examining differences across selected demographic and professional groups.

Manuel et al. (2026) provided supplementary Philippine evidence by examining AI awareness, digital competence, and ethical reflection among teachers in rural Philippine high schools. Their findings revealed positive associations among several dimensions of teacher readiness, while professional and institutional support remained areas requiring attention. Although the educational level differs from that of the present study, this research demonstrates the importance of examining AI readiness within specific Philippine educational contexts rather than assuming that findings from other countries automatically apply to local teachers.

Subosa (2026) similarly examined teachers' knowledge, attitudes, and practices concerning AI among secondary teachers in Iloilo. The study reported generally favorable patterns across the examined areas and identified significant relationships among AI knowledge, attitudes, and ethical practices. Although the population differs from that of the present study, the research contributes evidence that AI readiness is increasingly relevant within Philippine schools.

These Philippine studies leave room for additional context-specific evidence. Although Lagman and Tamayo (2026) examined AI readiness among elementary teachers in the Philippines, further district-level evidence is needed to describe readiness through the specific dimensions of Technology Self-Efficacy, Student Interaction, and Ethical Awareness and to examine how these dimensions vary across demographic and professional groups. The present study addresses this localized need by focusing on public elementary school teachers in Mercedes District.

**Measurement of Teacher AI Readiness**

The development of specialized instruments is another important development in the literature. In the past, readiness instruments in educational technology often focused on areas such as computer self-efficacy, communication self-efficacy, institutional support, self-directed learning, technological readiness, pedagogical readiness, and interpersonal readiness. The RAIS development study reviewed several related instruments and noted similarities between existing readiness measures and the Technology Self-Efficacy and Student Interaction dimensions of RAIS.

However, Ramazanoglu and Akın (2025) identified Ethical Awareness as a distinct dimension within their AI readiness framework. Their empirical work resulted in a three-factor, 19-item scale. The reported correlations among Technology Self-Efficacy, Student Interaction, and Ethical Awareness were positive, while the scale demonstrated evidence of convergent validity and high internal consistency across its dimensions.

The present study directly adopts this instrument. The research design specifies Artificial Intelligence Readiness as the central research variable, with Technology Self-Efficacy, Student Interaction, and Ethical Awareness treated as its dimensions. The 19-item RAIS consists of six Technology Self-Efficacy items, seven Student Interaction items, and six Ethical Awareness items. Overall and dimension-level mean scores are then used to describe the teachers' AI readiness.

This alignment is important because the instrument corresponds directly with the research questions and conceptual framework of the present study. The use of an established instrument also avoids unnecessarily developing a new measurement tool within the limited scope of the research.

**Synthesis of the Literature and Relevance to the Present Study**

The literature reviewed indicates that teacher AI readiness is a multidimensional phenomenon. Although researchers have conceptualized AI readiness in different ways, recurring elements include technological capability, self-efficacy, pedagogical application, learner interaction, ethical considerations, and professional responsibility. Wang et al. (2023), for example, emphasized cognition, capability, foresight, and ethics, whereas Chiu et al. (2025) identified six dimensions in teacher AI competency self-efficacy. The UNESCO framework also identifies human-centered thinking, ethics, AI foundations and applications, AI pedagogy, and professional learning as important areas of teacher AI competency (Miao & Cukurova, 2024).

The literature also cautions against reducing AI readiness to technical proficiency. A teacher may be confident in using an AI tool but may still need to consider its ethical implications and how to integrate it pedagogically. Conversely, awareness of ethical risks does not automatically guarantee technological competence. Taken together, these perspectives support an integrated understanding of teacher preparedness in which technological, pedagogical, interpersonal, and ethical considerations are interconnected.

The present study adopts this multidimensional perspective through the Readiness for Artificial Intelligence Applications Scale (RAIS) developed by Ramazanoglu and Akın (2025). It examines AI readiness through Technology Self-Efficacy, Student Interaction, and Ethical Awareness. This approach is consistent with the study's descriptive-comparative design because the three dimensions are treated as components of

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the central construct of Artificial Intelligence Readiness. The study describes readiness levels and examines whether significant differences exist across selected demographic and professional groups.

