

**Utilization of assistive and instructional technologies to support learners
with special educational needs in inclusive classrooms**

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ABSTRACT

This descriptive-correlational study determined the extent of technological integration in inclusive classrooms and its influence on teachers' acceptance and utilization of technology for learners with Special Educational Needs (SEN) at Minglanilla Central Elementary School, Cebu, during School Year 2025–2026. Using purposive sampling, 53 teacher-respondents completed a questionnaire adapted from the Unified Theory of Acceptance and Use of Technology (UTAUT). Findings revealed that teacher-respondents were predominantly female, aged 46 and above, holding Teacher 3 positions, with master's units, and 13 or more years of teaching experience. The majority had Basic ICT competence and 32.08% had never attended SEN training. Performance Expectancy and Behavioral Intentions were rated Strongly Agree, while Facilitating Conditions received Agree rating. Accessibility and instructional support for SEN learners was rated Strongly Agree with equal participation as the lowest indicator. Extent of technology utilization was rated Always, yet specialized assistive technologies such as text-to-speech software and specialized devices were only Often used. Significant positive correlations were found between all UTAUT constructs and accessibility outcomes ($p=0.000$), and between accessibility and extent of utilization ($r=0.632$, $p=0.000$), leading to rejection of both null hypotheses. The study concluded that while teachers held strong beliefs and intentions regarding technology for SEN learners, actual use was constrained by inadequate facilitating conditions, particularly budget and infrastructure. An evidence-based action plan, Project ASSIST, was proposed to address gaps in assistive technology procurement, teacher training, ICT competence, and implementation support.

Keywords: Special education, technological integration, inclusive classrooms, Special Educational Needs (SEN), assistive technology, UTAUT, descriptive-correlational, action plan.

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INTRODUCTION

The integration of technology within inclusive educational settings has emerged as a critical strategy for addressing the diverse learning requirements of students with special educational needs (Simos & Katsiampoura, 2025). Such technological interventions including assistive technologies like screen readers and alternative keyboards, as well as artificial intelligence and learning analytics—facilitate equitable access to learning materials and customize pedagogical approaches to individual student profiles (Navas-Bonilla et al., 2025; Wulandari et al., 2024). Moreover, AI technology offers novel opportunities to adapt instruction based on individual requirements, fostering personalized learning experiences and improving academic performance for students with diverse needs (Fitas, 2025; Mpu, 2023). Despite these advancements, persistent challenges remain in terms of consistent implementation, teacher preparedness, and equitable access to resources (Damyanov, 2024; Polat et al., 2024). The efficacy of technology-integrated instruction is significantly influenced by educators' perspectives and their ability to identify and implement relevant technological tools for diverse learning needs, underscoring the importance of examining teacher perceptions and acceptance of technology (Karagianni & Drigas, 2023; Walia & GUHA, 2025).

In the Philippine context, while there is a recognized commitment to inclusive education, challenges persist regarding infrastructure and resources for technology integration, highlighting a disparity between national goals and practical implementation (Celeste & Osias, 2024). Filipino teachers frequently encounter resource constraints and structural barriers, and many report insufficient training and support for effective implementation of inclusive practices (Castalone et al., 2026; Vistar et al., 2024). This issue is compounded by a significant digital divide, particularly in rural areas, where limited access to hardware, software, and reliable internet infrastructure hinders technological adoption (Co, 2025; Moraleda et al., 2025). This capacity gap is especially pronounced in AI integration, where a majority of students and teachers in under-resourced regions like Minglanilla lack exposure to or familiarity with AI tools due to insufficient digital infrastructure and a dearth of comprehensive training programs for educators (Fudalan, 2025; Venzon & Venzon, 2025).

Within the Visayas, studies have documented similar challenges. Gonzaga et al. (2024) found that general education teachers in Cebu province reported moderate readiness for inclusive education but cited inadequate training and resource scarcity as primary barriers. Similarly, Tagyamon et al. (2025) conducted a systematic review of inclusive education implementation in the Philippines and noted that schools in Cebu's municipalities often struggle with assistive technology procurement due to limited local government support and budget constraints. These findings underscore the need for localized investigations into specific school contexts, such as Minglanilla Central Elementary School (MCES), where the interplay of teacher preparedness, resource availability, and SEN learner profiles may present unique challenges.

At Minglanilla Central Elementary School, the need for such a localized investigation is particularly urgent. School records and preliminary observations indicate that MCES currently serves learners with a range of special educational needs. These include both formally diagnosed cases (as documented through the school's Special Education Focal Person and partnerships with the Schools Division Office) and teacher-identified learners who exhibit characteristics consistent with these disabilities. While the school maintains an active Inclusive Learning Resource Center (ILRC), formal diagnostic assessments remain limited, and many teachers rely on observational data and referral processes to identify learners requiring additional support. The specific categories of SEN encountered include

visual impairment, autism spectrum disorder (ASD), specific learning disabilities (e.g., dyslexia), and attention-deficit/hyperactivity disorder (ADHD).

Each of these conditions demands distinct technological supports. Learners with visual impairment require screen readers and magnification software; those with ASD benefit from visual scheduling apps and social story tools; learners with dyslexia need text-to-speech software; and those with ADHD may require focus-assist tools and organizational apps. However, it remains unknown whether existing technological integrations at MCES adequately address these specific needs or whether teachers resort to generic, one-size-fits-all solutions due to lack of training, resources, or awareness.

This study directly addresses this critical gap by moving beyond broad inquiries about "technology use" to investigate which specific assistive technologies (e.g., screen readers, alternative keyboards, speech-to-text tools) and instructional technologies (e.g., interactive learning platforms, AI-driven adaptive software) are being utilized, for which categories of SEN, and with what frequency and purpose. By explicitly naming the prevalent disability categories at MCES, the present study will generate empirical data that can inform a targeted, evidence-based action plan—one that matches specific technological tools to specific learner profiles. Furthermore, this investigation will address the documented "capacity gap" and "digital divide" by assessing not only teacher acceptance and utilization of technology (via the Unified Theory of Acceptance and Use of Technology framework) but also the actual perceived accessibility and instructional support outcomes for SEN learners across different disability categories, thereby bridging the disconnect between teacher optimism and tangible classroom impact.

The present study will therefore examine the extent of technological integration at Minglanilla Central Elementary School, focusing on its influence on teacher acceptance and utilization within inclusive classrooms to benefit learners with SEN. This inquiry will contribute to the extant literature by providing empirical data on the contextual factors influencing technology adoption in a specific Philippine setting. Specifically, this study will investigate teachers' perceptions of technological integration using the UTAUT framework to understand factors influencing their acceptance and utilization of technology for SEN learners (Arguson et al., 2023). The insights derived from this localized investigation will serve as a foundational basis for formulating an evidence-based action plan tailored to enhance pedagogical practices, resource allocation, and professional development for inclusive education at Minglanilla Central Elementary School, ensuring that technological advancements translate into tangible improvements in educational outcomes for learners with visual impairment, ASD, learning disabilities, and ADHD.

Statement of the problem

This study determined the extent of technological integration in inclusive classrooms and its influence on teachers' acceptance and utilization of technology for learners with Special Educational Needs (SEN) at Minglanilla Central Elementary School, Minglanilla, Cebu during the school year 2025–2026 as a basis for an action plan.

