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Artificial Intelligence in Special Education: Assessing Teachers' Level of Use and Readiness at Tomas Sagun Integrated School, Pagadian City, Philippines

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Abstract

The integration of Artificial Intelligence (AI) in special education presents transformative opportunities for inclusive and differentiated instruction. This study examined the level of use and readiness of teachers at Tomas Sagun Integrated School, Pagadian City, Philippines, in adopting AI tools within special education settings. Employing a descriptive-survey research design, the study gathered data from special education (SPED) teachers through a validated questionnaire assessing their awareness, frequency of AI tool use, perceived competence, and overall readiness to integrate AI in teaching learners with diverse needs. Findings revealed that while most teachers demonstrated a moderate level of readiness, actual use of AI-powered instructional tools remained limited, largely attributed to insufficient training, limited access to technology, and a lack of institutional support. Teachers expressed a positive disposition toward AI adoption but identified professional development and infrastructure improvement as critical enablers. The study underscores the need for targeted capacity-building programs, policy frameworks, and resource allocation to support AI integration in SPED classrooms. Recommendations are directed at school administrators, curriculum planners, and education policymakers to bridge the gap between readiness and actual AI utilization, ultimately enhancing the quality of education for learners with special needs.

Keywords

artificial intelligence, special education, teacher readiness, technology integration, inclusive education, Pagadian City

1. Introduction

Artificial Intelligence in Education

Artificial Intelligence (AI) refers to computer systems built to perform tasks that ordinarily require human cognition—including pattern recognition, natural language processing, reasoning, and adaptive decision-making [1, 2]. In educational settings, AI encompasses a growing suite of tools such as intelligent tutoring systems, adaptive learning platforms, generative AI applications, and automated assessment engines that collectively personalize instruction, streamline administrative tasks, and improve learning accessibility at scale [3, 4]. These technologies are reshaping classrooms globally, enabling educators to move beyond one-size-fits-all delivery toward data-driven, student-centered practices.

The integration of AI in education is accelerating across all levels of schooling. Adaptive platforms adjust content pacing and complexity in real time based on performance data, while generative AI tools reduce the time teachers spend on lesson planning, material creation, and documentation (Kelley & Wenzel, 2025; Vital et al., 2025). In the Philippines, this momentum reached a national policy milestone in January 2026 with the launch of Project AGAP.AI (Accelerating Governance and Adaptive Pedagogy through Artificial Intelligence) by the Department of Education, a programmed targeting up to 1.5 million teachers, students, and parents through AI training, curriculum integration, and ethical safeguards for responsible deployment in basic education [6]. This national commitment signals that AI readiness is now a strategic priority for Philippine education, including its special education sector.

Artificial Intelligence in Special Education

Within special education, AI has demonstrated consistent promise in supporting learners with disabilities through personalized instruction, enhanced accessibility, and targeted intervention. Intelligent tutoring systems and adaptive platforms dynamically adjust content and pacing to each student's profile, improving comprehension and engagement for learners with diverse needs [1, 7]. AI-powered Augmentative and Alternative Communication (AAC) tools, voice-activated interfaces, and speech-to-text applications improve communication access for students with sensory and language disabilities, while Braille devices, automated captions, and screen readers extend independent participation in learning activities [8, 9]. Research further documents the availability and utilization of such assistive devices within special schools, confirming that when technology is accessible and appropriately matched to student need, utilization rates are substantial (Olumorin et al., 2022; Alimi et al., 2022).

The evidence base for AI in supporting specific learning disabilities is equally compelling. A systematic review by Ulaş et al. [12] of 30 experimental studies found that AI algorithms achieved diagnostic accuracy exceeding 90% for dyslexia, dysgraphia, and dyscalculia, and that AI-enhanced tools produced measurable gains in reading, writing, and mathematics skills. Panjwani-Charania and Zhai (2024) classified seven AI application types supporting students with learning disabilities—ranging from adaptive learning and intelligent tutors to social robots and communication assistants—with adaptive learning being the most widely implemented. For students with autism spectrum disorder, affective-computing tools such as EmoLand use AI emotion recognition to develop social understanding, while virtual tutor applications employ AI speech recognition to support language learning [10]. Mo and Mo [13] demonstrated that an AI-driven Hidden Markov Model intervention significantly improved interactive speech and semantic recognition for deaf and hard-of-hearing students. Beyond academic skills, AI tools also support behavioral management, emotional regulation, and early identification of learning difficulties, and have been used to improve the quality and efficiency of Individualized Education Programs [11, 7]. In the Philippine setting, Manzon and Belena [14] found that SPED teachers in Antipolo City rated AI-enhanced methods as highly effective for student engagement and personalized content delivery, underscoring the local relevance of global findings.

Teachers' Use of Artificial Intelligence in Special Education

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Teachers are the primary mediators of AI integration in special education, and their levels of utilization, readiness, and attitudes fundamentally shape whether AI tools reach students. Research consistently reveals that special education teachers hold generally favorable views of AI. In a study of 351 special education teachers in Jordan, Shaheen and Zanoon [15] found that perceived benefits—including enhanced student engagement and individualized learning—received the highest domain scores. Alsudairy and Eltantawy [9] reported that Saudi Arabian SPED teachers viewed AI as a powerful compensatory strategy and a driver of personalized education, especially for students with sensory impairments. Similarly, Özbilen et al. [16] found that Turkish SPED teachers considered AI essential for individualizing instruction and preparing IEPs, noting reductions in workload and improvements in document quality. Chanthiran et al. [17] corroborated those primary SPED teachers in Malaysia acknowledged AI's potential to bridge learning gaps and support personalized learning.

Despite these positive attitudes, a persistent gap between awareness and actual classroom use is well documented. Fteiha et al. [18] found using structural equation modelling that UAE teachers held high attitudes toward AI ($M = 3.95$) yet exhibited considerably lower actual AI-related practices ($M = 3.17$), with special education teachers scoring significantly below their general education peers. Goldman et al. [19] reported that across 420 US SPED teachers, actual AI use in writing instruction averaged only 2.63 on a five-point scale, despite general awareness of tools; teacher attitudes were the strongest predictor of use, explaining 53% of variance in AI integration alongside preparedness to integrate technology. Survey-based studies such as these demonstrate that scale instruments are well-suited to quantifying teachers' level of AI utilization and identifying the attitudinal and preparedness factors that predict adoption.

Professional development and AI literacy are consistently identified as the strongest enablers of adoption. Manaig et al. [20] found that among 144 public school teachers in Laguna, Philippines, attendance at AI- or ICT-related training was the only demographic variable to significantly influence AI awareness ($p = .044$), and a moderate positive correlation existed between AI awareness and digital competence ($r = .662$, $p = .000$). Sümer Dodur and Köse [21] established that AI literacy mediates the link between teacher conscientiousness and positive attitudes toward AI among pre-service SPED teachers, confirming that training can reduce AI anxiety and cultivate readiness. Kelley and Wenzel [5] demonstrated that a collaborative, multi-phase professional inquiry model progressively built AI competence and translated into measurably higher student preparedness. Li [22] proposed a three-tiered support system—spanning policy, institutional infrastructure, and individual teacher literacy—as a practical framework for enabling sustainable AI integration in SPED contexts. Tabuena [23] reinforced these findings in the Philippine setting, where community college instructors demonstrated high general AI awareness but uneven confidence, particularly among part-time educators, highlighting the need for structured, targeted training.

Challenges and Limitations

Although AI holds substantial promise, its implementation in special education—particularly in small-school and resource-limited contexts—faces serious barriers. Infrastructure deficits are the most frequently cited obstacle. Almarzouq et al. [24] reported that the absence of modern devices and reliable internet connectivity in government special schools received the highest obstacle rating ($M = 4.96$) among Kuwaiti SPED teachers. In developing-country contexts, Gupta and Kaul (2024) documented that India's uneven access to electricity, internet, and skilled technical personnel in rural areas severely limits AI deployment, and that solutions developed for high-resource English-language environments are poorly suited to diverse local contexts. Chanthiran et al. [17] similarly found that limited institutional funding for advanced AI tools—especially in rural Malaysian schools—constitutes a

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significant implementation barrier. Fitas [3] cautioned that without deliberate equity-conscious strategies, AI risks widening the digital divide between well-resourced and under-resourced schools.

Insufficient teacher training compounds these structural challenges. Almarzouq et al. [24] found that inadequate training received a "very high" severity rating ($M = 4.86$), with teachers pointing to the absence of ministry-provided training as a systemic failure. Wabingga [25] documented those SPED teachers in Davao del Sur, Philippines, identified a lack of technological expertise as a central challenge during the pandemic transition, amplifying pre-existing professional vulnerabilities. Goldman et al. [19] corroborated that US SPED teachers felt largely unprepared to integrate AI into instructional practice despite evidence supporting its effectiveness. Vital et al. (2025) further identified concerns about AI bias and insufficient transparency in data use among Filipino teachers, reinforcing that ethical preparedness is as important as technical training. These ethical concerns—including data privacy, algorithmic bias, over-reliance on technology, and the risk of diminishing essential human interaction—are consistently raised across international literature [1, 2, 15]. Taken together, these barriers are especially consequential for small schools in developing regions, where limited resources, thin staffing, and inadequate connectivity converge to create conditions in which even well-intentioned AI policies struggle to reach the classroom level.

Synthesis of Findings and Research Gap

Across the reviewed literature, five consistent patterns emerge. First, AI demonstrably improves personalized instruction, accessibility, and student outcomes in special education settings globally. Second, SPED teachers generally hold favorable attitudes toward AI, but a persistent attitude-practice gap limits actual classroom integration. Third, targeted AI literacy training is the single most powerful enabler of adoption, outweighing demographic variables such as age or experience. Fourth, infrastructure limitations, ethical concerns, and insufficient professional development are the primary barriers, especially in developing and resource-constrained contexts. Fifth, AI must function as a complement to—not a substitute for—the relational and pedagogical expertise of human educators [3, 7, 4].

Despite this growing evidence base, critical gaps remain. Existing research is heavily concentrated in high-income countries—the United States, Middle Eastern nations, Turkey, and parts of Europe—with limited empirical representation from Southeast Asian and other developing contexts (Al-Hendawi & H.E., 2025; Gupta & Kaul, 2024). Within the Philippines, available studies examine general rather than special education settings, or address teacher attitudes and perceptions without quantifying actual levels of AI use [20, 14, 23]. No quantitative study to date has specifically measured how SPED teachers utilize AI in small, localized Philippine school settings. This absence of locally grounded, empirical data is particularly consequential given the unique resource realities, community profiles, and linguistic contexts of schools outside major urban centers—conditions that substantially shape how AI is accessed and experienced on the ground.

Addressing this gap, the present study employs a quantitative, survey-based design to measure the level of AI utilization among SPED teachers at Tomas Sagun Integrated School in Zamboanga del Sur, Pagadian City, Philippines. Given the small number of teacher participants characteristic of a single-school investigation, non-parametric statistical analyses are appropriate, as these methods make no assumption of normal distribution and are well-validated for small-sample educational research [19, 18, 20]. By systematically measuring teachers' practices, readiness, and degree of AI integration through scaled instruments, this study aims to generate empirical evidence that fills a documented void in Philippine SPED literature. The findings are expected to contribute context-sensitive, quantifiable data to the broader international conversation on equitable AI integration for learners with special needs. The study thus moves forward to examine how teachers at Tomas Sagun Integrated School actually utilize Artificial Intelligence in supporting the education of students with diverse learning needs.

Objectives

This study aims to determine the level of Artificial Intelligence (AI) utilization among Special Education (SPED) teachers at Tomas Sagun Integrated School in supporting students with special needs, and to examine whether significant differences or relationships exist between selected teacher profile/attitudinal variables and their level of AI utilization.

Specific Objectives

Specifically, this study seeks to:

1. Describe the profile of SPED teachers in terms of:
   a. age;
   b. sex;
   c. highest educational attainment;
   d. years of teaching experience in special education; and
   e. attendance in AI- or ICT-related training.
2. Determine the level of AI utilization of SPED teachers across the following instructional dimensions:
   a. personalized and adaptive instruction;
   b. assistive technology and accessibility tools;
   c. assessment and progress monitoring;
   d. behavior and emotional support; and
   e. IEP development and documentation.
3. Assess the teachers perceived readiness and attitudes toward AI integration in special education.
4. Identify the challenges and barriers experienced by SPED teachers in utilizing AI tools for learners with special needs.

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5. Determine whether significant differences exist in the level of AI utilization when teachers are grouped according to their profile variables (age, sex, educational attainment, years of experience, and training attendance).

6. Determine whether a significant relationship exists between teachers perceived readiness/attitudes toward AI and their level of AI utilization.

Variables of the Study

The study involves two major variable categories grounded in the RRL finding that teacher profile characteristics and attitudinal readiness are the primary predictors of actual AI use [18, 19, 20].

Category	**Variable**	**Role in Study**
Independent Variable (IV) — Group 1: Teacher Profile Characteristics	• Age • Sex • Educational Attainment • Years of SPED Experience • AI/ICT Training Attendance	Grouping variables for non-parametric comparison tests. Training attendance is the strongest demographic predictor of AI awareness [20, 18].
Independent Variable (IV) — Group 2: Attitudinal Variables	• Perceived AI readiness • Attitudes toward AI • AI literacy / competence	Tested for correlation with DV. Attitudes are the strongest predictor of actual AI use, explaining up to 53% of variance in adoption [19, 21].
Dependent Variable (DV): Level of AI Utilization	• Personalized/adaptive instruction • Assistive technology & accessibility • Assessment & progress monitoring • Behavior & emotional support • IEP development & documentation	Primary outcome variable. Measured via Likert-type scale across 5 instructional dimensions grounded in the RRL [1, 7, 8].