The existing literature provides international evidence concerning AI readiness, AI literacy, self-efficacy, pedagogy, and ethics, while Philippine studies in this area are gradually emerging. Philippine research has also begun to address elementary teachers' AI readiness, as shown by Lagman and Tamayo (2026). However, district-specific evidence on elementary teachers' readiness across the three RAIS dimensions, including comparisons by age, sex, highest educational attainment, and years of teaching experience, remains limited. This gap supports the need for a localized assessment in Mercedes District.

Accordingly, the present study provides an empirical profile of AI readiness among public elementary school teachers in Mercedes District. By examining overall readiness and the dimensions of Technology Self-Efficacy, Student Interaction, and Ethical Awareness, it describes teachers' preparedness for engaging with AI in educational contexts and considers differences across selected demographic and professional groups. The findings may serve as a baseline for identifying professional learning needs, strengthening school-level support, and informing responsible and purposeful approaches to AI integration in elementary education.

## Methodology

### Research Design

This study employed a quantitative descriptive-comparative research design to determine the level of Artificial Intelligence Readiness among public elementary school teachers in Mercedes District, Department of Education (DepEd), Division of Zamboanga City. The descriptive component was used to determine the respondents' overall level of AI Readiness and their levels of readiness in terms of Technology Self-Efficacy, Student Interaction, and Ethical Awareness. The comparative component was used to determine whether significant differences existed in the respondents' AI Readiness when grouped according to age, sex, highest educational attainment, and years of teaching experience. The study used a structured survey questionnaire based on the Readiness for Artificial Intelligence Applications Scale (RAIS) developed by Ramazanoglu and Akın (2025). The quantitative data were analyzed using descriptive and inferential statistical procedures consistent with the research questions. The study described the AI readiness profile of public elementary school teachers and compared readiness levels across selected demographic and professional groups without establishing causal relationships. The normality of the readiness scores was assessed using the Shapiro–Wilk test. The results indicated significant departures from normality for several readiness scores across the demographic groups. Considering these results and the characteristics of the data, nonparametric tests were used for group comparisons. The Mann–Whitney U test was employed for comparisons involving two independent groups, while the Kruskal–Wallis H test was used for comparisons involving three or more independent groups. Effect sizes were calculated to complement the nonparametric group comparisons. For the Mann–Whitney U tests, the effect size was calculated using $r = |Z|/\sqrt{N}$. For the Kruskal–Wallis H tests, epsilon-squared ($\varepsilon^2$) was calculated using $\varepsilon^2 = (H - k + 1) / (N - k)$, where H is the Kruskal–Wallis test statistic, k is the number of independent groups, and N is the total number of respondents. To account for multiple testing, the Holm correction was applied to the p-values of the 16 omnibus tests. Statistical significance was evaluated at the .05 level using the Holm-adjusted p-values.

### Research Locale

The study was conducted in the public elementary schools within Mercedes District under the Department of Education, Division of Zamboanga City. The district comprised 22 public elementary schools with a total population of 380 elementary school teachers. Mercedes District served as the research locale for examining the Artificial Intelligence Readiness of public elementary school teachers in terms of Technology Self-Efficacy, Student Interaction, and Ethical Awareness. The study also examined differences in readiness according to selected demographic and professional characteristics, namely age, sex, highest educational attainment, and years of teaching experience.

### Research Participants

The study involved 207 public elementary school teachers from 22 public elementary schools in Mercedes District. The respondents were described according to age, sex, highest educational attainment, and years of teaching experience. In terms of age, the largest group was composed of teachers aged 30–39 years (n = 81, 39.1%), followed by those aged 50–59 years (n = 57, 27.5%), 40–49 years (n = 43, 20.8%), and 20–29 years (n = 23, 11.1%). Three respondents (1.4%) were aged 60 years and above. Regarding sex, 182 respondents (87.9%) were female, while 25 (12.1%) were male. In terms of highest educational attainment, 114 respondents (55.1%) had master's units, 44 (21.3%) held a bachelor's degree, 42 (20.3%) were master's degree holders, 4 (1.9%) held a doctoral degree, and 3 (1.4%) had doctoral units. Regarding years of teaching experience, 74

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respondents (35.7%) had more than 15 years of experience, 63 (30.4%) had 5–10 years, 48 (23.2%) had 11–15 years, and 22 (10.6%) had less than 5 years of experience. To be included in the analysis, respondents had to be currently employed public school teachers, provide informed consent, and submit a complete survey questionnaire.