Specifically, the study sought to answer the following questions:

1. What is the profile of the teacher respondents in terms of age and sex, position rank, highest educational attainment, years of teaching experience, inclusive/special education trainings attended, level of ICT competence, and access to technological resources?

2. What is the level of teachers' acceptance and utilization of technology in inclusive classrooms in terms of performance expectancy, effort expectancy, social influence, facilitating conditions, behavioral intentions, and use behavior?
3. As perceived by the respondents, what is the level of accessibility and instructional support provided to learners with Special Educational Needs (SEN) through technological integration?
4. What is the extent of utilization of assistive and instructional technologies by teachers in inclusive classrooms in terms of frequency, type, and purpose?
5. Is there a significant relationship between the teachers' acceptance and utilization of technology and the level of accessibility and instructional support for learners with SEN?
6. Is there a significant relationship between the level of accessibility and instructional support for learners with SEN and the extent of utilization of assistive and instructional technologies by teachers in inclusive classrooms?
7. Based on the findings, what action plan may be proposed?

METHODOLOGY

This study utilized a descriptive-correlational research design to examine the extent of technological integration in inclusive classrooms and its relationship with instructional support for learners with Special Educational Needs (SEN) at Minglanilla Central Elementary School, Minglanilla, Cebu during the School Year 2025–2026. The descriptive component was employed to systematically describe the profile of teacher-respondents, the level of teachers' acceptance and utilization of technology, the level of accessibility and instructional support provided to learners with SEN, and the extent of utilization of assistive and instructional technologies. The correlational component was used to determine the significant relationships between teachers' acceptance and utilization of technology and the level of accessibility and instructional support for learners with SEN, and between the level of accessibility and instructional support for learners with SEN and the extent of utilization of assistive and instructional technologies by teachers in inclusive classrooms. This descriptive-correlational design was selected over experimental, purely descriptive, and causal-comparative designs because the study does not involve manipulating variables or comparing pre-existing groups, but rather aims to document existing practices and quantify relationships as they naturally occur. Unlike experimental designs, which establish causation, this study only examines statistical associations; significant correlations indicate co-variation between variables but do not imply that one causes the other. The design provides a realistic snapshot of existing practices and perceptions at Minglanilla Central Elementary School, enabling the identification of patterns, trends, and associations among variables, which serve as the empirical basis for proposing an evidence-based action plan.

This study followed the Input–Process–Output (IPO) model to clearly illustrate the systematic procedure undertaken. The input of this study consisted of the primary data gathered from 53 teacher-respondents at Minglanilla Central Elementary School, Minglanilla, Cebu, during the School Year 2025–2026. Specifically, the input included the profile of teacher-respondents in terms of age and sex, position rank, highest educational attainment, years of teaching experience, inclusive/special education trainings attended, level of ICT competence, and access to technological resources; the level of teachers' acceptance and utilization of technology in inclusive classrooms measured through performance expectancy, effort expectancy, social influence, facilitating conditions, behavioral intentions, and use behavior; the level of accessibility and instructional support provided to learners with SEN through technological integration; the extent of utilization of assistive and instructional

technologies by teachers in terms of frequency and purpose; and the significant relationships between teachers' acceptance and utilization of technology and accessibility/instructional support, as well as between accessibility/instructional support and extent of utilization of assistive and instructional technologies. Once the data were gathered, the retrieval of questions led to the statistical treatment of the data, and this phase concluded with a rigorous analysis and interpretation of the results to draw evidence-based conclusions. The final stage of the study is the output, which is the tangible result of the entire research flow. Based on the interpreted data and findings from the process phase, the study culminates in the development of an action plan intended to provide strategic directions or interventions to improve technological integration and support for learners with Special Educational Needs.

This study was conducted at Minglanilla Central Elementary School, located at 18 Julio Street, Barangay Poblacion Ward I, Minglanilla, Cebu, Philippines. The municipality of Minglanilla is situated approximately 15 kilometers south of Cebu City and is bordered by Talisay City to the north, Naga City to the south, and the Cebu Strait to the east. The school belongs to the public elementary school system under the Schools Division of Cebu Province and serves learners from nearby barangays within the municipality. The school has a total teacher population of 92, composed of classroom teachers handling different grade levels and subject areas, and these teachers are responsible for implementing classroom instruction and inclusive educational practices, including the integration of assistive and instructional technologies for learners with SEN. The school currently serves approximately 2,906 learners enrolled in the primary level, including pupils participating in the Special Program in Science. Due to the high number of enrollees, the school implements a double-shift class schedule to accommodate all learners, and the student population includes learners with diverse academic abilities and learning needs, which provides a suitable context for examining the use of assistive and instructional technologies in inclusive classroom settings.

Minglanilla Central Elementary School is equipped with various facilities that support effective teaching and learning. The school has 64 classrooms that accommodate the large student population, and to support technology integration in instruction, the school has an E-Class or ICT room where teachers and learners can access computers and digital learning materials. The school also maintains a Science Laboratory that supports practical and experimental learning, particularly for pupils enrolled in the Special Program in Science. In addition, a Learning Resource Center provides teachers and students access to instructional materials, references, and supplementary learning resources. Each classroom is also equipped with an LED screen, which allows teachers to present multimedia lessons, digital content, and other instructional materials that enhance the learning experience of pupils, including those with special educational needs. Minglanilla Central Elementary School was selected as the research environment because it provides a relevant and appropriate setting for examining the utilization of assistive and instructional technologies in mainstream classrooms. The school has a large student population, a sufficient number of teachers, and diverse learners, including those who may require additional instructional support, which makes it an ideal environment for investigating how teachers integrate technology to address the learning needs of students with special educational needs. Furthermore, the availability of technological resources, such as LED screens in classrooms, an ICT/E-classroom, and a Learning Resource Center, supports the implementation of technology-enhanced instruction, and the presence of these facilities enables teachers to utilize various digital tools and assistive technologies that can enhance accessibility and participation in learning. The school's double-shift system and inclusive educational practices also reflect the realities faced by many public schools in the Philippines, making the findings of the study more relevant and applicable to similar

educational settings. Therefore, Minglanilla Central Elementary School provides a suitable and meaningful context for conducting this research.

The respondents of this study were 53 teachers selected from the total 92 teaching personnel of Minglanilla Central Elementary School, Minglanilla, Cebu. The selection focused on teachers who were directly involved in delivering lessons to both junior and senior high school students, particularly those engaged in inclusive classrooms with learners who have Special Educational Needs (SEN) during the School Year 2025–2026. The remaining 34 teaching personnel were excluded because they were not assigned to inclusive classrooms or did not have learners with SEN under their supervision. In terms of the distribution of respondents by grade level, Kindergarten accounted for 5 respondents, or 9.43%; Grade 1 accounted for 8 respondents, or 15.09%; Grade 2 accounted for 8 respondents, or 15.09%; Grade 3 accounted for 8 respondents, or 15.09%; Grade 4 accounted for 8 respondents, or 15.09%; Grade 5 accounted for 8 respondents, or 15.09%; and Grade 6 accounted for 8 respondents, or 15.09%, for a total of 53 respondents comprising 100.00% of the sample.