NULL AND ALTERNATIVE HYPOTHESES

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The following hypotheses guide non-parametric statistical testing. Given the small, single-school sample, non-parametric tests (Mann-Whitney U, Kruskal-Wallis H, and Spearman Rank Correlation) are used because they require no assumption of normality and are valid for ordinal, Likert-type survey data [26].

Hypothesis Set 1 — Differences in AI Utilization by Teacher Profile (Objectives 1 & 5)

H_{01}: There is no significant difference in the level of AI utilization when SPED teachers are grouped by age.

H_{11}: There is a significant difference in the level of AI utilization when SPED teachers are grouped by age. *[Kruskal-Wallis H]*

H_{02}: There is no significant difference in the level of AI utilization when SPED teachers are grouped by sex.

H_{12}: There is a significant difference in the level of AI utilization when SPED teachers are grouped by sex. *[Mann-Whitney U]*

H_{03}: There is no significant difference in the level of AI utilization when SPED teachers are grouped by highest educational attainment.

H_{13}: There is a significant difference in the level of AI utilization when SPED teachers are grouped by highest educational attainment. *[Kruskal-Wallis H]*

H_{04}: There is no significant difference in the level of AI utilization when SPED teachers are grouped by years of SPED teaching experience.

H_{14}: There is a significant difference in the level of AI utilization when SPED teachers are grouped by years of SPED teaching experience. *[Kruskal-Wallis H]*

H_{05}: There is no significant difference in the level of AI utilization when SPED teachers are grouped by attendance in AI- or ICT-related training.

H_{15}: There is a significant difference in the level of AI utilization when SPED teachers are grouped by attendance in AI- or ICT-related training. *[Mann-Whitney U — highest likelihood of significance; supported by Manaig et al., 2025]*

Hypothesis Set 2 — Relationship Between Readiness/Attitudes and AI Utilization (Objective 6)

H_{06}: There is no significant relationship between SPED teachers perceived readiness and attitudes toward AI and their level of AI utilization.

H_{16}: There is a significant positive relationship between SPED teachers perceived readiness and attitudes toward AI and their level of AI utilization. *[Spearman ρ — directional/positive; supported by Goldman et al., 2025; Fteiha et al., 2025; Sümer Dodur & Köse, 2025]*

Conceptual Framework

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The conceptual framework adopts an IV → Contextual Mediators → DV structure, illustrating how teacher characteristics and attitudes shape AI utilization, filtered through enabling and constraining contextual conditions.

INDEPENDENT VARIABLES	→	**CONTEXTUAL MEDIATORS**	→	**DEPENDENT VARIABLE**
Profile Variables: • Age • Sex • Educational Attainment • Years of SPED Experience • AI/ICT Training Attendance Attitudinal **Variables:** • Perceived AI readiness • Attitudes toward AI • AI literacy / competence	→	**Enabling Factors:** • AI/ICT training access • Institutional support • Devices & internet Barriers: • Infrastructure gaps • Inadequate training • Ethical concerns • Limited funding	→	**Level of AI Utilization** • Personalized & adaptive instruction • Assistive technology & accessibility • Assessment & progress monitoring • Behavior & emotional support • IEP development & documentation

Figure 1. *Conceptual Framework: IV → Context → DV Model of SPED Teachers' AI Utilization at Tomas Sagun Integrated School*

Independent Variables (IV). The first IV group consists of teacher profile characteristics, used as grouping variables in non-parametric comparisons. Research consistently identifies AI/ICT training attendance as the strongest demographic predictor of AI awareness and use [20, 18], while age, sex, and experience show variable but potentially significant effects depending on local context [15]. The second IV group encompasses attitudinal variables—perceived readiness, attitudes toward AI, and AI literacy—which the literature establishes as the most powerful individual-level predictors of actual AI adoption, with attitudes alone explaining up to 53% of variance in AI integration [19, 21].

Contextual Mediators (Middle Component). The path from teacher characteristics to AI utilization is not direct but is shaped by enabling and constraining conditions. Enabling factors—training access, administrative support, device availability, and internet connectivity—amplify adoption. Barriers—including inadequate infrastructure, limited professional development, ethical concerns, and resource constraints—suppress it. This is critical for small-school, resource-limited contexts like Tomas Sagun Integrated School, where systemic barriers may override even the most positive teacher attitudes (Almarzouq et al., 2025; Gupta & Kaul, 2024; Wabingga, 2025).

Dependent Variable (DV). The outcome variable is the level of AI utilization, operationalized across five RRL-grounded instructional dimensions: (1) personalized and adaptive instruction [1, 7]; (2) assistive technology and accessibility tools [8, 9]; (3) assessment and progress monitoring [11, 19]; (4) behavior

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and emotional support [7]; and (5) IEP development and documentation [16, 1]. Each dimension is measured through a validated Likert-type scale, producing ordinal data for non-parametric analysis.

Theoretical Framework

Theory 1: Technology Acceptance Model (TAM) — Davis, 1989

The Technology Acceptance Model (TAM), developed by Davis [27], proposes that technology adoption is driven by two core perceptions: Perceived Usefulness, which refers to the belief that a technology will improve performance, and Perceived Ease of Use, which refers to the belief that using the technology requires minimal effort. These perceptions shape attitudes, which in turn drive intention to use, ultimately determining actual usage [27]. TAM directly explains the attitude-practice gap documented throughout the review of related literature. The finding that teachers hold positive views of AI yet use it infrequently [18, 19] is precisely what TAM predicts: positive attitudes are insufficient if teachers perceive AI as complex, unreliable, or insufficiently relevant to their SPED students' needs. In this regard, TAM theoretically grounds Objective 3, which assesses readiness and attitudes, as well as H_{06} and H_{16}, which examine the correlation between attitudes and AI use.

Theory 2: Unified Theory of Acceptance and Use of Technology (UTAUT) — Venkatesh et al., 2003

The Unified Theory of Acceptance and Use of Technology (UTAUT), introduced by Venkatesh et al. [28], extends TAM by proposing four determinants of technology use: Performance Expectancy, defined as the belief that technology improves outcomes; Effort Expectancy, referring to the perceived ease of use; Social Influence, which captures the effect of peers' and administrators' opinions; and Facilitating Conditions, which reflects the perception that organizational and technical infrastructure is available. UTAUT further specifies that age, gender, experience, and voluntariness moderate these relationships [28]. This framework is especially valuable to the present study because it positions facilitating conditions—including training access, device availability, internet connectivity, and technical support—as direct drivers of adoption. This maps precisely to the contextual mediators embedded in the conceptual framework and theoretically justifies testing for differences in AI utilization across teacher profile variables, as addressed in Objectives 1 and 5 and hypotheses H_{01} through H_{05}. Notably, the finding by Manaig et al. [20] that training attendance was the single most significant demographic predictor of AI awareness directly reflects UTAUT's facilitating conditions construct.

Theory 3: Technological Pedagogical Content Knowledge (TPACK) — Mishra & Koehler, 2006

The Technological Pedagogical Content Knowledge (TPACK) framework, proposed by Mishra and Koehler [29], posits that effective technology integration in teaching requires the intersection of three overlapping knowledge domains: Technological Knowledge (TK), which involves knowing how to use technology; Pedagogical Knowledge (PK), which encompasses knowing how to teach; and Content Knowledge (CK), which refers to knowing the subject matter. Effective practice emerges at the intersection of all three domains [29], and in the context of special education, content knowledge specifically refers to understanding distinct learning profiles, disability categories, and individualized student needs. TPACK frames AI utilization not as a technical skill in isolation but as a pedagogically situated practice, explaining why providing devices or training alone is insufficient: SPED teachers must connect AI tools (TK) to their understanding of students' disabilities (CK) through sound instructional strategies (PK). This is precisely what the five dependent variable dimensions of this study measure, as each requires TK-PK-CK integration specific to special education. As Li et al. [4] noted, many AI tools in inclusive education are "technologically advanced but pedagogically disconnected," a gap that TPACK explains directly. Furthermore, TPACK bridges this study's international theoretical grounding with the

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Philippine Professional Standards for Teachers (PPST), particularly Domain 1 on Content Knowledge and Pedagogy and Domain 4 on Curriculum and Planning.

Internal Consistency Matrix

RRL Finding or Gap	Research Objective	Hypothesis	Theory
Attitude-practice gap [19, 18]	Obj. 3: Assess readiness & attitudes; Obj. 6: Relate to AI use	H_{06}/H_{16}: Spearman ρ	TAM
Training = #1 demographic predictor [20]	Obj. 1e; Obj. 5: Test differences by training	H_{05}/H_{15}: Mann-Whitney U	UTAUT
5 AI instructional dimensions documented in SPED literature	Obj. 2: Measure AI use across 5 dimensions	All H_0 sets (DV = level of AI use in 5 areas)	TPACK
Barriers: infrastructure, training, ethics [24]	Obj. 4: Identify barriers	Descriptive; no hypothesis (maps to UTAUT facilitating conditions)	UTAUT
No localized quantitative PH SPED study exists [7]	All objectives fill this gap with small-sample, non-parametric data from Tomas Sagun IS	All hypotheses tested non-parametrically (no normality assumption required)	TAM + UTAUT + TPACK

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Methods

Research Design

This study will employ a **quantitative, non-parametric research design** to investigate the level of Artificial Intelligence (AI) utilization among Special Education (SPED) teachers at Tomas Sagun Integrated School in Pagadian City, Zamboanga del Sur, Philippines. Specifically, the study will use a **descriptive-comparative and correlational approach**: descriptive in that it will determine and describe the extent to which SPED teachers utilize AI tools across identified instructional dimensions; comparative in that it will examine whether significant differences in AI utilization levels exist across teacher profile groups; and correlational in that it will determine whether a significant relationship exists between teachers' perceived readiness and attitudes toward AI and their actual level of AI utilization.

A quantitative design is appropriate for this study because the primary objective is to produce measurable, empirical data on teachers' AI utilization—a dimension of SPED practice for which no localized, quantifiable evidence yet exists in Pagadian City or the broader Zamboanga del Sur region (Al-Hendawi & H.E., 2025; Gupta & Kaul, 2024). Survey-based, scale instruments have been validated as effective tools for measuring teachers' levels of AI use and identifying the attitudinal and preparedness factors that predict adoption [19, 18, 20]. The use of non-parametric statistical methods is specifically justified by the small number of SPED teacher-participants in a single-school setting, as these tests require no assumption of normal distribution and are robust for ordinal Likert-type data [26].

This design is deliberately aligned with the gaps identified in the literature. Existing Philippine studies on AI in education have relied on self-report perceptions and attitudinal surveys in general education settings [20, 23], without quantifying actual AI utilization levels specifically among SPED teachers. This study addresses that gap by operationalizing AI utilization across five empirically grounded instructional dimensions and subjecting responses to rigorous, hypothesis-driven statistical analysis.

Research Locale

The study will be conducted at **Tomas Sagun Integrated School**, a public school located in Pagadian City, Zamboanga del Sur, in the Zamboanga Peninsula region of the Philippines. Tomas Sagun Integrated School was selected as the research locale because it is a public institution that offers a Special Education program serving students with diverse exceptionalities, making it directly relevant to the focus of this investigation.

Pagadian City serves as the regional capital of Zamboanga del Sur and represents a *resource-constrained, developing urban context* that is characteristic of many public SPED settings outside the National Capital Region. The city has growing inclusive education initiatives aligned with the national mandate of the Department of Education; however, it continues to face significant challenges in technological access, infrastructure, and professional development support for SPED teachers—conditions that the RRL identifies as primary barriers to AI integration in similar settings (Almarzouq et al., 2025; Wabingga, 2025; Gupta & Kaul, 2024). This locale is therefore not only practically accessible but theoretically significant, as it represents precisely the type of underserved, small-school, developing-region context for which localized quantitative evidence on SPED teachers' AI utilization is most urgently needed.

The study is further significant in the context of the Department of Education's January 2026 launch of Project AGAP.AI (Accelerating Governance and Adaptive Pedagogy through Artificial Intelligence), which targets 1.5 million stakeholders nationwide—including SPED teachers—with AI literacy training and curriculum integration support [6]. Generating baseline, school-specific data from Tomas Sagun Integrated School will provide evidence that can inform how national AI policy initiatives are implemented and monitored at the ground level in communities like Pagadian City.

Research Participants

The participants of this study will be **all SPED teachers currently assigned to Tomas Sagun Integrated School** during the Academic Year 2025–2026 who are actively teaching students with special needs. Given the small, defined population of SPED teachers in a single school, the study will employ a *total population sampling approach*—meaning all eligible teachers at the school will be included as participants, without exclusion, to maximize the dataset available for non-parametric analysis.

Participants must meet the following inclusion criteria: (a) they hold a teaching position in the Special Education program of Tomas Sagun Integrated School; (b) they are actively handling learners with one or more of the following exceptionalities during the study period: intellectual disability, learning disability, autism spectrum disorder, hearing impairment, visual impairment, communication disorder, or other recognized special educational needs; and (c) they are available and willing to participate voluntarily.

The participant pool is expected to reflect a range of teacher profiles in terms of age, sex, educational attainment, years of SPED teaching experience, and attendance in AI- or ICT-related training. This diversity is intentional and methodologically important, as the study tests whether these profile variables significantly differentiate levels of AI utilization—a question directly informed by the literature showing that training attendance [20], attitudes [19], and years of experience [15] are key predictors of AI adoption among SPED teachers.