**Research Instrument**

The study used the Readiness for Artificial Intelligence Applications Scale (RAIS) developed by Ramazanoglu and Akın (2025). The instrument was developed to measure teachers' readiness to use artificial intelligence applications. The original RAIS was developed and validated using teacher samples from Türkiye. The scale development study involved 616 teachers in the exploratory factor analysis, 345 teachers in the confirmatory factor analysis, and 128 teachers in the concurrent validity analysis. The participants represented different teaching specializations, including classroom teaching and preschool teaching (Ramazanoglu & Akın, 2025). The final version of the RAIS consists of 19 items distributed across three dimensions: Technology Self-Efficacy (6 items), Student Interaction (7 items), and Ethical Awareness (6 items). It uses a five-point Likert scale with the following response options: Strongly Disagree, Disagree, Undecided, Agree, and Strongly Agree. The three dimensions were retained in the present study because they constitute the validated three-factor structure of the RAIS developed specifically to assess teachers' readiness for AI applications. The instrument was adopted in its original form to assess the overall Artificial Intelligence Readiness of public elementary school teachers in Mercedes District, operationalized through Technology Self-Efficacy, Student Interaction, and Ethical Awareness. The validity of the instrument was supported by the confirmatory factor analysis reported by Ramazanoglu and Akın (2025), which yielded a Comparative Fit Index (CFI) of .938, Tucker–Lewis Index (TLI) of .928, Root Mean Square Error of Approximation (RMSEA) of .078, and Standardized Root Mean Square Residual (SRMR) of .044. These results supported the three-factor, 19-item structure of the original instrument. The internal consistency of the instrument was examined using Cronbach's alpha based on the responses of the 207 teachers included in the present study. The reliability coefficients were .894 for Technology Self-Efficacy, .926 for Student Interaction, and .905 for Ethical Awareness. The overall reliability coefficient for the 19-item scale was .949. The mean scores were interpreted using the following ranges: 4.21–5.00, Strongly Agree; 3.41–4.20, Agree; 2.61–3.40, Undecided; 1.81–2.60, Disagree; and 1.00–1.80, Strongly Disagree. These ranges were used to describe the respondents' levels of Artificial Intelligence Readiness in terms of Technology Self-Efficacy, Student Interaction, and Ethical Awareness, as well as their overall readiness.

**Data Gathering Procedure**

The data-gathering process was conducted systematically to ensure the proper collection, handling, and protection of research data. First, the researcher secured the necessary permission and approval from the appropriate authorities of the Department of Education, Division of Zamboanga City, and Mercedes District before conducting the study. Second, the researcher coordinated with the school heads of the 22 public elementary schools to facilitate the distribution of the research questionnaire. All 380 eligible public elementary school teachers were invited to participate in the study. Third, the purpose of the study, participation requirements, procedures, and ethical considerations were explained to the prospective respondents. Informed consent was obtained before participation. The respondents were informed that participation was voluntary and that they had the right to decline or withdraw from the study. Fourth, the questionnaire based on the Readiness for Artificial Intelligence Applications Scale (RAIS) was administered through Google Forms. Data collection took place from September 21 through the first week of October. The questionnaire measured the respondents' level of Artificial Intelligence Readiness in terms of Technology Self-Efficacy, Student Interaction, and Ethical Awareness. Fifth, the submitted Google Forms responses were checked for completeness and eligibility. Only responses meeting the study's inclusion criteria were retained for analysis. Finally, all collected data were treated confidentially and securely stored. The information gathered was used solely for academic research purposes, and the identities of individual respondents were not disclosed in any report or publication.

## Results and Discussions

This section presents the demographic profile of the 207 public elementary school teachers who participated in the study. The respondents were classified according to age, sex, highest educational attainment, and years of teaching experience. These characteristics provide a description of the participants and serve as the basis for examining the teachers' artificial intelligence readiness in relation to their demographic and professional backgrounds.