A purposive sampling method was employed for this study. This non-probability sampling technique was justified on several grounds. First, the study required respondents who possessed specific, relevant characteristics, namely direct and current experience handling inclusive classrooms with learners with SEN, since only these teachers could provide valid and reliable responses regarding technological integration, acceptance, utilization, and accessibility outcomes. Second, purposive sampling ensured that the respondents met the inclusion criteria of being permanent or temporary teaching personnel at MCES, being assigned to a class section that included at least one learner with identified SEN, and having been teaching in an inclusive classroom for at least one semester. Teachers who did not meet these criteria, such as those handling only regular classes without SEN learners, non-teaching personnel, or teachers on extended leave, were deliberately excluded to maintain the specificity and relevance of the data. Third, given the specialized nature of inclusive education, a random sampling method could have resulted in the inclusion of respondents without the necessary experience or the exclusion of qualified respondents, thereby compromising the validity of the findings. Fourth, purposive sampling allowed the researcher to focus exclusively on the target population that could meaningfully contribute to answering the research questions, particularly those related to technology acceptance, utilization, and accessibility for learners with SEN. Thus, the use of purposive sampling ensured that the 53 selected respondents possessed the essential knowledge, experience, and perspective required to provide accurate and relevant data for the study.

The primary instrument for this study was adapted from Venkatesh et al. (2003), consisting of a structured questionnaire designed to gather data on teachers' perceptions and practices regarding technological integration in inclusive classrooms. The questionnaire was divided into four parts, each addressing specific research variables. Part I gathered the demographic profile of the teacher-respondents, including items on name (optional), sex (male or female), age brackets (21–25, 26–30, 31–35, 36–40, 41–45, 46 and above), position rank (Master Teacher I, Teacher 3, Teacher 2, Teacher 1), highest educational attainment (Doctorate Degree, With Doctorate Units, Master's Degree, With Master's Units, Bachelor's Degree), years of teaching experience (1–3, 4–6, 7–9, 10–12, 13 and above), inclusive/special education trainings attended (yes or no), level of ICT competence (basic, intermediate, advanced), and access to technological resources (laptop/computer, internet access, projector/Smart TV, mobile devices/tablets), and this section utilized a checklist format to facilitate ease of response and accurate data collection. Part II measured the level of teachers' acceptance and utilization of technology in inclusive classrooms, adapted from the Unified Theory of Acceptance and Use of Technology (UTAUT) by Venkatesh et al. (2003),

consisting of 28 items distributed across six constructs: Performance Expectancy (6 items), Effort Expectancy (6 items), Social Influence (5 items), Facilitating Conditions (5 items), Behavioral Intentions (4 items), and Use Behavior (3 items). Respondents rated each statement using a 5-point Likert scale: 5 (Strongly Agree), 4 (Agree), 3 (Moderately Agree), 2 (Disagree), and 1 (Strongly Disagree), and the items were contextualized to reflect inclusive classroom settings and the use of assistive and instructional technologies for learners with SEN. Part III assessed the level of accessibility and instructional support provided to learners with SEN through technological integration, containing 10 indicators derived from the literature on inclusive education and assistive technology. The indicators measured the extent to which technology helped SEN learners access instructional materials independently, reduced learning barriers, supported communication, enabled equal participation, facilitated differentiated instruction, monitored progress, enhanced collaboration, strengthened motivation and confidence, and improved overall classroom inclusivity, and respondents rated each indicator using the same 5-point Likert scale as in Part II. Part IV measured the extent of utilization of assistive and instructional technologies by teachers in inclusive classrooms in terms of frequency and purpose, containing 15 indicators that asked teachers to rate how often they used various technologies and for what instructional purposes. The indicators included daily technology use, incorporation of assistive technologies during lesson delivery, use of digital tools for assessment, integration of technology in collaborative activities, use for remediation and intervention, use of assistive software (e.g., text-to-speech, speech-to-text), use of multimedia tools, use of mobile applications for SEN, use of learning management systems, use of specialized devices (e.g., screen readers, adaptive keyboards), and use of technology for improving understanding, individualized instruction, communication, progress monitoring, and engagement, and respondents rated each indicator using a 5-point frequency scale: 5 (Always), 4 (Often), 3 (Sometimes), 2 (Rarely), and 1 (Never).

To ensure the validity and reliability of the adapted questionnaire, the researcher employed a multi-stage validation process. First, the instrument was subjected to content validity testing by a panel of five experts in the fields of special education, educational technology, and research methodology. The experts included three faculty members from the Graduate Teacher Education program of Cebu Technological University-Main Campus specializing in Special Education and educational technology, and two experienced SPED practitioners from the Division of Cebu Province. The panel evaluated the questionnaire items based on four criteria: relevance to the research objectives, clarity and comprehensibility of the language, appropriateness of the items for the target respondents, and completeness of the content coverage for each construct. Each expert rated the items using a 4-point relevance scale (1=Not Relevant, 2=Somewhat Relevant, 3=Quite Relevant, 4=Highly Relevant), and based on the expert evaluations, the researcher computed the Content Validity Index (CVI) for each item and for the overall instrument. Items with a CVI score below 0.78 were revised or removed as recommended by the experts. The final version of the questionnaire incorporated the feedback, including rephrasing of items for clarity, addition of contextual examples specific to inclusive classrooms, and deletion of redundant or ambiguous items. Following the content validation, the questionnaire underwent a pilot testing phase conducted with 15 teachers from a different private school in Cebu with similar characteristics to MCES in terms of inclusive education implementation and technology availability; these teachers were not included in the actual study sample to avoid contamination of results. The pilot testing aimed to assess the internal consistency and reliability of the instrument, determine the clarity and comprehensibility of the items,

estimate the time required for completion, and identify any potential issues with the questionnaire's format or instructions.

The reliability of the instrument was assessed using Cronbach's alpha coefficient, which measures the internal consistency of the items within each construct. The pilot testing yielded the following Cronbach's alpha values for each UTAUT construct: Performance Expectancy ($\alpha = 0.87$), Effort Expectancy ($\alpha = 0.84$), Social Influence ($\alpha = 0.82$), Facilitating Conditions ($\alpha = 0.85$), Behavioral Intentions ($\alpha = 0.88$), and Use Behavior ($\alpha = 0.79$). For Part III (Accessibility and Instructional Support), the Cronbach's alpha was 0.86, and for Part IV (Extent of Utilization of Assistive and Instructional Technologies), the Cronbach's alpha was 0.89. All alpha values exceeded the acceptable threshold of 0.70, indicating that the questionnaire demonstrated good to excellent internal consistency reliability (Nunnally & Bernstein, 1994). The overall reliability coefficient for the entire instrument was $\alpha = 0.91$, indicating high overall reliability. Based on the pilot testing feedback, minor revisions were made to two items to improve clarity, and the final questionnaire was then prepared for administration to the actual respondents.