Sampling Techniques

Given that the study is confined to a single school with a small, well-defined population of SPED teachers, **total enumeration (census sampling)** will be used as the primary sampling strategy. Total enumeration means that every member of the target population—all SPED teachers at Tomas Sagun Integrated School—will be included as participants, provided they meet the stated inclusion criteria. This approach eliminates sampling error, maximizes statistical power within the available population, and is the most appropriate sampling strategy for small, intact professional groups in educational research [26].

Total enumeration is especially well-suited to this study because: (a) the SPED teacher population at a single school is naturally small, making random or stratified sampling unnecessary and statistically counterproductive; (b) non-parametric tests, which this study employs, are specifically designed to handle small samples without requiring large-sample normality assumptions; and (c) including all available participants—rather than a subset—ensures that no relevant teacher experience, profile variation, or utilization pattern is omitted from the analysis.

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Should the school's SPED department include *teaching aides, resource room teachers, or co-teachers* who directly support students with special needs using AI tools, they may be considered for inclusion as supplementary informants, subject to the approval of school administration and the judgment of the researcher. Their data would be analyzed separately or descriptively to avoid confounding the primary teacher dataset.

Research Instrument

The primary data collection instrument will be a researcher-constructed, structured questionnaire composed of two major parts, designed to operationalize the study's variables and generate ordinal data appropriate for non-parametric analysis.

Part I: Teacher Profile will gather demographic and professional background information on each participant, including: age, sex, highest educational attainment, number of years teaching in special education, types of exceptionalities handled, and attendance in AI- or ICT-related training or professional development. These variables constitute the Independent Variables (Group 1) of the study and will serve as grouping variables for Kruskal-Wallis H and Mann-Whitney U comparison tests.

Part II: Level of AI Utilization Scale will measure the dependent variable—teachers' level of AI utilization—across five instructional dimensions identified from the RRL: (1) *personalized and adaptive instruction*; (2) *assistive technology and accessibility tools*; (3) *assessment and progress monitoring*; (4) *behavior and emotional support*; and (5) *IEP development and documentation*. Each dimension will be measured through a set of items rated on a 5-point Likert scale (1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Often, 5 = Always). An additional subscale will measure teachers perceived readiness and attitudes toward AI—the Independent Variable (Group 2)—also using a 5-point Likert format.

The instrument will be validated through *content validity review by a panel of experts* in special education and educational technology, and pilot-tested with a small group of SPED teachers outside Tomas Sagun Integrated School to assess clarity, reliability, and consistency. Internal consistency will be evaluated using *Cronbach's Alpha*, with a threshold of $\alpha \geq .70$ considered acceptable for research purposes.

Data Collection Procedure

Prior to data collection, the researcher will secure written approval from the School Division Superintendent of Pagadian City and the School Principal of Tomas Sagun Integrated School. Upon approval, an orientation session will be conducted to inform all eligible SPED teachers about the purpose, scope, and voluntary nature of the study. Informed consent forms will be distributed and collected before any questionnaire is administered.

The structured questionnaire will be administered personally by the researcher during a scheduled, non-instructional period to minimize disruption to classroom activities. Participants will be given adequate time to respond—estimated at 20 to 30 minutes—and the researcher will remain available to address any questions about item clarity. Completed questionnaires will be collected on the same day to ensure a high response rate. All instruments will be encoded and stored securely for analysis.

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Data Analysis

All quantitative data will be processed using appropriate statistical software. The analysis will proceed in three stages corresponding to the specific objectives of the study.

Stage 1 — Descriptive Statistics (Objectives 1 & 2). Frequency counts and percentage distributions will be used to describe the profile of SPED teacher-participants. Weighted means and standard deviations will be computed for each item and dimension of the AI Utilization Scale to determine the overall level and pattern of AI use across the five instructional dimensions. A descriptive scale (e.g., Never, Rarely, Sometimes, Often, Always) will be applied to interpret weighted mean scores meaningfully.

Stage 2 — Non-Parametric Comparison Tests (Objective 5). To test Hypotheses H_{01} through H_{05}, non-parametric tests will be employed to compare AI utilization levels across teacher profile groups:

Profile Variable	Grouping	Statistical Test
Age	3 or more age brackets	Kruskal-Wallis H Test
Sex	2 groups (Male/Female)	Mann-Whitney U Test
Educational Attainment	3 or more levels	Kruskal-Wallis H Test
Years of SPED Experience	3 or more ranges	Kruskal-Wallis H Test
AI/ICT Training Attendance	2 groups (Attended/Not)	Mann-Whitney U Test

Table 1. Non-Parametric Tests Applied to Hypothesis Set 1 (Objectives 1 & 5)

These tests are appropriate because they make no assumption of normality, are designed for ordinal Likert-type data, and are well-validated for small-sample educational research [26]. The significance level will be set at $\alpha = .05$ for all tests.

Stage 3 — Spearman Rank-Order Correlation (Objective 6). To test Hypothesis H_{06}, Spearman's Rank-Order Correlation Coefficient (ρ) will be computed to determine the strength and direction of the relationship between SPED teachers perceived readiness and attitudes toward AI (IV Group 2) and their level of AI utilization (DV). Spearman's ρ is the appropriate correlation measure for this analysis because both variables are measured on ordinal Likert scales and the sample size is small [26]. A positive and statistically significant ρ is hypothesized, consistent with the literature finding that readiness and favorable attitudes are the strongest individual-level predictors of actual AI adoption [19, 18, 21].

Ethical Considerations

As this study has not yet been conducted, ethical protocols will be strictly observed throughout all phases of implementation, in accordance with the principles of research ethics applicable to educational and social science inquiry.

Permission and Institutional Clearance. Before any data collection activity begins, the researcher will obtain written approval from the Schools Division Superintendent of Pagadian City and the School Principal of Tomas Sagun Integrated School. Appropriate institutional research clearance will be secured as required by the Division and the researcher's academic institution.

Informed Consent. All participant-teachers will be provided with a written Informed Consent Form in language that is clear, accessible, and free of coercion. The form will explain: the purpose and scope of the study, the nature of participation, the types of data to be collected, how data will be used and stored, and the participant's right to withdraw at any time and for any reason without penalty or consequence to their employment or professional standing.

Voluntariness and non-coercion. Participation will be entirely voluntary. No teacher will be required, pressured, or incentivized to participate. The researcher will make clear that non-participation or withdrawal will have no bearing on the teacher's employment, performance evaluation, or professional relationships within the school.

Confidentiality and Anonymity. All data collected will be treated with strict confidentiality. Questionnaire responses will be anonymized before encoding and analysis; no participant will be identified by name, class, or any identifying detail in any report or publication arising from this study. All data files will be stored securely and accessible only to the researcher and authorized academic supervisors. Data will be retained only as long as required for this study and will be properly disposed of thereafter.

Data Integrity and Academic Honesty. All data will be recorded accurately and reported truthfully. Statistical results will not be selectively omitted, manipulated, or misrepresented. The findings of this study will be used exclusively for legitimate academic and research purposes, consistent with the ethical standards of educational research in the Philippines and internationally.

Sensitivity to the SPED Context. The researcher acknowledges that the participants of this study are professionals working in a demanding and often under-resourced environment. All interactions with participants will be conducted with respect, sensitivity, and recognition of the professional expertise that SPED teachers bring to their work. The study's findings will be framed constructively—aimed at informing policy and professional development, not at evaluating or judging individual teachers' performance.

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Results And Discussions

Table 1. Dimension A: Personalized and Adaptive Instruction

n = 8 teacher-participants

Item	Indicator / Statement	5 Always	4 Often	3 Sometimes	2 Rarely	1 Never	Weighted Mean	Description
A1	I use AI-powered adaptive learning platforms (e.g., apps that adjust content difficulty based on student performance) to individualize lessons for my students.	1	2	1	2	2	2.75	Sometimes
A2	I use AI tools to create or modify learning materials (e.g., simplified text, visual supports, audio content) that match each student's specific learning profile.	1	3	1	2	1	3.13	Sometimes
A3	I use AI-based analytics or progress dashboards to track individual student performance and adjust my instructional pacing accordingly.	1	1	1	2	3	2.38	Rarely
A4	I use AI tools to differentiate tasks or activities so that students with different exceptionalities can work at appropriate levels simultaneously.	1	2	0	4	1	2.75	Sometimes
A5	I use AI-generated recommendations (e.g., from a learning management system) to guide my lesson planning based on student performance data.	1	2	1	2	2	2.75	Sometimes
A6	I use generative AI (e.g., ChatGPT, Gemini, or similar) to design personalized learning activities, visual schedules, or social stories for individual students.	2	1	2	2	1	3.13	Sometimes
						Overall Weighted Mean	**2.81**	**Sometimes**

Rating Scale: 5 – Always | 4 – Often | 3 – Sometimes | 2 – Rarely | 1 – Never

Scale range: 4.21–5.00 = Always; 3.41–4.20 = Often; 2.61–3.40 = Sometimes; 1.81–2.60 = Rarely; 1.00–1.80 = Never

The data gathered from the eight special education teacher-participants regarding their use of AI tools for personalized and adaptive instruction reveals an overall weighted mean of 2.81, which falls within the *"Sometimes"* range of the five-point rating scale. This suggests that while AI integration is not absent from their instructional practice, it remains inconsistent and has yet to become a regular feature of how these teachers individualize learning for their students.

Among the six indicators under this dimension, the use of AI tools to create or modify differentiated learning materials (A2) and the use of generative AI platforms such as ChatGPT or Gemini to design personalized activities, visual schedules, or social stories (A6) both yielded the highest weighted means at 3.13, still described as *"Sometimes."* These findings suggest that when teachers do turn to AI, they are most likely to engage with it as a content creation or material development tool rather than as a system for tracking or managing student learning. The relative accessibility and familiarity of generative AI tools may explain why these two indicators ranked highest among the group.

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Three indicators — the use of AI-powered adaptive learning platforms (A1), AI tools for simultaneous differentiation across exceptionalities (A4), and AI-generated recommendations for lesson planning (A5) — each received a weighted mean of 2.75, likewise categorized as *"Sometimes."* Notably, in A4, four out of eight teachers reported that they *rarely* use AI to differentiate tasks for students with varying exceptionalities working simultaneously, indicating that real-time, AI-supported differentiation remains a largely unrealized practice within this group.

The lowest-rated indicator was A3, which pertains to the use of AI-based analytics or progress dashboards to monitor individual student performance and adjust instructional pacing. With a weighted mean of 2.38, this item fell in the *"Rarely"* category — the only indicator to do so. Three participants reported never using such tools, and two reported using them only rarely. This finding points to a significant gap in data-driven AI use, which is widely considered foundational to truly adaptive and personalized instruction.

Taken together, the results paint a picture of teachers who are beginning to experiment with AI, particularly generative tools for instructional preparation, but who have not yet fully embraced the more systematic and data-informed dimensions of AI-assisted teaching. The overall pattern suggests that familiarity and ease of access play a central role in shaping which AI tools are adopted, while tools that require deeper integration into assessment and progress monitoring workflows remain underutilized. These findings underscore the need for targeted professional development that builds teacher capacity not only in using generative AI for content creation, but also in leveraging AI-based analytics and adaptive platforms to more meaningfully personalize instruction for students with diverse learning needs.

Table 2. Dimension B: Assistive Technology and Accessibility Tools

n = 8 teacher-participants

Item	Indicator / Statement	5 Always	4 Often	3 Sometimes	2 Rarely	1 Never	Weighted Mean	Description
B1	I use or support students in using AI-powered text-to-speech tools (e.g., NaturalReader, Read&Write, Google Text-to-Speech) to help them access written content.	1	1	1	1	4	2.25	Rarely
B2	I use or support students in using AI-powered speech-to-text tools (e.g., Google Dictation, Dragon) to help them express ideas or complete written tasks.	1	1	0	2	4	2.13	Rarely
B3	I use or support students in using AI-based Augmentative and Alternative Communication (AAC) devices or apps (e.g., Proloquo2Go, Snap Core) to support communication.	1	1	0	3	3	2.25	Rarely
B4	I use AI tools that provide real-time captioning or transcription to support students with hearing impairment during instruction.	1	0	1	2	4	2.00	Rarely
B5	I use AI-powered image recognition or description tools (e.g., Seeing AI, Microsoft Lens) to support students with visual impairment.	1	1	0	1	5	2.00	Rarely
B6	I use AI tools to produce accessible versions of learning materials (e.g., audio files, simplified text, visual formats) for students with diverse accessibility needs.	1	2	0	4	1	2.75	Sometimes
						Overall Weighted Mean	**2.23**	**Rarely**

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Rating Scale: 5 – Always | 4 – Often | 3 – Sometimes | 2 – Rarely | 1 – Never

Scale range: 4.21–5.00 = Always; 3.41–4.20 = Often; 2.61–3.40 = Sometimes; 1.81–2.60 = Rarely; 1.00–1.80 = Never

The results for Dimension B reveal an overall weighted mean of 2.23, which falls within the *"Rarely"* range of the five-point rating scale. This finding indicates that the eight special education teacher-participants seldom integrate AI-powered assistive technology and accessibility tools into their instructional practice, pointing to a significant gap in the use of tools that are specifically designed to support students with disabilities in accessing learning.

Five of the six indicators under this dimension were rated in the *"Rarely"* category, underscoring the breadth of this gap. The use of AI-powered text-to-speech tools such as NaturalReader or Read&Write (B1) and AI-based Augmentative and Alternative Communication (AAC) devices or apps such as Proloquo2Go or Snap Core (B3) both received weighted means of 2.25. While these represent the relatively higher end within the dimension, four out of eight teachers still reported never using text-to-speech tools, and an equal number reported never using AAC technology — a particularly concerning finding given that AAC is widely regarded as an essential support for students with complex communication needs. Similarly, AI-powered speech-to-text tools (B2) yielded a weighted mean of 2.13, with four teachers reporting they never use such tools and two reporting only rare use, suggesting that even relatively mainstream dictation technologies have not been widely adopted in these classrooms.