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**Table 1.** Demographic Profile of the Respondents (N = 207)

| Demographic Variable | Category | Frequency (n) | Percentage (%) |
|---|---|---|---|
| 1. Age | 20–29 years | 23 | 11.1 |
| | 30–39 years | 81 | 39.1 |
| | 40–49 years | 43 | 20.8 |
| | 50–59 years | 57 | 27.5 |
| | 60 years and above | 3 | 1.4 |
| 2. Sex | Male | 25 | 12.1 |
| | Female | 182 | 87.9 |
| 3. Highest Educational Attainment | Bachelor's degree | 44 | 21.3 |
| | With master's units | 114 | 55.1 |
| | Master's degree | 42 | 20.3 |
| | With doctoral units | 3 | 1.4 |
| | Doctoral degree | 4 | 1.9 |
| 4. Years of Teaching Experience | Less than 5 years | 22 | 10.6 |
| | 5–10 years | 63 | 30.4 |
| | 11–15 years | 48 | 23.2 |
| | More than 15 years | 74 | 35.7 |

**Research Question 1: What is the level of Artificial Intelligence Readiness among public elementary school teachers in Mercedes District, overall and in terms of Technology Self-Efficacy, Student Interaction, and Ethical Awareness?**

**Table 2.** Level of Technology Self-Efficacy among public elementary school teachers in Mercedes District

| No. | Statement | Mean | SD | Interpretation |
|---|---|---|---|---|
| 1. TSE1 | I can learn a programming language at a level that can create an artificial intelligence product. | 3.99 | 0.78 | Agree |
| 2. TSE2 | I can use artificial intelligence applications (such as ChatGPT, Chatbot, Bing, Dall-e, ...). | 4.49 | 0.64 | Strongly Agree |
| 3. TSE3 | I can analyze artificial intelligence data. | 3.95 | 0.84 | Agree |
| 4. TSE4 | I can solve the problems of artificial intelligence applications. | 3.76 | 0.95 | Agree |
| 5. TSE5 | I can develop artificial intelligence projects. | 3.72 | 1.06 | Agree |
| 6. TSE6 | I can manage artificial intelligence projects. | 3.79 | 1.03 | Agree |
| | **Overall Mean** | **3.96** | **0.72** | **Agree** |

Table 2 presents the level of Technology Self-Efficacy among public elementary school teachers in Mercedes District. The overall mean of 3.96 (SD = 0.72) indicates that the respondents agreed with the statements describing their perceived capability to perform artificial intelligence-related tasks. Among the six indicators, TSE2, "I can use artificial intelligence applications (such as ChatGPT, Chatbot, Bing, Dall-E, etc.)," obtained the highest mean of 4.49 (SD = 0.64), interpreted as Strongly Agree. This indicates that the respondents expressed strong confidence in their ability to use existing AI applications.

In contrast, TSE5, "I can develop artificial intelligence projects," obtained the lowest mean of 3.72 (SD = 1.06), although it remained within the Agree range. TSE4, concerning the ability to solve problems involving AI applications, and TSE6, concerning the management of AI projects, also received comparatively lower mean ratings of 3.76 and 3.79, respectively. These results suggest that the respondents' perceived self-efficacy was stronger in using existing AI applications than in undertaking more complex tasks such as developing, troubleshooting, and managing AI projects.

Overall, the findings indicate that the respondents generally perceived themselves as capable of engaging with AI technologies, although their confidence varied across the indicators. This pattern may be considered alongside Wang et al. (2023), whose discussion of teachers' AI-related capabilities extends beyond basic use to include broader competencies involved in AI integration. However, the present findings are based on self-reported responses and do not directly measure actual performance in developing or managing AI projects.

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**Table 3.** Level of Student Interaction among public elementary school teachers in Mercedes District

| No. | Statement | Mean | SD | Interpretation |
|---|---|---|---|---|
| 1. SI1 | I can lead classroom discussions on artificial intelligence topics with students. | 4.18 | 0.69 | Agree |
| 2. SI2 | I can encourage students to learn artificial intelligence topics. | 4.03 | 0.69 | Agree |
| 3. SI3 | I can help students develop collaborative projects on artificial intelligence. | 4.06 | 0.81 | Agree |
| 4. SI4 | I can design activities that encourage student interaction regarding artificial intelligence. | 4.13 | 0.73 | Agree |
| 5. SI5 | I can help students critically evaluate AI projects. | 3.87 | 0.81 | Agree |
| 6. SI6 | I can mentor students for artificial intelligence projects. | 3.79 | 0.82 | Agree |
| 7. SI7 | I can help students discover their talents in the field of artificial intelligence. | 3.86 | 0.83 | Agree |
| | **Overall Mean** | **3.99** | **0.64** | **Agree** |

Table 3 presents the level of Student Interaction among public elementary school teachers in Mercedes District. The overall mean of 3.99 (SD = 0.64) indicates that the respondents agreed with the statements describing their perceived ability to facilitate student interaction in relation to artificial intelligence. All seven indicators were interpreted as Agree.