The process of collecting data for this study was carried out in three stages: the Preliminary Stage, Data Gathering Stage, and Post-Data Gathering Stage, each systematically implemented to ensure the accuracy, reliability, and ethical integrity of the research process. In the Preliminary Stage, the researcher first secured formal approval from the School Principal of Minglanilla Central Elementary School to conduct the study within the school. The research proposal, including its objectives, significance, methodology, and ethical considerations, was presented to obtain informed consent, and coordination with the school administration was done to schedule the distribution and collection of the questionnaires. Teacher-respondents were oriented about the purpose of the study, the content of the questionnaire, and the confidentiality of their responses, and ethical considerations such as voluntary participation and anonymity were emphasized to ensure respondents' rights were respected. In the Data Gathering Stage, after securing permissions, the researcher administered the questionnaires to all teacher respondents of MCES using a purposive sampling approach. Clear instructions were provided to ensure accurate and honest responses, and the questionnaire was designed to take approximately 20–30 minutes to complete, with respondents given a one-week period to accomplish the instrument at their convenience. Retrieval of the completed questionnaires was conducted after seven days, with follow-up reminders sent on Day 4 and Day 6 to non-respondents to ensure a high return rate. The researcher coordinated with the school administration to schedule appropriate times for teachers to complete the questionnaires, minimizing disruption to classes, and respondents were assured of confidentiality and voluntary participation, emphasizing that their responses would be used solely for research purposes. The administration of the questionnaire was conducted during the teachers' free periods or scheduled faculty meetings to maximize participation rates. In the Post-Data Gathering Stage, upon completion of the questionnaire administration, the researcher collected and organized the responses, checking for completeness and consistency. Data were then encoded and analyzed using appropriate statistical tools to address the research questions, and finally, the researcher securely stored the data to maintain confidentiality and adhere to ethical research standards. Findings from the analysis informed the preparation of the action plan and recommendations for enhancing technological integration in inclusive classrooms.

This study was conducted with strict adherence to ethical standards to protect the rights and welfare of all participants. Prior to data collection, the researcher secured formal approval from the School Principal of Oslob Central Elementary School (OCES) and submitted a transmittal letter to the Schools Division Office of Cebu Province. Teachers were informed of the purpose, objectives, and procedures of the study and provided voluntary

informed consent. Signed informed consent forms were obtained from all teacher-respondents prior to their participation, clearly indicating that they had read and understood the information provided, voluntarily agreed to participate, and understood their right to withdraw at any time without penalty. Respondents' personal information and responses were treated with confidentiality and anonymity, with all data securely stored and accessible only to the researcher, in compliance with the Data Privacy Act of 2012 (Republic Act No. 10173). The study ensured that participation did not cause any physical, psychological, or social harm, and that the data collected were used solely for academic purposes, reported objectively, and credited appropriately to all sources.

The data gathered from the validated questionnaire were carefully tabulated, analyzed, and interpreted using appropriate statistical tools to answer the specific research questions of the study. Frequency was used to determine the number of respondents falling under each category or response option, computed by counting the number of teachers who selected each response option for each demographic variable. Percentage was used to determine the demographic profile of the teacher-respondents, such as age and sex, position rank, educational attainment, years of teaching experience, inclusive/special education trainings attended, level of ICT competence, and access to technological resources; percentage expresses the frequency of each category as a proportion of the total number of respondents, allowing for meaningful comparison across categories, and it was calculated by dividing the frequency of each category by the total number of respondents ($N=30$) and multiplying by 100. Ranking was used to arrange the access to technological resources in descending order based on the frequency of responses from teacher-respondents, allowing the researcher to identify which technological resources were most accessible to teachers and which were least accessible; specifically, the resource with the highest frequency received a rank of 1, followed by the next highest with rank 2, and so forth. This statistical treatment facilitated the prioritization of resource needs in the proposed action plan, as resources with lower accessibility rankings required more immediate attention and intervention from school administrators. Weighted Mean was employed to determine the level of teachers' acceptance and utilization of technology in inclusive classrooms, the level of accessibility and instructional support provided to learners with Special Educational Needs (SEN), and the extent of utilization of assistive and instructional technologies; the weighted mean allowed for a clear interpretation of respondents' perceptions on the Likert scale, with the average score indicating the overall level of agreement or frequency for each construct and indicator. Standard Deviation was calculated to measure the variability or dispersion of responses from the mean, indicating the degree of consistency or diversity in teachers' perceptions regarding technological integration and its impact on accessibility and instructional support; a low standard deviation indicated that respondents' ratings were clustered closely around the mean, suggesting consensus among teachers, while a high standard deviation indicated wide variation in responses, suggesting disagreement or diverse experiences among teacher-respondents.

The Pearson Product-Moment Correlation Coefficient (r) was used to determine the significant relationship between teachers' acceptance and utilization of technology and the level of accessibility and instructional support for learners with SEN, and between the level of accessibility and instructional support for learners with SEN and the extent of utilization of assistive and instructional technologies by teachers in inclusive classrooms. Pearson- r was selected because both variables in each correlation pair are continuous (measured on a 5-point Likert scale) and the study aims to measure the linear association between them. Unlike Spearman's ρ , which is appropriate for ordinal or non-linear data, Pearson- r is suitable when assumptions of normality, linearity, and homoscedasticity are met. Prior to conducting

the analysis, these assumptions were verified: normality was assessed using the Shapiro-Wilk test ($p > 0.05$) and examination of skewness and kurtosis values (within ± 2 and ± 7 , respectively); linearity was confirmed through visual inspection of scatterplots; homoscedasticity was verified through residual plots; and the absence of extreme outliers was confirmed using boxplot analysis. All assumptions were met, confirming the appropriateness of Pearson-r. The strength of correlation was interpreted using Cohen's (1988) guidelines: $r = 0.10$ – 0.29 (small), $r = 0.30$ – 0.49 (moderate), and $r = 0.50$ – 1.00 (large/strong). The significance level was set at 0.05 (two-tailed).

After data collection, the weighted mean for each indicator was computed to determine the overall level of technological integration, accessibility, and instructional support for learners with Special Educational Needs (SEN). Each respondent's answers were assigned a numerical value corresponding to the Likert scale used in each part of the questionnaire. For Part II (Technological Integration in Inclusive Classrooms) and Part III (Accessibility and Instructional Support for Learners with SEN), a scale value of 5, corresponding to a range of 4.21–5.00, was verbally described as Strongly Agree, indicating a very high level of agreement or effectiveness in technological integration and support for learners with SEN. A scale value of 4, corresponding to a range of 3.41–4.20, was verbally described as Agree, indicating a high level of agreement or effectiveness in technological integration and support for learners with SEN. A scale value of 3, corresponding to a range of 2.61–3.40, was verbally described as Moderately Agree, indicating a moderate level of agreement or effectiveness in technological integration and support for learners with SEN. A scale value of 2, corresponding to a range of 1.81–2.60, was verbally described as Disagree, indicating a low level of agreement or effectiveness in technological integration and support for learners with SEN. A scale value of 1, corresponding to a range of 1.00–1.80, was verbally described as Strongly Disagree, indicating a very low level of agreement or effectiveness in technological integration and support for learners with SEN.

For Part IV (Extent of Utilization of Assistive and Instructional Technologies by Teachers in Inclusive Classrooms), a scale value of 5, corresponding to a range of 4.21–5.00, was verbally described as Always, indicating that teachers consistently and regularly utilize the technology in inclusive classrooms for learners with SEN. A scale value of 4, corresponding to a range of 3.41–4.20, was verbally described as Often, indicating that teachers frequently utilize the technology, though not on every occasion, for learners with SEN. A scale value of 3, corresponding to a range of 2.61–3.40, was verbally described as Sometimes, indicating that teachers occasionally utilize the technology for learners with SEN. A scale value of 2, corresponding to a range of 1.81–2.60, was verbally described as Rarely, indicating that teachers seldom utilize the technology for learners with SEN. A scale value of 1, corresponding to a range of 1.00–1.80, was verbally described as Never, indicating that teachers do not utilize the technology at all for learners with SEN.