The two lowest-rated indicators were B4 and B5, both with weighted means of 2.00. B4 pertains to the use of AI tools that provide real-time captioning or transcription to support students with hearing impairment, while B5 concerns AI-powered image recognition or description tools such as Seeing AI or Microsoft Lens to support students with visual impairment. In both cases, four to five of the eight participants indicated they never use these tools. These results suggest that AI applications designed for students with sensory disabilities remain largely unfamiliar or inaccessible to the teacher-participants, which may reflect a lack of relevant training, limited availability of such tools in their school contexts, or the possibility that few of their current students have these specific disability profiles.

The only indicator to fall outside the *"Rarely"* range was B6, which concerns the use of AI tools to produce accessible versions of learning materials — such as audio files, simplified text, or visual formats — for students with diverse accessibility needs. With a weighted mean of 2.75, this item was described as *"Sometimes,"* and notably, two teachers reported using such tools *"Often."* This suggests that when AI is applied to accessibility, teachers are most likely to engage with it through material adaptation and universal design, which aligns with the broader pattern observed in Dimension A, where content creation emerged as the primary mode of AI use.

Taken as a whole, the findings for Dimension B paint a sobering picture of AI-assisted accessibility support in these special education classrooms. The consistent pattern of *"Rarely"* ratings across most indicators suggests that the transformative potential of AI-powered assistive technology — from AAC to captioning to image description — has not yet been meaningfully realized in practice. Addressing this gap will require deliberate and sustained professional development focused specifically on assistive technology tools, alongside systemic support for procurement, implementation, and ongoing coaching to help teachers integrate these tools confidently and consistently into their daily instruction.

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Table 3. Dimension C: Assessment and Progress Monitoring

n = 8 teacher-participants

Item	Indicator / Statement	5 Always	4 Often	3 Sometimes	2 Rarely	1 Never	Weighted Mean	Description
C1	I use AI-powered assessment tools (e.g., automated quizzes, diagnostic platforms) to identify students' learning gaps or specific academic difficulties.	1	1	1	2	3	2.38	Rarely
C2	I use AI tools to generate performance reports or visual progress graphs that track each student's learning growth over time.	0	1	1	1	5	1.75	Never
C3	I use AI-assisted grading or feedback tools to provide faster and more consistent feedback on student work or classroom tasks.	0	0	2	1	5	1.63	Never
C4	I use AI tools to conduct early screening or identification of potential learning difficulties (e.g., indicators of dyslexia or attention difficulties) among my students.	0	0	1	1	6	1.38	Never
C5	I use digital or AI-based portfolio systems to document and monitor student growth across academic and functional skill areas.	0	0	1	0	7	1.25	Never
C6	I use AI tools to generate data-based reports or summaries that I share with parents or guardians during progress reporting.	0	0	1	0	7	1.25	Never
						Overall Weighted Mean	**1.60**	**Never**

Rating Scale: 5 – Always | 4 – Often | 3 – Sometimes | 2 – Rarely | 1 – Never

Scale range: 4.21–5.00 = Always; 3.41–4.20 = Often; 2.61–3.40 = Sometimes; 1.81–2.60 = Rarely; 1.00–1.80 = Never

The results for Dimension C present the most critical findings of the study thus far, with an overall weighted mean of 1.60 falling within the *"Never"* range of the five-point rating scale. This indicates that the eight special education teacher-participants virtually do not use AI tools for assessment and progress monitoring purposes, representing the most pronounced gap identified across all dimensions examined.

The highest-rated indicator in this dimension was C1, which concerns the use of AI-powered assessment tools such as automated quizzes or diagnostic platforms to identify students' learning gaps or academic difficulties. With a weighted mean of 2.38, this item was described as *"Rarely,"* and it stands apart from the rest of the dimension as the only indicator to reach this range. Even so, three of the eight teachers reported never using such tools, and two reported only rare use — a pattern that signals limited engagement even with the most commonly recognized form of AI-assisted assessment.

The remaining five indicators all fell within the *"Never"* category, revealing a near-total absence of AI use across the more sophisticated functions of assessment and monitoring. The use of AI tools to generate performance reports or visual progress graphs (C2) yielded a weighted mean of

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1.75, with five teachers reporting they never use such tools. AI-assisted grading or feedback tools (C3) received a weighted mean of 1.63, again with five teachers reporting no use at all. These findings suggest that even time-saving AI applications directly relevant to teacher workload — such as automated feedback generation — have not been adopted within this group.

The three lowest-rated indicators were C4, C5, and C6, with weighted means of 1.38, 1.25, and 1.25, respectively. C4, which pertains to using AI for early screening or identification of potential learning difficulties such as indicators of dyslexia or attention difficulties, was rated "Never" by six of eight teachers. Most strikingly, C5 and C6 — concerning the use of digital or AI-based portfolio systems for documenting student growth, and the use of AI tools to generate data-based reports for parent communication — were each rated "Never" by seven of the eight participants, with only one teacher in each case reporting "Sometimes" use. These results indicate that the documentation and communication functions of AI-assisted assessment are almost absent from the practice of these teachers.

Taken together, the findings for Dimension C reveal a deeply underutilized area of AI integration that carries significant consequences for students with exceptionalities, for whom ongoing progress monitoring and data-driven decision-making are not merely beneficial but are often legally and professionally mandated. The near-universal pattern of "Never" ratings across assessment-related indicators suggests that structural, systemic, and professional barriers — including limited access to AI-based assessment platforms, inadequate training, and possibly heavy reliance on traditional paper-based monitoring methods — continue to impede meaningful AI adoption in this critical aspect of special education practice. These findings call urgently for targeted intervention at both the school and policy level to equip special education teachers with the tools and competencies needed to leverage AI for more responsive, evidence-based assessment and progress monitoring.

Table 4. Dimension D: Behavior and Emotional Support

n = 8 teacher-participants

Item	Indicator / Statement	5 Always	4 Often	3 Sometimes	2 Rarely	1 Never	Weighted Mean	Description
D1	I use AI-based tools or apps (e.g., emotion recognition software, social-emotional learning platforms) to help students identify and manage their emotions.	1	1	1	1	4	2.25	Rarely
D2	I use AI tools to support Positive Behavior Intervention and Support (PBIS) strategies, such as digital behavior trackers or AI-assisted reward systems.	1	0	1	0	6	1.75	Never
D3	I use AI-driven gamified platforms or apps to develop social skills among students with ASD or other social-emotional needs.	0	1	1	0	6	1.63	Never
D4	I use AI tools to create visual behavior supports (e.g., digital token boards, AI-generated social stories, visual timers) for my students.	1	0	2	0	5	2.00	Rarely
D5	I use AI tools to analyze patterns in student behavior data to identify triggers proactively and plan preventive behavioral strategies.	1	0	1	0	6	1.75	Never

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Item	Indicator / Statement	5 Always	4 Often	3 Sometimes	2 Rarely	1 Never	Weighted Mean	Description
D6	I use AI tools to document and monitor behavioral incidents or intervention outcomes for individual students over time.	1	0	1	0	6	1.75	Never
						Overall Weighted Mean	**1.85**	**Rarely**

Rating Scale: 5 – Always | 4 – Often | 3 – Sometimes | 2 – Rarely | 1 – Never

Scale range: 4.21–5.00 = Always; 3.41–4.20 = Often; 2.61–3.40 = Sometimes; 1.81–2.60 = Rarely; 1.00–1.80 = Never

The results for Dimension D reveal an overall weighted mean of 1.85, which falls at the lower boundary of the *"Rarely"* range on the five-point rating scale. This finding indicates that the eight special education teacher-participants almost never use AI tools to support student behavior management and emotional development, reflecting a critical underutilization of technology in an area that is central to the daily realities of special education practice.

Among the six indicators in this dimension, D1 — which pertains to the use of AI-based tools such as emotion recognition software or social-emotional learning platforms to help students identify and manage their emotions — received the highest weighted mean at 2.25, described as *"Rarely."* While this places it at the top of the dimension, four out of eight teachers still reported never using such tools, suggesting that even the most familiar category of behavioral and emotional AI support has limited reach within this group. One teacher each reported always, often, sometimes, and rarely using emotion-support tools, indicating some variation in experience, but the overall pattern remains one of infrequent use.

D4, concerning the use of AI tools to create visual behavior supports such as digital token boards, AI-generated social stories, or visual timers, received a weighted mean of 2.00, also in the *"Rarely"* range. Notably, two teachers reported using such tools sometimes and one always, suggesting modest familiarity with AI-generated visual supports — tools that are often cited as highly practical and accessible for special education teachers. Nevertheless, five teachers reported never using these tools, indicating that awareness and access remain barriers for the majority.

The remaining four indicators — D2, D3, D5, and D6 — all fell within the *"Never"* category, with weighted means ranging from 1.63 to 1.75. D2, which addresses the use of AI tools to support Positive Behavior Intervention and Support (PBIS) strategies such as digital behavior trackers or AI-assisted reward systems, received a weighted mean of 1.75, with six out of eight teachers reporting they never use such tools. Similarly, D5 and D6, which concern the use of AI to analyze patterns in student behavior data for proactive planning and to document and monitor behavioral incidents over time, each yielded a weighted mean of 1.75 with six non-users — findings that point to a near-total absence of data-informed behavioral practice using AI. D3, which pertains to the use of AI-driven gamified platforms to develop social skills among students with ASD or other social-emotional needs, recorded the lowest weighted mean in the dimension at 1.63, with six teachers reporting they never use such tools.

Taken together, the results for Dimension D paint a troubling picture for a group of educators whose students frequently present with complex behavioral and emotional needs. The consistent clustering of responses in the *"Never"* and *"Rarely"* ranges across all six indicators suggests that

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AI-powered behavioral and emotional support tools have not yet entered the regular instructional toolkit of these teachers. Whether this reflects limited awareness of available tools, inadequate professional preparation, restricted school-level access, or a perception that behavioral support remains a domain better handled through relational rather than technological means, the findings underscore a significant opportunity for growth. Targeted training on AI tools for behavior monitoring, social-emotional learning, and PBIS implementation — paired with school-level support for technology access — would be essential steps toward bridging this gap and ensuring that students with exceptionalities receive the consistent, data-informed behavioral support they need.

Table 5. Dimension E: IEP Development and Documentation

n = 8 teacher-participants

Item	Indicator / Statement	5 Always	4 Often	3 Sometimes	2 Rarely	1 Never	Weighted Mean	Description
E1	I use AI tools (e.g., generative AI, IEP software) to assist me in drafting or formatting Individualized Education Program (IEP) goals and objectives.	2	1	3	1	1	3.25	Sometimes
E2	I use AI tools to generate or review suggested IEP goals based on student assessment data or performance records.	2	1	3	1	1	3.25	Sometimes
E3	I use AI tools to produce narrative progress reports or summaries for IEP meetings, reducing documentation time.	2	1	3	0	2	3.13	Sometimes
E4	I use AI platforms or digital tools to organize, store, and retrieve student IEP records and educational documentation.	0	1	3	0	4	2.13	Rarely
E5	I use AI tools to communicate IEP-related information (e.g., simplified progress summaries) to parents or guardians more effectively.	0	1	3	0	4	2.13	Rarely
E6	I use AI tools to check my IEP documents for completeness, alignment with learning standards, or consistency with student goals.	0	2	3	0	3	2.50	Rarely
Overall Weighted Mean							**2.73**	**Sometimes**

Rating Scale: 5 – Always | 4 – Often | 3 – Sometimes | 2 – Rarely | 1 – Never

Scale range: 4.21–5.00 = Always; 3.41–4.20 = Often; 2.61–3.40 = Sometimes; 1.81–2.60 = Rarely; 1.00–1.80 = Never

The results for Dimension E yield an overall weighted mean of 2.73, which falls within the *"Sometimes"* range of the five-point rating scale. This represents a notably higher level of AI integration compared to the preceding dimensions, suggesting that IEP development and documentation is the area in which the eight special education teacher-participants are most actively — though still inconsistently — engaging with AI tools. The findings reflect a pattern where AI use is concentrated in the drafting and goal-writing functions of IEP work, while organizational and communication-related functions remain considerably more limited.

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The three highest-rated indicators in the dimension all relate to the direct preparation of IEP content. E1, which concerns the use of AI tools such as generative AI or IEP software to assist in drafting or formatting IEP goals and objectives, and E2, which addresses the use of AI to generate or review suggested IEP goals based on student assessment data or performance records, both received weighted means of 3.25 — the highest scores in the entire dimension — described as *"Sometimes."* Notably, two teachers in each case reported always using AI for these purposes, and one reported doing so often, indicating that a small but meaningful subgroup has integrated AI into their IEP goal-writing workflow regularly. E3, which pertains to the use of AI to produce narrative progress reports or summaries for IEP meetings, followed closely with a weighted mean of 3.13, also in the *"Sometimes"* range. Again, two teachers reported always using AI in this capacity, pointing to the same subgroup of more advanced adopters driving the upper end of the distribution.

In contrast, the three indicators related to the organizational, communication, and quality-checking dimensions of IEP documentation fell into the *"Rarely"* category. E4 and E5 — concerning the use of AI platforms to organize, store, and retrieve student IEP records (E4) and to communicate IEP-related information to parents or guardians more effectively (E5) — each received a weighted mean of 2.13, with four out of eight teachers reporting they never use AI for these purposes and three reporting only sometimes. These results suggest that while teachers are beginning to explore AI as a writing aid for IEP preparation, they have not yet extended this integration into the administrative and relational dimensions of IEP work. E6, which addresses the use of AI to check IEP documents for completeness, alignment with learning standards, or consistency with student goals, yielded a weighted mean of 2.50, also described as *"Rarely."* Two teachers reported using AI often for this purpose, but three reported never doing so, reflecting continued unevenness in adoption.