The highest mean was obtained for SI1, "I can lead classroom discussions on artificial intelligence topics with students," with a mean of 4.18 (SD = 0.69). This was followed by SI4, "I can design activities that encourage student interaction regarding artificial intelligence," which obtained a mean of 4.13 (SD = 0.73). These results indicate that the respondents reported confidence in facilitating classroom discussions and designing activities related to AI.

In contrast, SI6, "I can mentor students for artificial intelligence projects," obtained the lowest mean of 3.79 (SD = 0.82), followed by SI7, "I can help students discover their talents in the field of artificial intelligence," with a mean of 3.86 (SD = 0.83). Although these indicators received comparatively lower ratings, both remained within the Agree range.

These findings suggest that the respondents generally perceived themselves as capable of facilitating students' engagement with AI through classroom discussions and learning activities. However, their comparatively lower ratings for mentoring students and supporting the development of students' AI-related talents indicate areas where further support may be beneficial. This finding may be discussed alongside Manuel et al. (2026), particularly if their study supports the importance of teachers' digital competence and instructional practices in AI-supported learning. The present results, however, reflect teachers' self-reported perceptions rather than direct observations of classroom practice.

**Table 4.** Level of Ethical Awareness among public elementary school teachers in Mercedes District

| No. | Statement | Mean | SD | Interpretation |
|---|---|---|---|---|
| 1. EA1 | I pay attention to data privacy in artificial intelligence applications. | 4.49 | 0.57 | Strongly Agree |
| 2. EA2 | I exhibit ethical behavior in the use of artificial intelligence applications. | 4.44 | 0.56 | Strongly Agree |
| 3. EA3 | I can take precautions against unethical artificial intelligence practices. | 4.44 | 0.58 | Strongly Agree |
| 4. EA4 | I can detect unethical AI practices. | 4.27 | 0.66 | Strongly Agree |
| 5. EA5 | I can ensure personal data security in artificial intelligence applications. | 4.22 | 0.71 | Strongly Agree |
| 6. EA6 | I am aware of my ethical responsibilities in artificial intelligence applications. | 4.44 | 0.53 | Strongly Agree |
| | **Overall Mean** | **4.38** | **0.50** | **Strongly Agree** |

Table 4 presents the level of Ethical Awareness among public elementary school teachers in Mercedes District. The overall mean of 4.38 (SD = 0.50) indicates that the respondents strongly agreed with the statements describing their ethical awareness in relation to artificial intelligence. All six indicators were interpreted as Strongly Agree, showing a consistent pattern of strong agreement across the dimension.

The highest mean was obtained for EA1, "I pay attention to data privacy in artificial intelligence applications," with a mean of 4.49 (SD = 0.57). This was followed by EA2, EA3, and EA6, each with a mean of 4.44. These results indicate that the respondents strongly endorsed statements related to ethical behavior,

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precautions against unethical AI practices, and awareness of their ethical responsibilities in using AI applications.

The comparatively lower means were obtained for EA4, "I can detect unethical AI practices," with a mean of 4.27 (SD = 0.66), and EA5, "I can ensure personal data security in artificial intelligence applications," with a mean of 4.22 (SD = 0.71). Although these were the lowest-rated indicators within the dimension, both remained within the Strongly Agree range.

The findings indicate that Ethical Awareness was a strongly endorsed aspect of the respondents' reported AI readiness. This pattern may be considered alongside Manuel et al. (2026), if their discussion of ethical reflection in AI-supported assessment supports this comparison. However, the present results are based on self-reported responses and reflect the respondents' perceived ethical awareness rather than directly observed ethical behavior.