RESULTS AND DISCUSSION

This chapter presents and discusses the data gathered from the 53 teacher respondents of Minglanilla Central Elementary School, Minglanilla, Cebu, during the school year 2025 to 2026. The study employed a descriptive correlational research design, utilizing a survey questionnaire as the primary data collection instrument administered to the 53 teacher respondents. The data were analyzed using descriptive statistics, including frequency counts, percentages, means, aggregate means, and standard deviations, as well as inferential statistics, specifically the Pearson product moment correlation coefficient, to determine the significance of relationships among key variables at the 0.05 level of significance. The discussion that follows is grounded entirely in the data gathered from the respondents and is interpreted in

direct relation to the specific objectives of the study, namely to describe the profile of the teacher respondents, to determine their level of acceptance and utilization of technology, to assess the level of accessibility and instructional support provided to learners with Special Educational Needs, to examine the extent of utilization of assistive and instructional technologies, and to establish the significant relationships among these variables in order to inform a proposed action plan.

Profile of the teacher respondents

The demographic and professional profile of the respondents was first examined in terms of age and sex. Of the 53 teacher respondents, 50, or 94.34%, are female, while 3, or 5.66%, are male. In terms of age distribution, the largest group falls within the 46 and above bracket, comprising 22 respondents, or 41.51%, followed by the 36 to 40 bracket with 13 respondents, or 24.53%, the 41 to 45 bracket with 9 respondents, or 16.98%, the 31 to 35 bracket with 7 respondents, or 13.21%, and the 26 to 30 bracket with only 2 respondents, or 3.77%. Notably, no male respondents were recorded in the 26 to 30 and 46 and above age brackets. These figures indicate that the teaching force handling inclusive classrooms at the school is predominantly female and heavily concentrated among veteran educators aged 46 and above, while the limited presence of early career teachers within the 26 to 30 bracket, accounting for only 3.77% of the sample, suggests restricted recent entry of younger educators into the inclusive education program. This demographic composition implies that professional development initiatives must be designed specifically for experienced, predominantly female teachers, recognizing their established pedagogical strengths while providing structured, scaffolded support for the adoption of assistive technology, since technology integration efforts cannot rely on peer mentoring from younger digital natives and must instead be embedded directly within the existing veteran workforce. This pattern is consistent with the findings of Gonzaga et al. (2024) and Polat et al. (2024), who documented that Philippine inclusive classrooms are typically staffed by experienced female educators, a demographic factor that shapes both pedagogical approaches and technology adoption behaviors.

With respect to position rank, the data reveal that the majority of the 53 respondents hold the rank of Teacher 3, comprising 23 individuals, or 43.40%, followed by Teacher 1 with 14 respondents, or 26.42%, Teacher 2 with 10 respondents, or 18.87%, and Master Teacher 1 with only 6 respondents, or 11.32%. No respondents were recorded at the Master Teacher 2 level or higher. This concentration at the Teacher 3 level reflects a seasoned instructional workforce with substantial classroom experience, while the minimal representation of master teachers at 11.32% suggests limited access to senior instructional leaders capable of mentoring peers specifically in assistive technology integration. These findings imply that the proposed action plan should prioritize capacity building initiatives for master teachers so that they may serve as technology integration coaches, and that school administrators should consider restructuring professional development to be more peer driven, allowing experienced Teacher 3 respondents to share best practices while simultaneously creating clearer career pathways toward master teacher roles focused on inclusive educational technology. This distribution mirrors the findings of Factor and Saenz (2025), who observed that inclusive education in the Philippines is typically delivered by experienced general education teachers rather than specialized master teachers, underscoring the need for targeted leadership development in this area.

In terms of highest educational attainment, the majority of respondents, specifically 38, or 71.70%, have completed units toward a master's degree without finishing the full

degree, while 6 respondents, or 11.32%, have earned doctorate units, 5 respondents, or 9.43%, hold a completed master's degree, and 4 respondents, or 7.55%, hold only a bachelor's degree. Notably, no respondent in the sample holds a completed doctoral degree. While all teachers in the sample are at minimum college graduates and the majority have pursued postgraduate studies, only a small fraction have completed their graduate degrees, indicating strong motivation for continued professional development but also suggesting the presence of systemic barriers, such as time constraints, financial limitations, or workload demands, that prevent degree completion. This finding implies that the proposed action plan should include incentives and support systems, such as reduced teaching loads, scholarship opportunities, or flexible scheduling arrangements, to enable teachers to convert their earned master's units into completed degrees, while those with doctorate units and completed master's degrees should be identified and tapped as potential resource persons or technology integration leaders within the school. Santillán et al. (2024) identified similar patterns in teacher education, noting that while teachers demonstrate positive attitudes toward professional growth, systemic barriers often impede degree completion, which in turn affects their readiness for technology enhanced inclusive practices.

Regarding years of teaching experience, the majority of respondents, 33 out of 53, or 62.26%, have 13 years or more of teaching experience, followed by 7 respondents, or 13.21%, with 7 to 9 years, 6 respondents, or 11.32%, with 10 to 12 years, 4 respondents, or 7.55%, with 1 to 3 years, and 3 respondents, or 5.66%, with 4 to 6 years. Collectively, early career and mid career teachers with 1 to 9 years of experience represent only 37.74%, or 20 respondents, of the total sample. The teaching force is therefore predominantly composed of highly experienced educators with over a decade of service, and the comparatively low representation of teachers with 1 to 9 years of experience suggests a potential gap in the influx of newer educators who might otherwise bring fresh perspectives and more contemporary training in assistive technologies. This implies that the action plan should leverage the extensive practical knowledge of veteran teachers while proactively addressing possible resistance to adopting new technologies, and that professional development should be designed according to adult learning principles that emphasize relevance and gradual integration, with mentorship pairings between veteran teachers as pedagogy experts and newer teachers as digital navigators offering a mutually beneficial model of collaboration. Polat et al. (2024) and Yılmaz et al. (2021) found that experienced educators often demonstrate greater awareness of professional development opportunities yet may exhibit lower preparedness for integrating information and communication technologies with students requiring special educational support, which underscores the need for targeted training among this experienced cohort.

In terms of inclusive or special education trainings attended, 36 respondents, or 67.92%, reported having attended such trainings, while 17 respondents, or 32.08%, reported having attended none. While more than two thirds of the teaching force have received some professional development related to inclusive or special education, nearly one third remain without any formal training in this area, representing a significant gap in foundational knowledge for supporting learners with Special Educational Needs. This finding implies that the action plan must prioritize mandatory and sustained professional development on Special Educational Needs and assistive technologies for all teachers, particularly the 32.08% who reported no prior training, and that a training needs assessment should be conducted to identify specific gaps in knowledge and skills among both trained and untrained teachers. Fernández Batanero et al. (2022) found that the effectiveness of inclusive practices, particularly in integrating assistive technologies, is highly contingent upon the depth and recency of teacher training, making this a critical intervention point for the school.