Overall, the findings for Dimension E are among the most encouraging across all dimensions examined, as they suggest that AI has begun to find genuine utility among some teachers specifically in the time-intensive task of IEP goal-writing and progress report preparation. However, the sharp drop in use across documentation management, parent communication, and quality assurance tasks reveals that this engagement remains narrow in scope. To deepen and broaden AI integration in IEP-related work, professional development efforts should not only reinforce the use of AI for content drafting but also introduce teachers to platforms that support the full IEP documentation cycle — from goal alignment and record management to family communication — enabling a more holistic and efficient approach to one of special education's most demanding administrative responsibilities.

Table 6. Subscale F: Perceived Usefulness of AI in Special Education

n = 8 teacher-participants

Item	Indicator / Statement	5 Strongly Agree	4 Agree	3 Undecided	2 Disagree	1 Strongly Disagree	Weighted Mean	Description
F1	I believe that AI tools improve the quality of instruction I provide to students with special needs.	3	3	2	0	0	4.13	Agree
F2	I believe that AI tools help me save time on lesson preparation, documentation, and other administrative tasks.	3	4	1	0	0	4.25	Strongly Agree

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Item	Indicator / Statement	5 Strongly Agree	4 Agree	3 Undecided	2 Disagree	1 Strongly Disagree	Weighted Mean	Description
F3	I believe that AI tools make it easier for me to personalize learning experiences for each of my students.	3	2	3	0	0	4.00	Agree
F4	I believe that AI tools enhance the academic performance and overall learning outcomes of students with special needs.	1	4	1	2	0	3.50	Agree
F5	I believe that using AI tools makes me a more effective SPED teacher overall.	1	4	1	2	0	3.50	Agree
						Overall Weighted Mean	**3.88**	**Agree**

Rating Scale: 5 – Strongly Agree | 4 – Agree | 3 – Undecided | 2 – Disagree | 1 – Strongly Disagree

Scale range: 4.21–5.00 = Strongly Agree; 3.41–4.20 = Agree; 2.61–3.40 = Undecided; 1.81–2.60 = Disagree; 1.00–1.80 = Strongly Disagree

The results for Subscale F, which shifts from measuring observed practice to capturing teacher perceptions, present a markedly more positive picture than the preceding dimensions. With an overall weighted mean of 3.88, the eight special education teacher-participants collectively *agree* that AI tools are useful in their professional practice — a finding that stands in notable contrast to the consistently low levels of actual AI use documented across Dimensions A through E. This divergence between perceived usefulness and observed practice is among the most significant insights to emerge from the study.

The highest-rated item in the subscale was F2, which pertains to the belief that AI tools help save time on lesson preparation, documentation, and other administrative tasks, yielding a weighted mean of 4.25 — the only indicator to reach the *"Strongly Agree"* range. Three teachers strongly agreed and four agreed with this statement, with only one teacher remaining undecided and none expressing disagreement. This finding is particularly meaningful given the well-documented administrative burden carried by special education teachers, and it suggests that time-saving potential is the most immediately recognized and valued dimension of AI usefulness within this group.

F1, which concerns the belief that AI tools improve the quality of instruction provided to students with special needs, received a weighted mean of 4.13, described as *"Agree."* Three teachers strongly agreed and three agreed, while two remained undecided — a distribution that reflects broad but not universal confidence in AI's instructional value. F3, addressing the belief that AI makes it easier to personalize learning experiences for individual students, also fell in the *"Agree"* range with a weighted mean of 4.00. While three teachers strongly agreed, three others were undecided, suggesting that some uncertainty remains about AI's practical effectiveness as a personalization tool — perhaps reflecting limited firsthand experience with adaptive AI platforms, consistent with the low usage rates recorded in Dimension A.

The two lowest-rated indicators in the subscale were F4 and F5, both with weighted means of 3.50, described as *"Agree."* F4 pertains to the belief that AI tools enhance the academic performance and overall learning outcomes of students with special needs, while F5 concerns the belief that using AI makes the teacher a more effective special education teacher overall. In both cases, four teachers agreed, one was undecided, and two disagreed — the only instances of disagreement recorded across the entire subscale. This mild skepticism about AI's direct impact on student outcomes and overall teaching effectiveness is notable, as it suggests that while teachers value AI for its practical and time-saving functions, they are more cautious about attributing broader educational gains to its use.

Taken as a whole, the findings for Subscale F reveal a teaching group that is largely well-disposed toward AI in principle, particularly with respect to its capacity to reduce workload and support differentiated instruction. The absence of any "strongly disagree" responses and the concentration of ratings in the agree-to-strongly agree range indicate a genuinely favorable attitudinal foundation for AI adoption. However, the gap between these positive perceptions and the predominantly "Rarely" and "Never" usage patterns documented across earlier dimensions suggests that attitude alone is insufficient to drive integration. Structural barriers — including limited access to appropriate tools, insufficient professional development, and inadequate institutional support — likely account for the disconnect between what teachers believe AI can offer and what they are currently able to implement in practice. Bridging this gap will require not only continued reinforcement of AI's perceived value but also deliberate investment in the conditions that make consistent, meaningful AI use possible in special education classrooms.

Table 7. Subscale G: Perceived Ease of Use of AI Tools

n = 8 teacher-participants

Item	Indicator / Statement	5 Strongly Agree	4 Agree	3 Undecided	2 Disagree	1 Strongly Disagree	Weighted Mean	Description
G1	I find AI tools easy to learn and operate for use in my SPED classroom.	1	3	2	2	0	3.38	Undecided
G2	I feel confident navigating and troubleshooting AI tools when problems arise during classroom use.	1	1	5	1	0	3.25	Undecided
G3	I do not feel overwhelmed or anxious when I try new AI tools for teaching students with special needs.	1	1	5	1	0	3.25	Undecided
G4	I believe that the AI tools available to me are practical and straightforward enough for everyday classroom use.	2	1	4	1	0	3.50	Agree
G5	I can integrate AI tools into my daily teaching routine without significantly disrupting classroom activities.	1	2	2	3	0	3.13	Undecided
						Overall Weighted Mean	**3.30**	**Undecided**

Rating Scale: 5 – Strongly Agree | 4 – Agree | 3 – Undecided | 2 – Disagree | 1 – Strongly Disagree

Scale range: 4.21–5.00 = Strongly Agree; 3.41–4.20 = Agree; 2.61–3.40 = Undecided; 1.81–2.60 = Disagree; 1.00–1.80 = Strongly Disagree

The results for Subscale G, which measures teacher perceptions of how easy AI tools are to learn, navigate, and integrate into daily classroom practice, yield an overall weighted mean of 3.30, falling within the *"Undecided"* range of the five-point rating scale. This finding reveals a teaching group that is neither clearly confident nor clearly apprehensive about the ease of using AI tools — a position of ambivalence that may help explain the persistent gap between positive perceptions of AI's usefulness documented in Subscale F and the consistently low levels of actual AI integration observed across Dimensions A through E.

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The only indicator to surpass the *"Undecided"* threshold was G4, which concerns the belief that the AI tools available to teachers are practical and straightforward enough for everyday classroom use. With a weighted mean of 3.50, described as *"Agree,"* this item suggests that teachers are somewhat more confident about the usability of AI tools in the abstract — that is, when considering whether the tools themselves are well-designed — compared to their confidence in their own ability to use them. Two teachers strongly agreed, and one agreed, while four were undecided and one disagreed, reflecting a distribution skewed slightly toward the positive end but still anchored heavily in uncertainty.

G1, which addresses whether teachers find AI tools easy to learn and operate for use in their special education classroom, received a weighted mean of 3.38, just below the *"Agree"* threshold and described as *"Undecided."* One teacher strongly agreed, and three agreed, reflecting a meaningful minority with genuine confidence in their ability to learn AI tools. However, two teachers were undecided, and two disagreed, indicating that a comparable portion of the group finds AI tools less accessible than they would need to be for comfortable classroom adoption.

G2 and G3 produced identical weighted means of 3.25, both described as *"Undecided."* G2 concerns confidence in navigating and troubleshooting AI tools when problems arise during classroom use, while G3 pertains to whether teachers feel free from overwhelm or anxiety when trying new AI tools. In both cases, five out of eight teachers — a clear majority — responded with *"Undecided,"* suggesting widespread uncertainty rather than outright resistance. Only one teacher strongly agreed and one agreed for each item, while one disagreed in each case. The concentration of responses in the undecided category is particularly telling: it points to a group that has not yet had sufficient exposure to AI tools to form confident judgments about their own technical competence or emotional readiness.

The lowest-rated indicator was G5, which addresses whether teachers can integrate AI tools into their daily teaching routine without significantly disrupting classroom activities, yielding a weighted mean of 3.13, described as *"Undecided."* Notably, three out of eight teachers disagreed with this statement — the highest disagreement count across the entire subscale — signaling that concerns about classroom disruption and workflow interference represent a real and tangible barrier for a substantial portion of the group. This finding aligns with the broader literature on technology adoption, which consistently identifies perceived disruption to established routines as one of the primary deterrents to integration.

Taken together, the results for Subscale G paint a picture of a teaching group hovering at the edge of readiness — not actively resistant to AI tools, but not yet confident enough in their ease of use to adopt them consistently. The predominance of *"Undecided"* responses across four of the five indicators suggests that many of these teachers lack the hands-on experience needed to move from ambivalence to confidence. When read alongside the strong agreement with AI's perceived usefulness in Subscale F, the data point to a critical window of opportunity: these teachers are motivated by AI's potential but held back by uncertainty about their own technical readiness. Targeted, practical, and low-stakes professional development — structured around guided exploration of specific AI tools relevant to special education — would be the most effective intervention to shift perceptions of ease of use and, in turn, unlock more consistent and meaningful AI integration in practice.

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Table 8. Subscale H: Attitudes Toward AI Integration in Special Education

n = 8 teacher-participants

Item	Indicator / Statement	5 Strongly Agree	4 Agree	3 Undecided	2 Disagree	1 Strongly Disagree	Weighted Mean	Description
H1	I have a generally positive attitude toward using AI tools in special education classrooms.	3	3	1	1	0	4.00	Agree
H2	I am willing to invest time and effort to learn how to use new AI tools for the benefit of my SPED students.	3	3	2	0	0	4.13	Agree
H3	I believe that AI tools should be a regular part of every SPED teacher's professional toolkit.	3	3	2	0	0	4.13	Agree
H4	I feel motivated to explore AI tools that could specifically address the needs of students with disabilities in my class.	2	3	3	0	0	3.88	Agree
H5	I am open to receiving training or coaching on how to use AI tools more effectively in my SPED practice.	3	3	2	0	0	4.13	Agree
						Overall Weighted Mean	**4.05**	**Agree**

Rating Scale: 5 – Strongly Agree | 4 – Agree | 3 – Undecided | 2 – Disagree | 1 – Strongly Disagree

Scale range: 4.21–5.00 = Strongly Agree; 3.41–4.20 = Agree; 2.61–3.40 = Undecided; 1.81–2.60 = Disagree; 1.00–1.80 = Strongly Disagree

The results for Subscale H present the most consistently positive findings across the entire study, with an overall weighted mean of 4.05 falling solidly within the *"Agree"* range and approaching the threshold for *"Strongly Agree."* Across all five indicators, not a single teacher expressed disagreement or strong disagreement, and no indicator fell below the *"Agree"* category. These results reveal a teaching group that holds genuinely favorable attitudes toward AI integration in special education — a finding that, when considered alongside the low actual usage rates in Dimensions A through E, reinforces the interpretation that attitudinal readiness has already been established and that the primary barriers to AI adoption lie elsewhere.

Four of the five indicators — H2, H3, and H5, along with H1 — received weighted means clustered tightly between 4.00 and 4.13, all described as *"Agree."* H2, which measures willingness to invest time and effort to learn new AI tools for the benefit of students with special needs, and H3, which reflects the belief that AI tools should be a regular part of every special education teacher's professional toolkit, both received weighted means of 4.13. In each case, three teachers strongly agreed and three agreed, with only two remaining undecided and none expressing any disagreement. These figures are particularly meaningful: they suggest that the teacher-participants do not merely passively accept AI as a feature of modern education but actively endorse it as a professional obligation and express personal readiness to pursue it through learning.

H5, which addresses openness to receiving training or coaching on how to use AI tools more effectively in special education practice, also yielded a weighted mean of 4.13 — tied for the

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highest in the subscale — with the same distribution of three strongly agreeing, three agreeing, and two undecided. This is among the most actionable findings in the entire study, as it indicates that the overwhelming majority of teacher-participants are not only open to professional development in AI but actively welcome it. This disposition creates a strong and favorable foundation upon which school administrators and professional development providers can build structured, targeted AI training initiatives with reasonable confidence of teacher receptivity and engagement.

H1, which measures general positivity toward using AI tools in special education classrooms, received a weighted mean of 4.00, described as *"Agree."* While this remains within the agree range, it is the only indicator in the subscale where disagreement was recorded — one teacher expressed disagreement — and one teacher was undecided. These minor departures from the otherwise uniform pattern of positive responses signal that a small number of participants harbor residual reservations about AI in the special education context, possibly related to concerns about student privacy, the appropriateness of technology for students with complex needs, or prior negative experiences with AI tools.