**Research Question 2: Is there a significant difference in the Artificial Intelligence Readiness of elementary school teachers, both overall and across its three dimensions, when grouped according to Age, Sex, Highest Educational Attainment, and Years of Teaching Experience?**

**Table 5.** Differences in Artificial Intelligence Readiness According to Age

| AI Readiness Dimension | 20–29 years | 30–39 years | 40–49 years | 50–59 years | 60 years and above | H | ε² | df | p-value | Holm-adjusted p-value | Interpretation |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Technology Self-Efficacy | 127.59 | 99.93 | 109.87 | 97.61 | 70.17 | 6.019 | .010 | 4 | .198 | 1.000 | Not Significant |
| 2. Student Interaction | 133.61 | 99.20 | 109.79 | 96.20 | 71.67 | 8.523 | .022 | 4 | .074 | .888 | Not Significant |
| 3. Ethical Awareness | 125.72 | 99.90 | 99.74 | 107.85 | 36.17 | 8.101 | .020 | 4 | .088 | .935 | Not Significant |
| **Overall AI Readiness** | **133.26** | **99.15** | **107.79** | **98.42** | **62.17** | **8.178** | **.021** | **4** | **.085** | **.935** | **Not Significant** |

Table 5 presents the differences in Artificial Intelligence Readiness when respondents were grouped according to age. The Kruskal–Wallis H test showed no statistically significant differences in Technology Self-Efficacy, $H(4) = 6.019$, $p = .198$; Student Interaction, $H(4) = 8.523$, $p = .074$; Ethical Awareness, $H(4) = 8.101$, $p = .088$; or Overall AI Readiness, $H(4) = 8.178$, $p = .085$. After applying the Holm correction across the 16 omnibus tests, none of these differences was statistically significant. Therefore, the null hypotheses were not rejected for all four measures.

Although the mean ranks showed descriptive variation across age groups, these differences were not statistically significant. For Overall AI Readiness, respondents aged 20–29 years had the highest mean rank (133.26), while those aged 60 years and above had the lowest (62.17). The oldest age group consisted of only three respondents; therefore, its mean rank should be interpreted cautiously.

The findings indicate that respondents' reported AI readiness did not differ significantly across age groups after adjustment for multiple testing. Wang et al. (2023) emphasized that teachers' AI-related readiness involves multiple competencies, including capability and ethical considerations. This broader perspective supports examining AI readiness across several dimensions rather than relying on a single measure. However, because the cited discussion does not establish whether age produces significant differences in AI readiness, it cannot be used to claim that the present age-related findings confirm or contradict Wang et al.'s results. The present study therefore provides specific evidence that, within this sample, age-group differences in the four AI readiness measures were not statistically significant after adjustment for multiple testing.

**Table 6.** Differences in Artificial Intelligence Readiness According to Sex

| AI Readiness Dimension | Male Mean Rank | Female Mean Rank | U | Z | *r* | p-value | Holm-adjusted p-value | Interpretation |
|---|---|---|---|---|---|---|---|---|
| 1. Technology Self-Efficacy | 104.90 | 103.88 | 2252.500 | −0.081 | .006 | .936 | 1.000 | Not Significant |
| 2. Student Interaction | 92.80 | 105.54 | 1995.000 | −1.005 | .070 | .315 | 1.000 | Not Significant |
| 3. Ethical Awareness | 79.06 | 107.43 | 1651.500 | −2.277 | .158 | .023 | .345 | Not Significant |
| **Overall AI Readiness** | **94.70** | **105.28** | **2042.500** | **−0.829** | **.058** | **.407** | **1.000** | **Not Significant** |

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Table 6 presents the differences in Artificial Intelligence Readiness when respondents were grouped according to sex. The Mann–Whitney U test revealed no statistically significant differences in Technology Self-Efficacy (U = 2252.500, Z = −0.081, p = .936), Student Interaction (U = 1995.000, Z = −1.005, p = .315), or Overall AI Readiness (U = 2042.500, Z = −0.829, p = .407). Although Ethical Awareness initially showed a statistically significant difference (U = 1651.500, Z = −2.277, p = .023), this difference was no longer statistically significant after applying the Holm correction (adjusted p = .345). Female respondents obtained a higher mean rank in Ethical Awareness (107.43) than male respondents (79.06); however, this difference should be interpreted descriptively rather than as statistically significant after adjustment for multiple testing. Therefore, the null hypotheses were not rejected for any of the four measures after the Holm correction.