With regard to the level of ICT competence, the majority of respondents, 27 out of 53, or 50.94%, rated themselves at the Basic level, followed by 23 respondents, or 43.40%, at the Intermediate level, and only 3 respondents, or 5.66%, at the Advanced level. Altogether, 94.34% of respondents fall within the Basic to Intermediate range. This distribution suggests that teachers possess foundational digital skills but may struggle with more complex functions such as troubleshooting, integrating multiple digital tools, customizing assistive technologies, or adapting instructional software for learners with Special Educational Needs, while the extremely low percentage of Advanced level teachers at 5.66% highlights a critical shortage of in house technology experts within the school. This implies that the action plan must prioritize foundational capacity building initiatives that move teachers from the Basic to at least the Intermediate level of proficiency before introducing specialized assistive technologies, with professional development structured as a tiered program that begins with essential ICT skills before progressing to Special Educational Needs specific applications such as text to speech tools, speech recognition software, and adaptive input devices. Azizoğlu and Çakır (2025) found that while teachers may be able to operate various digital tools, they often lack the expertise to adapt or customize these tools effectively for specialized instructional purposes, particularly in supporting learners with Special Educational Needs, which confirms the need for targeted capacity building among the respondents.

Finally, in terms of access to technological resources, which was measured through multiple response analysis, laptop or computer access ranked first with a frequency of 52, followed by internet access, which ranked second with a frequency of 42, mobile devices or tablets, which ranked third with a frequency of 40, and projector or smart TV access, which ranked fourth with a frequency of 34. These figures indicate that basic computing devices are nearly universal at 98.11%, while access rates decline progressively for internet connectivity at 79.25%, mobile devices at 75.47%, and projection equipment at 64.15%. The gap between laptop access, ranked first, and projector or smart TV access, ranked fourth, is particularly notable, given that display technologies are essential for whole class instruction and for modeling assistive technology use to an entire classroom. This implies that the action plan should prioritize improving school wide WiFi infrastructure, procuring additional display devices, and exploring the use of mobile devices as alternative assistive tools, and that school administrators should conduct a classroom level inventory to identify specific resource gaps and establish a rotation system or funding mechanism to address them systematically. Polat et al. (2024) and Lustica et al. (2025) found that while teachers often possess fundamental digital tools, the infrastructure necessary for seamless and comprehensive technology enhanced instruction, particularly for specialized assistive technologies, remains underdeveloped in many schools, a finding consistent with the resource gaps observed among the respondents of this study.

Level of teachers' acceptance and utilization of technology in inclusive classrooms

The level of teachers' acceptance and utilization of technology in inclusive classrooms was measured through six constructs adapted from the Unified Theory of Acceptance and Use of Technology, namely Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Conditions, Behavioral Intentions, and Use Behavior. For Performance Expectancy, indicator means ranged from 4.58 to 4.38, with all six indicators falling within the Strongly Agree verbal description. The highest rated indicator was that technology makes content accessible for visual and auditory impairments, with a mean of 4.58 and a standard deviation of 0.53, while the lowest rated indicator was that gamified platforms engage

learners with attention deficit hyperactivity disorder and autism, with a mean of 4.38 and a standard deviation of 0.60. Other indicators included the belief that technology tools enhance the lesson participation of learners with Special Educational Needs, with a mean of 4.51 and a standard deviation of 0.64, that assistive applications accelerate the achievement of learning goals for learners with Special Educational Needs, with a mean of 4.47 and a standard deviation of 0.64, that digital aids boost academic results for learners with diverse needs, with a mean of 4.51 and a standard deviation of 0.54, and that technology enables personalized instruction in mixed classes, with a mean of 4.43 and a standard deviation of 0.60. The aggregate mean for Performance Expectancy was 4.48, with a standard deviation of 0.59, interpreted as Strongly Agree. Teachers therefore hold a strongly positive perception of technology's potential to improve instructional effectiveness for learners with Special Educational Needs, and the highest rating accorded to accessibility tools indicates that teachers particularly value assistive technologies for addressing sensory disabilities, while the comparatively lower rating for gamified platforms suggests less familiarity or confidence with game based interventions for attention deficit hyperactivity disorder and autism. This implies that the action plan should capitalize on this positive disposition by shifting focus from persuasion to implementation support, providing hands on training on specific assistive tools for visual and auditory impairments, which teachers already value most highly, alongside workshops on evidence based gamification strategies and attention focusing tools to address the slightly lower confidence in that area. Khasawneh (2024) found that teachers generally hold positive views regarding technology's role in enhancing student engagement and providing personalized learning experiences, particularly in special education contexts, corroborating the present findings.

For Effort Expectancy, indicator means ranged from 4.42, interpreted as Strongly Agree, down to 3.87, interpreted as Agree. The highest rated indicator was that inclusive lesson plans integrate technology tools easily, with a mean of 4.42 and a standard deviation of 0.57, while the lowest rated indicator was that daily technology integration feels effortless, with a mean of 3.87 and a standard deviation of 0.94. Other indicators included quickly learning new assistive technologies, with a mean of 4.09 and a standard deviation of 0.69, classroom technology interfaces suiting teacher use, with a mean of 4.23 and a standard deviation of 0.61, adapting applications for Special Educational Needs requiring minimal effort, with a mean of 3.96 and a standard deviation of 0.76, and initial training simplifying ongoing technology setup, with a mean of 4.28 and a standard deviation of 0.72. The aggregate mean for Effort Expectancy was 4.14, with a standard deviation of 0.71, interpreted as Agree. Teachers therefore generally agree that using technology requires manageable effort, although the aggregate falls within the Agree rather than the Strongly Agree range, indicating a somewhat less favorable perception than that observed for Performance Expectancy, and the lowest rated indicator regarding daily effortless integration suggests that teachers experience some degree of cognitive load, time demand, or technical friction in routine use. This implies that the action plan must reduce effort expectancy barriers through just in time technical support, simplified workflows for common assistive tasks, and ongoing coaching rather than one time training, with the relatively high standard deviation of 0.94 for daily effortless integration suggesting varied experiences across classrooms that require differentiated support. Foykas et al. (2026) found that teachers' perceived effort expectancy directly influences their behavioral intention to adopt technology for inclusive education, emphasizing the critical role of user friendliness in technology adoption, consistent with the pattern observed in this study.

For Social Influence, indicator means ranged from 4.23, interpreted as Strongly Agree, down to 3.81, interpreted as Agree. The highest rated indicator was that Department of Education mandates support inclusive technology use, with a mean of 4.23 and a standard

deviation of 0.78, while the lowest rated indicator was that parents endorse technology for their child with Special Educational Needs, with a mean of 3.81 and a standard deviation of 0.81. Other indicators included colleagues promoting technology in inclusive settings, with a mean of 4.15 and a standard deviation of 0.69, school administrators supplying Special Educational Needs technology resources, with a mean of 3.96 and a standard deviation of 0.76, and networks sharing effective Special Educational Needs technology practices, with a mean of 4.11 and a standard deviation of 0.82. The aggregate mean for Social Influence was 4.05, with a standard deviation of 0.77, interpreted as Agree. Teachers therefore perceive moderate social pressure to integrate technology, with Department of Education mandates functioning as the strongest driver, while parent endorsement emerged as the weakest source of influence, suggesting limited communication channels or partnership mechanisms between teachers and parents regarding assistive technology. This implies that the action plan should strengthen administrative action and parent engagement to build a more robust ecosystem of support, implementing parent education seminars, demonstration sessions on assistive technologies, and home school technology agreements to increase parental awareness and advocacy. Ulviani (2025) found that institutional directives play a critical role in shaping teacher perceptions and practices regarding technology integration in inclusive settings, even as practical implementation continues to face challenges such as insufficient professional development and resources, a pattern that resonates with the present findings.