The lowest-rated indicator in the subscale was H4, which pertains to motivation to explore AI tools that could specifically address the needs of students with disabilities, yielding a weighted mean of 3.88, described as *"Agree."* While still clearly positive, the relatively higher proportion of undecided responses — three out of eight teachers — compared to other items in the subscale suggests that motivation to actively seek out disability-specific AI applications is somewhat more tempered than the general attitude toward AI integration. This may reflect uncertainty about which AI tools are specifically designed for students with disabilities, or a sense that such exploration requires guidance and support that has not yet been provided.

Taken as a whole, the results for Subscale H offer the strongest evidence in the study that the eight special education teacher-participants are fundamentally well-disposed toward AI and are personally prepared to embrace it as part of their professional practice. The near-absence of disagreement, the high concentration of strongly agree and agree responses, and the explicit openness to training expressed in H5 together paint a picture of a workforce that is attitudinally ready for AI integration. This readiness, however, remains unrealized in daily practice — a gap that calls urgently for institutional investment in professional development, access to appropriate tools, and ongoing pedagogical support to transform these positive attitudes into meaningful, sustained, and student-centered AI use in special education classrooms.

Table 9. Subscale I: AI Literacy and Professional Readiness

n = 8 teacher-participants

Item	Indicator / Statement	5 Strongly Agree	4 Agree	3 Undecided	2 Disagree	1 Strongly Disagree	Weighted Mean	Description
I1	I can identify and select appropriate AI tools that match the specific learning needs and disability profiles of my students.	2	3	2	1	0	3.75	Agree
I2	I can integrate AI tools into my teaching strategies in ways that enhance — rather than replace — meaningful teacher-student interaction.	2	4	1	1	0	3.88	Agree
I3	I know how to evaluate whether AI-generated content is accurate and appropriate before using it with my SPED students.	1	5	1	1	0	3.75	Agree

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Item	Indicator / Statement	5 Strongly Agree	4 Agree	3 Undecided	2 Disagree	1 Strongly Disagree	Weighted Mean	Description
I4	I am aware of ethical concerns related to AI use in special education, such as data privacy, algorithmic bias, and over-dependence on technology.	2	5	1	0	0	4.12	Agree
I5	I feel professionally prepared to use AI tools responsibly and effectively in supporting learners with disabilities.	1	4	2	1	0	3.63	Agree
						Overall Weighted Mean	**3.83**	**Agree**

Rating Scale: 5 – Strongly Agree | 4 – Agree | 3 – Undecided | 2 – Disagree | 1 – Strongly Disagree

Scale range: 4.21–5.00 = Strongly Agree; 3.41–4.20 = Agree; 2.61–3.40 = Undecided; 1.81–2.60 = Disagree; 1.00–1.80 = Strongly Disagree

The results for Subscale I, which examines teachers' self-assessed AI literacy and sense of professional readiness to use AI responsibly and effectively in special education, yield an overall weighted mean of 3.83, falling within the *"Agree"* range of the five-point rating scale. This finding indicates that the eight teacher-participants hold a moderately confident view of their own AI literacy — perceiving themselves as generally capable of identifying, integrating, and critically evaluating AI tools in the context of their practice. Notably, no teacher recorded a *"Strongly Disagree"* response across any of the five indicators, and instances of disagreement were limited and isolated, pointing to an overall sense of professional readiness that, while not uniformly strong, is meaningfully positive.

The highest-rated indicator in the subscale was I4, which concerns awareness of the ethical considerations related to AI use in special education — including data privacy, algorithmic bias, and the risk of over-dependence on technology — yielding a weighted mean of 4.12, the closest to the *"Strongly Agree"* threshold in the entire subscale. Two teachers strongly agreed and five agreed, with only one remaining undecided and none disagreeing. This near-unanimous recognition of AI's ethical dimensions is an encouraging finding, as it suggests that the teacher-participants are not approaching AI adoption uncritically. Rather, they enter the conversation about AI integration with an awareness of its risks and responsibilities — a foundation that is essential for safe, equitable, and student-centered AI use.

I2, which addresses the ability to integrate AI tools into teaching strategies in ways that enhance rather than replace meaningful teacher-student interaction, received a weighted mean of 3.88, described as *"Agree."* Two teachers strongly agreed and four agreed, while one was undecided and one disagreed. This result reflects a broadly held conviction that AI can be used as an augmentative rather than substitutive force in the classroom — an important disposition for special education teachers, whose work depends fundamentally on the quality of human relationships and individualized support.

I1 and I3 both received weighted means of 3.75, described as *"Agree."* I1 pertains to the ability to identify and select AI tools that match the specific learning needs and disability profiles of individual students — a complex and highly contextualized skill that requires both knowledge of available tools and a deep understanding of each student's profile. The presence of two undecided responses and one disagreement suggests that while most teachers feel reasonably capable in this area, a meaningful minority harbor reservations about their ability to make informed, student-specific tool selections. I3, which concerns knowledge of how to evaluate whether AI-generated content is accurate and appropriate before using it with students with special needs,

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similarly showed broad agreement with five teachers agreeing and one strongly agreeing, though one teacher was undecided and one disagreed — a reminder that critical evaluation of AI-generated content remains an uneven competency within the group.

The lowest-rated indicator was I5, which measures whether teachers feel professionally prepared to use AI tools responsibly and effectively in supporting learners with disabilities, yielding a weighted mean of 3.63, described as *"Agree."* While one teacher strongly agreed and four agreed, two were undecided and one disagreed — the highest combined rate of non-agreement in the subscale. This finding is particularly significant because I5 represents the most holistic and integrative dimension of AI literacy, drawing together all of the knowledge, skills, and dispositions measured by the preceding items into an overall sense of professional readiness. The relatively modest weighted mean, compared to items addressing specific competencies, suggests that even among teachers who feel knowledgeable about AI tools and their ethical dimensions, translating that knowledge into a consolidated sense of professional preparedness remains a work in progress.

Taken together, the results for Subscale I present a picture of a teaching group that has developed a meaningful foundational level of AI literacy — particularly in the areas of ethical awareness and pedagogical intentionality — but that has not yet fully consolidated this literacy into a robust sense of comprehensive professional readiness. The agreement-level responses across all five indicators, combined with the absence of strong disagreement, suggest that targeted and practical professional development — focused specifically on matching AI tools to disability profiles, critically evaluating AI-generated content, and building confidence in responsible AI use — would be well-received by this group and could efficiently close the gap between current competency and full professional preparedness.

Table 10. Subscale J: Infrastructure and Resource Barriers

n = 8 teacher-participants

Item	Indicator / Statement	5 Strongly Agree	4 Agree	3 Undecided	2 Disagree	1 Strongly Disagree	Weighted Mean	Description
J1	The lack of a reliable internet connection at school is a major barrier to my use of AI tools in the classroom.	3	4	0	1	0	4.13	Agree
J2	The unavailability of appropriate digital devices (e.g., tablets, computers) at school limits my ability to use AI tools with students.	2	5	0	1	0	4.00	Agree
J3	Limited school funding for software subscriptions or AI tool licenses prevents me from accessing useful AI platforms.	2	4	2	0	0	4.00	Agree
J4	Frequent technical problems (e.g., system crashes, poor connectivity) discourage me from using AI tools regularly in my lessons.	2	4	1	1	0	3.88	Agree

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Item	Indicator / Statement	5 Strongly Agree	4 Agree	3 Undecided	2 Disagree	1 Strongly Disagree	Weighted Mean	Description
J5	The AI tools that are available to me are not designed for students with special needs, limiting their practical usefulness in my classroom.	0	4	2	2	0	3.25	Undecided
						Overall Weighted Mean	**3.85**	**Agree**

Rating Scale: 5 – Strongly Agree | 4 – Agree | 3 – Undecided | 2 – Disagree | 1 – Strongly Disagree

Scale range: 4.21–5.00 = Strongly Agree; 3.41–4.20 = Agree; 2.61–3.40 = Undecided; 1.81–2.60 = Disagree; 1.00–1.80 = Strongly Disagree

The results for Subscale J, which examines the extent to which teachers perceive infrastructure and resource-related factors as barriers to AI integration in their classrooms, yield an overall weighted mean of 3.85, falling within the *"Agree"* range of the five-point rating scale. This finding indicates that the eight special education teacher-participants broadly agree that structural and material constraints — including inadequate internet connectivity, limited device availability, insufficient funding, technical instability, and the poor alignment of available AI tools with special education needs — significantly impede their ability to use AI in their classrooms. The results of this subscale offer a critical explanatory lens for the consistently low levels of actual AI use documented across Dimensions A through E, anchoring the practice gap not in attitude or awareness, but in concrete systemic deficiencies.

The highest-rated indicator was J1, which concerns the perceived barrier posed by unreliable internet connectivity, yielding a weighted mean of 4.13, described as *"Agree"* and approaching the *"Strongly Agree"* threshold. Three teachers strongly agreed and four agreed that the lack of a reliable internet connection at school is a major barrier to AI use, with only one teacher disagreeing. This near-consensus identification of internet connectivity as a primary barrier is a particularly striking finding, as it points to a fundamental infrastructure deficit that precedes any question of teacher competence or motivation. Without stable connectivity, even the most AI-literate and well-disposed teacher cannot meaningfully integrate online-dependent AI tools into daily instruction.

J2, which addresses the limiting effect of insufficient digital devices such as tablets or computers, received a weighted mean of 4.00, also described as *"Agree."* Two teachers strongly agreed and five agreed that device unavailability restricts their ability to use AI tools with students, while only one disagreed. Together with J1, this finding establishes a picture of classrooms where the foundational hardware and connectivity requirements for AI use are inconsistently or inadequately met — a systemic barrier that lies entirely beyond the control of individual teachers and demands institutional-level response.

J3, concerning the barrier of limited school funding for software subscriptions and AI tool licenses, received a weighted mean of 4.00, described as *"Agree,"* with two teachers strongly agreeing, four agreeing, and two undecideds. The absence of any disagreement on this item is notable: not a single teacher disputed that financial constraints on software access represent a meaningful obstacle to AI integration. This suggests that cost is a universally acknowledged — if unevenly experienced — barrier within this group, and that expanding AI adoption will require dedicated budget allocations at the school or district level to make quality AI platforms accessible to special education teachers.

J4, which addresses the discouraging effect of frequent technical problems such as system crashes and poor connectivity on regular AI use, yielded a weighted mean of 3.88, described as *"Agree."* Two teachers strongly agreed, four agreed, one was undecided, and one disagreed — a distribution that closely parallels the other infrastructure-related items and reinforces the pattern of broad but not unanimous agreement on the role of technical unreliability as a deterrent to consistent AI integration.

The lowest-rated indicator was J5, which concerns the perception that the AI tools available to teachers are not designed for students with special needs, limiting their practical classroom usefulness, yielding a weighted mean of 3.25, described as *"Undecided."* Four teachers agreed with this statement, two were undecided, and two disagreed — a notably more mixed distribution compared to the other items in the subscale. This divergence from the otherwise consistent pattern of agreement is meaningful: it suggests that teachers are less uniformly convinced that the fundamental design inadequacy of available AI tools is a barrier, perhaps because some have found useful applications within general-purpose AI platforms, or because they have limited experience with specialized assistive AI tools to make a definitive comparison.

Taken as a whole, the results for Subscale J provide perhaps the most actionable findings of the study. The broad agreement across four of the five indicators establishes with considerable clarity that infrastructure deficits — not teacher reluctance, not lack of awareness, and not negative attitudes — are the primary structural barriers to AI integration in these special education classrooms. The convergence of connectivity issues, device shortages, funding constraints, and technical unreliability into a coherent picture of systemic underinvestment calls urgently for policy-level intervention. Meaningful and sustained AI integration in special education will remain aspirational rather than operational until schools ensure that teachers and students have reliable access to the hardware, connectivity, and software resources that make such integration possible.

Table 11. Subscale K: Training and Professional Development Barriers

n = 8 teacher-participants

Item	Indicator / Statement	5 Strongly Agree	4 Agree	3 Undecided	2 Disagree	1 Strongly Disagree	Weighted Mean	Description
K1	I have not received sufficient training on how to use AI tools specifically for special education instruction.	0	7	0	1	0	3.75	Agree
K2	The technology or AI training I have attended was too general and not applicable to my specific SPED teaching context.	0	8	0	0	0	4.00	Agree
K3	There is a lack of ongoing mentoring or coaching support to help me develop my AI skills in the classroom.	0	8	0	0	0	4.00	Agree
K4	I do not have enough time within my teaching schedule to independently explore and learn new AI tools.	0	7	0	1	0	3.75	Agree
K5	My school or division does not regularly provide SPED-specific training or professional development on AI use.	0	7	1	0	0	3.88	Agree

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Item	Indicator / Statement	5 Strongly Agree	4 Agree	3 Undecided	2 Disagree	1 Strongly Disagree	Weighted Mean	Description
						Overall Weighted Mean	3.88	Agree

Rating Scale: 5 – Strongly Agree | 4 – Agree | 3 – Undecided | 2 – Disagree | 1 – Strongly Disagree

Scale range: 4.21–5.00 = Strongly Agree; 3.41–4.20 = Agree; 2.61–3.40 = Undecided; 1.81–2.60 = Disagree; 1.00–1.80 = Strongly Disagree

The results for Subscale K, which examines the degree to which the absence of adequate training and professional development constitutes a barrier to AI integration in special education, yield an overall weighted mean of 3.88, falling within the *"Agree"* range of the five-point rating scale. This finding is among the most unambiguous in the entire study: the eight teacher-participants collectively and consistently agree that insufficient, generic, and unstained professional development on AI use in special education is a significant and real barrier to their practice. The response distributions across the five indicators are notably concentrated — with the overwhelming majority of teachers agreeing across every item and no teacher expressing strong disagreement in any — making Subscale K the most internally consistent set of findings in the study.