The findings may be considered alongside previous Philippine studies on teachers' AI readiness. Lagman and Tamayo (2026) highlighted concerns about data privacy and ethical AI use among elementary teachers, while Manuel et al. (2026) examined AI awareness, digital competence, and ethical reflection among rural Philippine high school teachers. These studies underscore the importance of ethical considerations in teachers' engagement with AI. In the present study, although female respondents obtained a higher mean rank in Ethical Awareness, the adjusted result did not provide sufficient statistical evidence of a difference between male and female respondents. Thus, the findings emphasize the importance of examining ethical awareness as a dimension of AI readiness without concluding that it differs according to sex in the present sample.

**Table 7.** Differences in Artificial Intelligence Readiness According to Highest Educational Attainment

| AI Readiness Dimension | Bachelor's Degree | With Master's Units | Master's Degree | Doctoral Units | Doctoral Degree | H | df | $\varepsilon^2$ | p-value | Holm-adjusted p-value | Interpretation |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Technology Self-Efficacy | 103.70 | 105.07 | 103.71 | 85.67 | 93.38 | .450 | 4 | .000 | .978 | 1.000 | Not Significant |
| 2. Student Interaction | 97.52 | 106.55 | 105.94 | 91.33 | 91.75 | 1.084 | 4 | .000 | .897 | 1.000 | Not Significant |
| 3. Ethical Awareness | 96.88 | 108.17 | 99.73 | 97.00 | 113.63 | 1.613 | 4 | .000 | .807 | 1.000 | Not Significant |
| **Overall AI Readiness** | **101.42** | **104.89** | **105.61** | **82.67** | **106.00** | **.524** | **4** | **.000** | **.971** | **1.000** | **Not Significant** |

Table 7 presents the differences in Artificial Intelligence Readiness when respondents were grouped according to their highest educational attainment. The Kruskal–Wallis H test showed no statistically significant differences in Technology Self-Efficacy, H(4) = 0.450, p = .978; Student Interaction, H(4) = 1.084, p = .897; Ethical Awareness, H(4) = 1.613, p = .807; or Overall AI Readiness, H(4) = 0.524, p = .971. These results remained nonsignificant after applying the Holm correction across the 16 omnibus tests. Therefore, the null hypotheses were not rejected for any of the four measures.

Although the mean ranks varied across educational-attainment groups, these differences were not statistically significant. For Overall AI Readiness, the mean ranks ranged from 82.67 among respondents with doctoral units to 106.00 among those with a doctoral degree. However, the doctoral-units group consisted of only three respondents, while the doctoral-degree group had four respondents; therefore, these mean ranks should be interpreted cautiously.

The findings may be viewed alongside Lagman and Tamayo (2026), who examined AI readiness among elementary teachers in the Philippines, and Manuel et al. (2026), who explored AI awareness, digital competence, and ethical reflection among rural Philippine high school teachers. These studies highlight the importance of examining teachers' AI readiness within their educational contexts. In the present study, however, the respondents' reported AI readiness did not differ significantly according to highest educational attainment. Since the cited studies, as described in the literature review, do not establish whether educational attainment produces differences in AI readiness, they provide contextual support rather than direct evidence confirming or contradicting the present findings. Furthermore, because none of the omnibus tests was statistically significant, no post hoc pairwise comparisons were warranted for this grouping variable.

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**Table 8.** Differences in Artificial Intelligence Readiness According to Years of Teaching Experience

| AI Readiness Dimension | Less than 5 years | 5–10 years | 11–15 years | More than 15 years | H | ε² | df | p-value | Holm-adjusted p-value | Interpretation |
|---|---|---|---|---|---|---|---|---|---|---|
| 1. Technology Self-Efficacy | 138.25 | 105.44 | 101.83 | 93.99 | 9.454 | .032 | 3 | .024 | .345 | Not Significant |
| 2. Student Interaction | 137.32 | 105.63 | 106.46 | 91.11 | 10.538 | .037 | 3 | .015 | .240 | Not Significant |
| 3. Ethical Awareness | 117.89 | 107.02 | 103.44 | 97.67 | 2.285 | .000 | 3 | .515 | 1.000 | Not Significant |
| **Overall AI Readiness** | **133.73** | **105.87** | **103.90** | **93.64** | **7.723** | **.023** | **3** | **.052** | **.676** | **Not Significant** |