For Facilitating Conditions, indicator means ranged from 4.09 down to 3.79, with all indicators interpreted as Agree. Three indicators tied at the highest mean of 4.09: technical support resolving classroom issues promptly, with a standard deviation of 0.71, schedules allowing technology planning time, with a standard deviation of 0.74, and professional development programs targeting inclusive technology skills, with a standard deviation of 0.74. The lowest rated indicator was that budget covers Special Educational Needs assistive tools, with a mean of 3.79 and a standard deviation of 0.82, while the indicator regarding the school providing reliable devices and internet recorded a mean of 3.92 and a standard deviation of 0.94. The aggregate mean for Facilitating Conditions was 4.00, with a standard deviation of 0.79, interpreted as Agree. Teachers therefore perceive organizational support as adequate but not optimal, with material and financial resources remaining significant constraints, as reflected in the lowest rating accorded to budget for assistive tools, and the aggregate mean of exactly 4.00, positioned at the midpoint of the Agree range, indicates that facilitating conditions are insufficient to fully enable the level of technology integration that teachers believe is valuable. This implies that the action plan must prioritize securing funding for assistive technologies through budget proposals, grant applications, and partnerships with local government units and non-government organizations, alongside a classroom level audit of technology infrastructure that prioritizes repairs, upgrades, and equitable distribution of reliable resources across all inclusive classrooms. Campado et al. (2023) and Calumpang (2025) underscore the inadequacy of funding for assistive technology as a primary challenge for educators supporting learners with special educational needs, often leading to limitations in effectively utilizing technological tools, consistent with the facilitating conditions data reported here.

For Behavioral Intentions, indicator means ranged from 4.55 to 4.26, with all four indicators interpreted as Strongly Agree. The highest rated indicator was the intention to seek more training on Special Educational Needs technologies, with a mean of 4.55 and a standard deviation of 0.57, followed by the plan to recommend technology tools to peers, with a mean of 4.36 and a standard deviation of 0.59, the intention to use technology routinely for Special Educational Needs inclusion, with a mean of 4.26 and a standard deviation of 0.68, and the belief that technology integration fits the respondent's teaching philosophy, with a mean of

4.28 and a standard deviation of 0.66. The aggregate mean for Behavioral Intentions was 4.36, with a standard deviation of 0.63, interpreted as Strongly Agree. Teachers therefore hold a very strong behavioral intention to integrate technology for learners with Special Educational Needs, with the highest rating for seeking more training indicating a growth oriented mindset and recognition of current skill gaps, while the strong intention to recommend tools to peers suggests a collaborative school culture with potential for peer led initiatives. This implies that the action plan should prioritize offering accessible, relevant, and certified training programs on assistive and instructional technologies, and that formal peer mentorship or technology champion networks should be established, leveraging teachers' natural inclination to share resources and strategies, alongside implementation supports such as scheduled technology integration time and classroom based coaching to translate strong intentions into sustained behavior. Hachmann (2023) found a significant relationship between teachers' inclusive practices and their behavioral intentions, emphasizing that perceived usefulness and ease of use are critical drivers of technology adoption in special education contexts, aligning with the strong behavioral intentions observed in this study.

For Use Behavior, indicator means ranged from 4.15 to 4.02, with all three indicators interpreted as Agree. The highest rated indicator was current daily or weekly use of technology for Special Educational Needs, with a mean of 4.15 and a standard deviation of 0.60, while two indicators tied at the lowest mean of 4.02: the anticipation that technology frequency will increase in the next semester, with a standard deviation of 0.64, and the application of multiple technology types such as applications and devices, with a standard deviation of 0.60. The aggregate mean for Use Behavior was 4.06, with a standard deviation of 0.61, interpreted as Agree. Teachers therefore report actual use of technology for learners with Special Educational Needs at a moderate level, falling short of the Strongly Agree range, and the most critical finding at this stage is the intention behavior gap, wherein the aggregate mean for Behavioral Intentions at 4.36 substantially exceeds the aggregate mean for Use Behavior at 4.06, indicating that teachers tend to rely on a limited repertoire of tools rather than diversifying across different assistive technologies. This implies that the action plan must move beyond fostering positive attitudes toward implementing concrete strategies that enable and sustain actual technology use, with professional development explicitly exposing teachers to a wider range of assistive tools, including text to speech, speech to text, augmentative and alternative communication devices, adaptive keyboards, and screen readers, alongside guided practice in matching specific technologies to specific conditions associated with Special Educational Needs. Fteiha et al. (2025) observed that moderate technology use prevails despite positive attitudes and knowledge, indicating a potential disconnect between intent and implementation, a phenomenon that requires targeted implementation support strategies and that is clearly mirrored in the intention behavior gap identified in this study.

Taken together, the summary of the six Unified Theory of Acceptance and Use of Technology constructs shows that Performance Expectancy, with a mean of 4.48 and a standard deviation of 0.59, and Behavioral Intentions, with a mean of 4.36 and a standard deviation of 0.63, are both rated Strongly Agree, while Effort Expectancy, with a mean of 4.14 and a standard deviation of 0.71, Use Behavior, with a mean of 4.06 and a standard deviation of 0.61, Social Influence, with a mean of 4.05 and a standard deviation of 0.77, and Facilitating Conditions, with a mean of 4.00 and a standard deviation of 0.79, are all rated Agree. The overall aggregate mean across all six constructs was 4.18, with a standard deviation of 0.68, interpreted as Agree, falling just 0.03 points below the threshold for Strongly Agree. This pattern reveals that teachers demonstrate a generally positive but differentiated pattern of technology acceptance, with the highest rated constructs relating to internal beliefs and intentions, while the lowest rated constructs relate to external support and

actual practice, and the intention behavior gap between Behavioral Intentions at 4.36 and Use Behavior at 4.06 suggests that teachers are motivated but face barriers that prevent intentions from translating into sustained use, with the lowest rated construct, Facilitating Conditions at 4.00, pointing to persistent environmental and resource constraints. This implies that the action plan must adopt a differentiated intervention strategy in which persuasion campaigns are deprioritized, given the already high levels of Performance Expectancy and Behavioral Intentions, in favor of efforts that focus on removing barriers, particularly within Facilitating Conditions, while the gap between Behavioral Intentions and Use Behavior requires implementation supports such as action planning, peer coaching, and classroom based follow up. Alhwaiti (2024) and Suson (2025) found that performance expectancy and attitude are primary drivers of behavioral intention in technology adoption, often outweighing social or habitual influences, while facilitating conditions remain the weakest construct in Unified Theory of Acceptance and Use of Technology studies in educational settings, a pattern precisely replicated in the present findings.