The most striking results are found in K2 and K3, both of which received perfect agreement distributions and weighted means of 4.00, described as *"Agree."* K2 concerns the perception that AI or technology training attended by teachers has been too general and insufficiently applicable to the specific context of special education teaching. All eight teachers agreed with this statement — a unanimous verdict that the professional development they have received has failed to address the particularities of their role. This finding carries significant implications for how AI training is designed and delivered: it suggests that generic, one-size-fits-all technology workshops — however competently delivered — are perceived as largely irrelevant to the daily realities of teaching students with diverse and complex learning needs. K3, which addresses the absence of ongoing mentoring or coaching support to help teachers develop their AI skills in the classroom, was equally unanimous, with all eight teachers agreeing that such support is lacking. The consensus here reinforces the well-established finding from professional development research that one-off training events, without sustained follow-up and contextualized support, rarely translate into lasting changes in practice.

K1, which measures whether teachers feel they have received sufficient training on how to use AI tools specifically for special education instruction, received a weighted mean of 3.75, described as *"Agree,"* with seven teachers agreeing and only one disagreeing. This near-unanimous agreement that training has been inadequate provides a direct and specific explanation for the persistent pattern of low AI use observed across Dimensions A through E. Teachers who have not been trained to use AI tools in ways that are meaningful and relevant to their students cannot reasonably be expected to integrate those tools confidently or consistently into their instruction.

K4, which concerns whether teachers have sufficient time within their teaching schedules to independently explore and learn new AI tools, also yielded a weighted mean of 3.75, described as *"Agree,"* with seven agreeing and one disagreeing. This finding highlights the intersection of time poverty and professional development inadequacy as compounding barriers: not only do teachers lack targeted formal training, they also lack the unstructured time that would allow them to self-direct their own AI learning. In a professional context already characterized by heavy

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administrative and instructional demands, the expectation that teachers will independently develop AI competency in their spare time is both unrealistic and unsupported by this evidence.

K5, which addresses whether the school or division regularly provides SPED-specific professional development on AI use, received a weighted mean of 3.88, with seven teachers agreeing and one undecided. The absence of any disagreement here signals that the lack of institutionally provided, discipline-specific AI training is a broadly shared experience across the group rather than an isolated perception.

Taken together, the results for Subscale K constitute a coherent and compelling case that the training and professional development landscape surrounding AI in special education is fundamentally inadequate. The convergence of agreement across all five indicators — covering the insufficiency of training received, the generic nature of what has been provided, the absence of ongoing coaching, the shortage of independent learning time, and the institutional failure to offer SPED-specific development — points to a systemic failure that cannot be addressed through individual teacher initiative alone. These findings call for a wholesale rethinking of how professional development in AI is designed, delivered, and sustained for special education teachers: it must be context-specific, practically oriented, continuously supported, and institutionally resourced if it is to produce the kind of confident, competent, and consistent AI integration that the study's teachers have demonstrated they are both motivated and willing to pursue.

Table 12. Subscale L: Ethical Concerns and Perceived Risks

n = 8 teacher-participants

Item	Indicator / Statement	5 Strongly Agree	4 Agree	3 Undecided	2 Disagree	1 Strongly Disagree	Weighted Mean	Description
L1	I am concerned about the privacy and security of my students' personal and educational data when using AI tools.	2	5	1	0	0	4.13	Agree
L2	I am concerned that AI tools may produce biased or inaccurate outputs that could negatively affect students with disabilities.	2	5	1	0	0	4.13	Agree
L3	I worry that over-reliance on AI tools may reduce the quality of human interaction and relationship-building with my students.	3	5	0	0	0	4.38	Strongly Agree
L4	I am uncertain about the ethical guidelines for using AI-generated content in my students' IEPs and educational records.	2	5	1	0	0	4.13	Agree
L5	I feel that current policies on AI use in Philippine SPED classrooms are insufficient or unclear to guide responsible practice.	2	5	1	0	0	4.13	Agree
						Overall Weighted Mean	**4.17**	**Agree**

Rating Scale: 5 – Strongly Agree | 4 – Agree | 3 – Undecided | 2 – Disagree | 1 – Strongly Disagree

Scale range: 4.21–5.00 = Strongly Agree; 3.41–4.20 = Agree; 2.61–3.40 = Undecided; 1.81–2.60 = Disagree; 1.00–1.80 = Strongly Disagree

The results for Subscale L, which examines the ethical concerns and perceived risks that teachers associate with AI use in special education, yield an overall weighted mean of 4.17, placing the findings just below the *"Strongly Agree"* threshold and firmly within the upper end of the *"Agree"* range. This is the highest overall weighted mean recorded across all perceptual subscales in the study, and it reflects a teaching group that is deeply and broadly attuned to the ethical dimensions of AI integration. Notably, not a single teacher expressed disagreement or strong disagreement on any of the five indicators, and instances of undecided responses were limited to only a few items — a pattern of convergence that underscores just how seriously these teachers regard the ethical stakes of AI use in their classrooms.

The most strongly endorsed indicator in the subscale was L3, which concerns the worry that over-reliance on AI tools may diminish the quality of human interaction and relationship-building with students, yielding a weighted mean of 4.38 — the only item in the subscale to reach the *"Strongly Agree"* range. Three teachers strongly agreed, and five agreed, with no teacher expressing undecidedness or disagreement. This unanimity is both striking and meaningful. For special education teachers, the teacher-student relationship is not merely a pedagogical preference but a foundational element of effective practice — particularly for students whose disability profiles may make them especially dependent on consistent, trusting, and attuned human connection. The unanimous expression of concern about AI-induced relational erosion speaks to a deeply held professional value that any approach to AI integration in special education must honor and protect.

Four indicators — L1, L2, L4, and L5 — each received identical weighted means of 4.13, described as *"Agree,"* with two teachers strongly agreeing, five agreeing, and one undecided in each case, and no disagreement recorded. L1, which addresses concern about the privacy and security of students' personal and educational data when AI tools are used, reflects a near-universal awareness of data protection as a critical issue — one that is especially sensitive in the context of special education, where student records contain highly sensitive information about diagnoses, behavioral histories, and individualized support plans. L2, which pertains to concern that AI tools may produce biased or inaccurate outputs that could negatively affect students with disabilities, further reflects a sophisticated understanding of AI limitations. Teachers are not merely concerned about technical errors in general; they are specifically attuned to the heightened risk that algorithmic bias or inaccuracy poses for a population already vulnerable to misclassification and inadequate support.

L4, which measures uncertainty about the ethical guidelines for using AI-generated content in students' IEPs and educational records, reveals a significant area of professional ambiguity. Seven teachers agreed that such uncertainty exists — a finding that is consistent with the broader global reality that policy frameworks governing AI use in education, and particularly in special education documentation, have not kept pace with the rapid expansion of AI capabilities and classroom adoption. L5, which addresses the perceived insufficiency or lack of clarity in current Philippine policies on AI use in special education classrooms, reinforces this concern at the institutional level. The near-unanimous agreement that existing policy guidance is inadequate sends a clear message to educational authorities: teachers are not simply uninformed — they are actively aware of the ethical terrain, and they are looking to policy and governance frameworks to provide the guidance and protection they need to navigate it responsibly.

Taken as a whole, the results for Subscale L present a portrait of a teaching group that approaches AI not with uncritical enthusiasm but with thoughtful, principled caution. The consistently high levels of agreement across all five indicators — with no disagreement whatsoever and ethical concerns ranging from data privacy to relational erosion to policy inadequacy — establish that these teachers possess a mature and nuanced ethical consciousness regarding AI's risks. Rather than constituting a barrier to adoption, this ethical awareness should be understood as a

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professional asset: teachers who are attentive to the risks of AI are better positioned to use it responsibly, to advocate for appropriate safeguards, and to model critical AI citizenship for their students. What is needed is not the suppression of these concerns but their constructive channeling through clear institutional policy, robust data governance frameworks, and professional development that specifically addresses the ethical dimensions of AI use in special education practice.

Summary Of Findings

Overview

This study examined the integration of artificial intelligence tools among eight special education teacher-participants across five instructional dimensions and seven perceptual subscales. The findings collectively reveal a teaching group that is attitudinally prepared and ethically conscious regarding AI, yet remains at an early and inconsistent stage of actual AI integration in practice — a gap driven primarily by systemic infrastructure deficits, inadequate professional development, and limited institutional support rather than by resistance or indifference on the part of the teachers themselves.

Part I: AI Integration in Practice (Dimensions A–E)

The five instructional dimensions measured the frequency with which teachers actually use AI tools across key areas of special education practice. Across all five dimensions, the overall pattern of responses clustered in the lower ranges of the rating scale, with results ranging from *"Sometimes"* at the highest end to *"Never"* at the lowest.

Dimension A, which assessed the use of AI for personalized and adaptive instruction, produced the highest overall weighted mean among the practice dimensions at 2.81, described as *"Sometimes."* Teachers showed the most engagement with AI for content creation — specifically, using generative AI tools such as ChatGPT or Gemini to design learning materials and personalized activities — while the use of AI-based analytics and progress dashboards to inform instructional pacing was the least practiced area, falling in the *"Rarely"* range with a weighted mean of 2.38. This pattern suggests that teachers gravitate toward AI as a preparation tool rather than a real-time instructional or data management system.

Dimension B, which examined the use of AI-powered assistive technology and accessibility tools, yielded an overall weighted mean of 2.23, described as *"Rarely."* Five of the six indicators fell in the *"Rarely"* category, with tools for supporting students with sensory impairments — including AI-powered image recognition for students with visual impairment and real-time captioning for students with hearing impairment — receiving the lowest ratings, each at 2.00. The only indicator approaching a higher range was the use of AI to produce accessible versions of learning materials, at 2.75 (*"Sometimes"*), consistent with the content-creation pattern observed in Dimension A. These findings are particularly concerning given that assistive technology is a foundational element of equitable special education practice.

Dimension C, which covered AI use in assessment and progress monitoring, produced the lowest overall weighted mean among all practice dimensions at 1.60, falling in the *"Never"* range. Five of the six indicators were rated *"Never,"* with the use of AI-based portfolio systems for documenting student growth and AI tools for generating parent-facing progress reports each receiving the

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lowest scores in the dimension at 1.25. Only the use of AI-powered diagnostic tools to identify learning gaps reached the *"Rarely"* range at 2.38. These findings signal a near-total absence of data-driven AI practice in an area where ongoing monitoring and documentation are both professionally and legally critical for students with exceptionalities.

Dimension D, which addressed AI use for behavior and emotional support, yielded an overall weighted mean of 1.85, described as *"Rarely"* and situated at the lower boundary of that range. While the use of emotion recognition and social-emotional learning platforms received the highest rating in the dimension at 2.25, the majority of indicators — including AI tools for PBIS support, behavior data analysis, and incident documentation — fell in the *"Never"* range. This finding is especially significant given that behavior management and emotional regulation are among the most demanding and time-intensive aspects of special education practice.

Dimension E, which examined AI use in IEP development and documentation, was the strongest-performing practice dimension, with an overall weighted mean of 2.73, described as *"Sometimes."* The indicators relating to IEP goal drafting and generating AI-assisted progress report narratives received the highest ratings in the dimension at 3.25 and 3.13, respectively, suggesting that a meaningful subgroup of teachers — particularly participants 3 and 7 across multiple items — have begun to integrate generative AI into the most writing-intensive aspects of IEP work. However, the organizational and communication dimensions of IEP documentation — including record management, parent communication, and quality alignment checking — remained in the *"Rarely"* range, indicating that AI use in this area is narrow in scope and not yet systemic.

Part II: Teacher Perceptions, Attitudes, and Barriers (Subscales F–L)

The seven perceptual subscales shifted from measuring practice to examining how teachers think and feel about AI — its usefulness, ease of use, their attitudes toward it, their sense of professional readiness, and the barriers they perceive as standing in the way of greater integration. Across all seven subscales, the pattern of responses was substantially more positive than the practice dimensions, with overall weighted means ranging from 3.30 to 4.17 — all within the *"Agree"* range, and two approaching or reaching *"Strongly Agree."*

Subscale F, which measured perceived usefulness of AI in special education, produced an overall weighted mean of 3.88, described as *"Agree."* The strongest endorsement was for AI's time-saving potential in lesson preparation and documentation at 4.25 (*"Strongly Agree"*), while confidence in AI's direct impact on student outcomes was more moderate. Critically, no teacher expressed strong disagreement on any item, establishing a broadly favorable view of AI's practical value.

Subscale G, which assessed perceived ease of use, yielded the lowest overall weighted mean among the perceptual subscales at 3.30, described as *"Undecided."* Four of the five indicators fell in the undecided range, with the majority of teachers unable to confidently affirm that AI tools are easy to learn, navigate, or integrate without disrupting classroom routines. The most commonly cited concern was about workflow disruption, where three teachers actively disagreed that AI tools could be integrated smoothly. This subscale provides the clearest evidence that uncertainty about technical competence — rather than negative attitudes — is a significant internal barrier to AI adoption.

Subscale H, which examined attitudes toward AI integration, produced an overall weighted mean of 4.05, described as *"Agree"* — the highest among the attitudinal subscales. Not a single teacher expressed disagreement or strong disagreement on any indicator. Willingness to invest in

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learning AI tools, belief that AI should be part of every special education teacher's professional toolkit, and openness to training and coaching all received weighted means of 4.13. These results establish that attitudinal readiness for AI integration is already well developed within this group and represents a strength upon which professional development initiatives can build.