Table 8 presents the differences in Artificial Intelligence Readiness according to years of teaching experience. Before adjustment, the Kruskal–Wallis H test showed p-values of .024 for Technology Self-Efficacy and .015 for Student Interaction. However, after applying the Holm correction across the 16 omnibus tests, the adjusted p-values were .345 and .240, respectively. No statistically significant differences remained in any of the four measures at the .05 level. Therefore, the null hypotheses were not rejected for Technology Self-Efficacy, Student Interaction, Ethical Awareness, or Overall AI Readiness.

The mean ranks were descriptively higher among respondents with less than five years of teaching experience for Technology Self-Efficacy (138.25) and Student Interaction (137.32). However, these rank patterns should not be interpreted as statistically significant group differences after adjustment for multiple testing. Overall, the findings indicate that years of teaching experience did not produce statistically significant differences in the four AI readiness measures after accounting for multiple testing.

## Ethical Considerations

This study followed ethical standards in educational research to protect the rights and welfare of the participants. Permission to conduct the study was obtained from the Department of Education Division Office and the appropriate school authorities in Mercedes District, Division of Zamboanga City. Informed consent was secured from all participants after explaining the purpose of the study, the procedures involved, and their right to participate voluntarily or withdraw at any time without consequences. Confidentiality and anonymity were observed, and participants' identities were protected. No personal information was disclosed in the analysis or reporting of results. All data collected were used solely for research purposes, stored securely, and handled in accordance with the Data Privacy Act of 2012 (Republic Act No. 10173). The study involved a survey on teachers' artificial intelligence readiness and was designed to minimize potential risks to participants. Ethical principles of fairness, objectivity, and academic integrity were upheld throughout the research process.

## Conclusion

The findings of this study indicate that public elementary school teachers in Mercedes District demonstrated a generally positive level of Artificial Intelligence Readiness. Ethical Awareness emerged as the strongest dimension, while Technology Self-Efficacy and Student Interaction received comparatively lower ratings. These findings suggest that although teachers reported strong awareness of ethical considerations in AI use, further support may be beneficial in strengthening their confidence in using AI technologies and facilitating student interaction with AI-related learning activities. The comparative results showed no statistically significant differences in the four AI readiness measures according to age, sex, highest educational attainment, or years of teaching experience after applying the Holm correction across the 16 omnibus tests. Although some unadjusted comparisons initially indicated differences, none remained statistically significant after adjustment. These findings suggest that professional development initiatives may be designed to support teachers' technological confidence, student interaction, and ethical use of AI across the district. The study contributes context-specific evidence on the Artificial Intelligence Readiness of public elementary school teachers in Mercedes District, particularly in Technology Self-Efficacy, Student Interaction, and Ethical Awareness. The findings may serve as a basis for planning professional development activities that sustain teachers' ethical awareness while strengthening their technological confidence and capacity to facilitate student interaction with AI. However, the findings should be interpreted within the study's limitations, including its focus on one district, reliance on self-reported questionnaire responses, and the small number of respondents in some demographic groups. Future research may involve teachers from other districts or divisions, use larger and more balanced samples, and incorporate qualitative methods or classroom-based evidence to gain a deeper understanding of teachers' AI Readiness and actual AI integration practices.

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## Recommendations

For school administrators, provide professional development activities to strengthen teachers' Technology Self-Efficacy and Student Interaction in using artificial intelligence for teaching and learning. For teachers, participate in training and collaborative activities that develop their confidence in using AI tools and applying them appropriately in classroom instruction. For teachers with varying years of teaching experience, encourage mentoring, peer sharing, and collaborative learning, particularly between teachers with less than five years and those with more than 15 years of experience, to support the development of AI-related capabilities. For school administrators and teachers, sustain and strengthen ethical awareness by promoting responsible, fair, and appropriate use of AI in teaching and learning. For future researchers, conduct similar studies in other districts or divisions using larger and more balanced samples to examine whether the findings are consistent across different educational contexts. Future studies may also incorporate qualitative interviews or classroom-based observations to explore teachers' actual AI integration practices beyond self-reported readiness.

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