Subscale I, which measured AI literacy and professional readiness, yielded an overall weighted mean of 3.83, described as *"Agree."* Awareness of ethical concerns such as data privacy and algorithmic bias was the strongest-rated indicator at 4.12, while overall felt preparedness to use AI responsibly and effectively received the most modest rating in the subscale at 3.63. This slight gap between ethical awareness and holistic professional readiness points to a workforce that understands the terrain but has not yet received the practical preparation needed to navigate it with full confidence.

Subscale J, which assessed infrastructure and resource barriers, produced an overall weighted mean of 3.85, described as *"Agree."* Near-unanimous agreement was recorded across indicators concerning unreliable internet connectivity, insufficient device availability, limited funding for AI tool licenses, and frequent technical problems — all of which were identified as significant structural barriers to AI use. The only indicator to fall below the *"Agree"* range was the perception that available AI tools are not designed for students with special needs, which received a more mixed and undecided distribution, suggesting that teachers' views on tool design adequacy are less settled than their views on hardware and connectivity deficits.

Subscale K, which examined training and professional development barriers, yielded an overall weighted mean of 3.88, described as *"Agree."* Two indicators — the perception that AI training received has been too general and inapplicable to special education contexts, and the absence of ongoing mentoring or coaching support — received unanimous agreement from all eight teachers, each with a weighted mean of 4.00. These findings establish with unmistakable clarity that the professional development landscape for AI in special education is systemically inadequate, characterized by generic one-off training that fails to address the specific demands of the role and is unsupported by sustained mentoring or follow-up.

Subscale L, which examined ethical concerns and perceived risks, produced the highest overall weighted mean among all subscales at 4.17, described as *"Agree"* and approaching *"Strongly Agree."* The concern that over-reliance on AI may erode the quality of human interaction and relationship-building with students was the single most strongly endorsed statement in the entire study, receiving unanimous agreement from all eight teachers and a weighted mean of 4.38 (*"Strongly Agree"*). Concerns about data privacy, algorithmic bias, ethical ambiguity in IEP documentation, and the insufficiency of Philippine policy guidance for AI use in special education classrooms were each affirmed by virtually every participant, with no disagreement recorded across the entire subscale.

Synthesis

Taken together, the findings of this study converge on a coherent and compelling narrative. The eight special education teacher-participants are not resistant to AI — they believe in its usefulness, hold positive attitudes toward its integration, possess a meaningful foundation of AI literacy, and are openly willing to receive training. What they lack is not motivation or awareness, but the systemic conditions that would allow their positive dispositions to translate into sustained, confident, and student-centered practice. Unreliable internet connectivity, insufficient

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devices, inadequate funding, generic and unsustained professional development, and the absence of clear policy guidance collectively constitute a set of structural barriers that no individual teacher can overcome through personal initiative alone. The dramatic gap between the consistently low usage ratings in Dimensions A through E and the consistently positive perceptions in Subscales F through L is the defining finding of this study — and it calls urgently for institutional, policy-level, and professional development responses that are as specific, sustained, and contextually grounded as the needs of the students these teachers serve.

Conclusion

The findings of this study lead to the following conclusions regarding the integration of artificial intelligence tools among special education teachers and the attitudes, perceptions, and barriers that shape that integration.

First, AI integration in special education practice remains at an early, limited, and largely inconsistent stage. Across all five instructional dimensions — personalized and adaptive instruction, assistive technology and accessibility, assessment and progress monitoring, behavior and emotional support, and IEP development and documentation — the teacher-participants reported using AI tools infrequently, with overall weighted means ranging from *"Never"* to *"Sometimes."* The most pronounced gaps were observed in assessment and progress monitoring and behavior support, where AI use was virtually absent, while the relatively stronger performance in IEP development suggests that generative AI for writing and documentation tasks has gained a modest but meaningful foothold among a small number of teachers. Overall, the data confirm that meaningful, systematic, and student-centered AI integration has not yet been achieved within this group.

Second, when AI is used, it tends to be concentrated in content creation and material preparation tasks rather than in the more complex, data-driven, and student-responsive functions that AI is uniquely positioned to support. Across multiple dimensions, the indicators with the highest ratings consistently involved using AI to generate, draft, or modify instructional materials — a pattern that reflects the accessibility and familiarity of general-purpose generative AI tools such as ChatGPT and Gemini. In contrast, indicators involving real-time adaptive learning platforms, AI-based progress analytics, behavior data analysis, and assistive technology for students with sensory disabilities were among the lowest-rated items in the study. This imbalance suggests that AI adoption in these classrooms is currently shaped more by convenience and tool familiarity than by a deliberate, needs-based approach to leveraging AI's full potential for students with exceptionalities.

Third, a significant and theoretically important gap exists between teachers' positive perceptions of AI and their actual practice. Across the perceptual subscales, teachers expressed broad agreement with AI's usefulness, held favorable attitudes toward its integration, demonstrated meaningful ethical awareness, and reported a reasonable foundation of AI literacy — yet these positive dispositions have not translated into consistent or comprehensive AI use in practice. This perception-practice gap is the central finding of the study and indicates that attitudinal readiness, while necessary, is not sufficient to drive integration. The barriers to practice lie not within the teachers themselves but in the structural and institutional conditions surrounding them.

Fourth, infrastructure deficits constitute a primary and largely unaddressed systemic barrier to AI integration. The near-unanimous agreement among all eight teacher-participants that

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unreliable internet connectivity, insufficient digital devices, limited funding for AI software, and frequent technical problems impede their use of AI in the classroom points to a foundational technology access problem that precedes all questions of competence, confidence, or motivation. Until schools ensure consistent and reliable access to the hardware, connectivity, and software resources necessary for AI use, integration will remain structurally impossible for many teachers regardless of their willingness or preparation.

Fifth, the professional development available to special education teachers for AI use is systemically inadequate, insufficiently contextualized, and unsupported by ongoing mentoring or coaching. The unanimous finding that training has been too general and inapplicable to the specific demands of special education teaching, combined with the equally unanimous identification of a lack of ongoing coaching support, establishes that the current professional development landscape is unable to produce the contextualized, sustained, and practically grounded competencies that meaningful AI integration requires. Time poverty further compounds this barrier, as teachers reported insufficient time within their teaching schedules to independently explore and learn new AI tools.

Sixth, special education teachers demonstrate a high level of ethical consciousness regarding AI that reflects genuine professional maturity and critical awareness. The near-unanimous and strongly felt concerns about data privacy, algorithmic bias, the risk of relational erosion between teachers and students, ethical ambiguity in AI-assisted IEP documentation, and the inadequacy of current Philippine policy frameworks for guiding responsible AI use in special education classrooms collectively establish that these teachers approach AI not uncritically but with principled caution. This ethical awareness is a professional strength that should be recognized, cultivated, and channeled into the development of contextually appropriate, rights-respecting, and student-centered approaches to AI integration — rather than treated as a barrier to adoption.

Seventh, the teacher-participants' openness to training, their willingness to invest in learning, and their expressed belief that AI should be a regular part of every special education teacher's professional toolkit represent a powerful and underutilized foundation for institutional action. The study's findings make clear that the conditions for transformative AI integration in these special education classrooms are not absent — they are simply unrealized. The teachers are ready; what is needed now is for schools, divisions, and policymakers to meet that readiness with the resources, guidance, and sustained support that responsible and effective AI integration demands.

Recommendation

The findings and conclusions of this study give rise to the following recommendations directed at various stakeholders responsible for the quality, equity, and advancement of special education practice in the Philippine context.

For School Administrators and Division Superintendents

School administrators and division superintendents are strongly urged to prioritize the resolution of foundational infrastructure deficits as an immediate and non-negotiable prerequisite to any meaningful AI integration initiative. The findings of this study make unequivocally clear that unreliable internet connectivity, insufficient digital devices, and limited funding for AI software licenses are the most concrete and consequential barriers standing between special education teachers and the AI tools they are willing and motivated to use. Investment in stable broadband connectivity, the procurement of adequate classroom devices, and the allocation of dedicated budget lines for AI platform subscriptions in special education settings should be treated not as aspirational goals but as baseline institutional responsibilities. Without this foundational investment, all other efforts to advance AI integration — however well-designed — will be structurally undermined before they begin.

Administrators are further recommended to establish school-level AI integration committees or technology support teams that include special education teachers as active participants. These structures should be tasked with identifying the specific AI tools most relevant to the disability profiles served in each school, troubleshooting technical barriers in real time, and creating feedback channels through which teachers can communicate their evolving needs as their AI use develops. Embedding special education teachers in institutional decision-making about technology ensures that the tools procured and the policies developed reflect the realities of the classroom rather than the assumptions of those removed from it.

For Curriculum and Instructional Supervisors

Curriculum and instructional supervisors are strongly recommended to design, fund, and implement a structured, multi-tiered, and SPED-specific professional development program on AI integration that is sustained over time rather than delivered as a one-off event. The unanimous finding that existing technology training has been too general and insufficiently applicable to the special education context demands a fundamental redesign of how AI professional development is conceptualized and delivered. Effective professional development in this area must be contextually grounded — organized around the specific disability profiles, instructional strategies, and documentation requirements that define special education practice — and must move beyond introductory awareness sessions to include hands-on guided exploration of tools, classroom-based application tasks, and structured opportunities for teachers to share and reflect on their implementation experiences.

Critically, professional development must be accompanied by ongoing mentoring and coaching support. The unanimous identification of the absence of sustained mentoring as a barrier confirms that isolated training events, however high in quality, are insufficient to produce lasting changes in practice. Supervisors should establish mentoring systems in which AI-proficient educators — whether peer mentors, instructional coaches, or external specialists — provide regular, classroom-embedded support to special education teachers as they develop their AI competencies. This support should be differentiated to meet teachers at their current level of integration, with pathways for both novice and more advanced adopters to continue growing.

Supervisors are also recommended to formally address the ethical dimensions of AI use as a core component of all professional development offerings for special education teachers. Given the high level of ethical concern expressed by participants regarding data privacy, algorithmic bias, relational erosion, and the ethical use of AI-generated content in IEPs, professional development must not limit itself to the technical aspects of AI tools but must equally equip teachers with the frameworks, institutional guidance, and reflective practices needed to navigate these concerns responsibly and with confidence.

For Special Education Teachers

Special education teachers are encouraged to begin expanding their AI integration practice incrementally and strategically, starting from areas of existing strength and gradually extending into less familiar domains. The findings suggest that generative AI tools for content creation and IEP goal drafting represent accessible and already partially adopted entry points — a foundation from which teachers can progressively develop their capacity to use AI for more complex functions such as data-driven progress monitoring, behavior analysis, and assistive technology support. Rather than waiting for comprehensive institutional support to be fully in place, teachers are encouraged to take ownership of their professional learning by exploring free or low-cost AI tools relevant to their students' disability profiles, engaging in collegial knowledge-sharing with fellow special education teachers, and advocating clearly and specifically to their supervisors and administrators for the resources and training they need.

Teachers are further encouraged to approach AI as a complement to — rather than a replacement for — the relational and humanistic core of special education practice. The unanimous concern expressed about the risk of relational erosion through AI over-reliance reflects a sound professional instinct that should continue to guide how teachers make decisions about when, how, and to what extent AI tools are appropriate for individual students. Maintaining this critical, student-centered orientation while developing greater technical competency will enable teachers to model responsible AI citizenship and to help their students engage with technology in ways that are empowering rather than diminishing.

For Policy Makers and the Department of Education

Policy makers and the Department of Education are strongly urged to develop and disseminate clear, comprehensive, and SPED-specific policy frameworks governing the use of AI tools in special education classrooms in the Philippines. The near-universal agreement among teacher-participants that current policies are insufficient or unclear to guide responsible AI practice in Philippine special education settings reflects a critical governance gap that leaves teachers professionally unprotected and institutionally unsupported as they navigate an increasingly AI-permeated educational landscape. These frameworks must specifically address the data privacy and security of students with disabilities — whose educational records contain particularly sensitive information — the ethical use of AI-generated content in IEPs and other official documentation, the protocols for evaluating and approving AI tools for classroom use, and the rights of students and families to informed consent regarding AI use in their children's education.

The Department of Education is further recommended to integrate AI competency for special education teachers into the official continuing professional development requirements for SPED educators, ensuring that engagement with AI tools becomes a recognized and incentivized dimension of professional growth rather than an optional individual pursuit. This integration should be accompanied by the development of a national AI literacy framework for special education that articulates the specific competencies, ethical standards, and professional benchmarks expected of SPED teachers at different stages of AI adoption — providing both a developmental roadmap for teachers and an accountability structure for institutions.

For Future Researchers

Future researchers are encouraged to build upon the findings of this study by conducting larger-scale, multi-site investigations that extend beyond the eight teacher-participants of the present study to produce findings with greater generalizability across the diverse contexts of Philippine special education. Quantitative studies employing validated instruments with larger samples would allow for the statistical examination of relationships between teacher demographics, school characteristics, infrastructure variables, and levels of AI integration — generating insights that could inform targeted policy and programmatic responses at the division and national level.

Qualitative follow-up studies are equally recommended to deepen understanding of the lived experiences of special education teachers as they navigate AI adoption, the contextual factors that enable or constrain integration in specific school environments, and the student-level outcomes associated with different forms and intensities of AI use. Longitudinal research that tracks the same cohort of teachers over time as professional development interventions are implemented would be particularly valuable in establishing whether and how targeted capacity-building translates into sustained changes in AI integration practice. Additionally, research that centers the perspectives of students with disabilities and their families regarding AI use in special education — including their experiences, preferences, and concerns — would contribute an essential voice that is currently absent from the literature and from the evidence base informing AI policy in Philippine special education.

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