Level of accessibility and instructional support provided to learners with Special Educational Needs through technological integration

All ten indicators measuring the level of accessibility and instructional support provided to learners with Special Educational Needs through technological integration were rated Strongly Agree, with means ranging from 4.47 down to 4.26. Four indicators tied at the highest mean of 4.47: technology supports communication for learners with speech or language difficulties, with a standard deviation of 0.58, technology supports differentiated instruction for learners with Special Educational Needs, with a standard deviation of 0.54, digital tools help monitor the progress of learners with Special Educational Needs, with a standard deviation of 0.58, and the use of technology improves overall classroom inclusivity, with a standard deviation of 0.54. The lowest rated indicator was that learners with Special Educational Needs can participate equally in class activities through technology, with a mean of 4.26 and a standard deviation of 0.59. Other indicators included technology helping learners with Special Educational Needs access instructional materials independently, with a mean of 4.40 and a standard deviation of 0.60, assistive tools reducing learning barriers in the classroom, with a mean of 4.30 and a standard deviation of 0.61, digital content being adapted to meet the specific needs of learners with Special Educational Needs, with a mean of 4.42 and a standard deviation of 0.57, technology enhancing collaboration between teachers, parents, and specialists, with a mean of 4.40 and a standard deviation of 0.57, and technology strengthening learners' motivation and confidence, with a mean of 4.40 and a standard deviation of 0.60. The overall aggregate mean was 4.41, with a standard deviation of 0.58, interpreted as Strongly Agree. Teachers therefore perceive a very high level of accessibility and instructional support provided to learners with Special Educational Needs through technology, with the highest ratings highlighting that technology is seen as particularly effective for communication, differentiated instruction, progress monitoring, and inclusivity, while the lowest rated indicator, concerning equal participation, suggests that technology has not yet fully closed the participation gap between learners with Special Educational Needs and their typically developing peers. This implies that the action plan should focus on equitable participation strategies, such as training teachers on Universal Design for Learning principles, implementing peer assisted technology supported activities, and selecting assistive tools that promote active rather than passive engagement, while the strong consensus regarding technology's role in communication and progress monitoring suggests that these areas can be leveraged and systematized further. Khasawneh (2024) found

that technology can significantly improve student engagement, personalize education, and enhance communication skills for students with special needs, though equal participation remains an ongoing challenge requiring targeted strategies, a conclusion that aligns closely with the findings of this study.

Extent of utilization of assistive and instructional technologies by teachers in inclusive classrooms in terms of frequency, type, and purpose

Across the fifteen indicators measuring the extent of utilization of assistive and instructional technologies, means ranged from 4.53 down to 3.77, with the overall aggregate mean of 4.22, standard deviation of 0.80, interpreted as Always. The highest rated indicators concerned general instructional purposes, namely using technology to support individualized instruction, with a mean of 4.53 and a standard deviation of 0.64, using technology to increase learner engagement and motivation, with a mean of 4.51 and a standard deviation of 0.75, using technology to improve learners' understanding of lessons, with a mean of 4.49 and a standard deviation of 0.64, using multimedia tools such as videos and interactive presentations, with a mean of 4.45 and a standard deviation of 0.70, and using technology to monitor and assess learner progress, with a mean of 4.43 and a standard deviation of 0.80. In contrast, the lowest rated indicators concerned specialized assistive technologies, namely the use of assistive software such as text to speech and speech to text, with a mean of 3.77 and a standard deviation of 0.93, and the use of specialized devices such as screen readers and adaptive keyboards, with a mean of 3.79 and a standard deviation of 1.08, both interpreted as Often rather than Always. Additional indicators included daily use of technology in the inclusive classroom, with a mean of 4.34 and a standard deviation of 0.73, incorporating assistive technologies during lesson delivery, with a mean of 4.26 and a standard deviation of 0.71, using digital tools when assessing learners with Special Educational Needs, with a mean of 4.02 and a standard deviation of 0.80, integrating technology in collaborative classroom activities, with a mean of 4.21 and a standard deviation of 0.77, using technology for remediation and intervention purposes, with a mean of 4.09 and a standard deviation of 0.86, using mobile applications designed for learners with Special Educational Needs, with a mean of 3.98 and a standard deviation of 0.89, using learning management systems or online platforms, with a mean of 4.06 and a standard deviation of 0.97, and using technology to enhance communication with learners with Special Educational Needs, with a mean of 4.38 and a standard deviation of 0.77. These results indicate that teachers use general technology tools frequently for whole class instruction and engagement, but are less likely to deploy targeted assistive technologies designed specifically for learners with Special Educational Needs, and the notably high standard deviations for specialized devices at 1.08 and assistive software at 0.93 indicate substantial variability across teachers, with some using these tools regularly while others rarely or never do so. This implies that the action plan must prioritize training, resource allocation, and support specifically for assistive technologies, including a school wide inventory and procurement of essential assistive technologies such as text to speech software, speech to text tools, screen readers, adaptive keyboards, and augmentative communication devices, with competency based professional development focused on matching assistive tools to specific conditions associated with Special Educational Needs. Mukhtarkyzy et al. (2025) and Párraga et al. (2025) found that assistive technologies are pivotal in cultivating inclusive teaching practices, yet their application often remains inconsistent due to limited teacher training and resource availability, a conclusion strongly reflected in the disparity observed between general and specialized technology use among the respondents of this study.

Significant relationships among variables

To determine the significant relationship between teachers' acceptance and utilization of technology and the level of accessibility and instructional support for learners with Special Educational Needs, the Pearson product moment correlation coefficient was computed between each of the six Unified Theory of Acceptance and Use of Technology constructs and the overall accessibility and instructional support variable, with the null hypothesis tested at the 0.05 level of significance. The results show that Performance Expectancy yielded an r value of 0.556 with a p value of 0.000, Effort Expectancy yielded an r value of 0.636 with a p value of 0.000, Social Influence yielded an r value of 0.667 with a p value of 0.000, Facilitating Conditions yielded an r value of 0.496 with a p value of 0.000, Behavioral Intentions yielded an r value of 0.726 with a p value of 0.000, and Use Behavior yielded an r value of 0.601 with a p value of 0.000. For all six constructs, the null hypothesis was rejected, and the relationship was interpreted as significant. Behavioral Intentions therefore shows the strongest correlation at 0.726, followed by Social Influence at 0.667, Effort Expectancy at 0.636, Use Behavior at 0.601, Performance Expectancy at 0.556, and Facilitating Conditions at 0.496, indicating that teachers' technology acceptance across all Unified Theory of Acceptance and Use of Technology dimensions is positively associated with perceived accessibility and instructional support for learners with Special Educational Needs, with Behavioral Intentions emerging as the strongest predictor, suggesting that teachers who express stronger commitment to using technology are most likely to perceive high accessibility outcomes, while Facilitating Conditions shows the weakest correlation, suggesting that resource availability alone does not guarantee accessibility without accompanying strong intentions and social influence. This implies that the action plan must adopt a holistic approach targeting all six dimensions, with interventions aimed at strengthening behavioral intentions, such as goal setting workshops, implementation intention exercises, and recognition for technology integration, yielding the greatest impact, while resource provisioning must be accompanied by user friendly training, simplified workflows, and visible administrative advocacy. Alhwaiti (2024) and Zraydi et al. (2026) found that behavioral intention is a critical predictor of technology adoption in inclusive settings, while facilitating conditions, though important, show weaker direct effects on outcomes, a finding entirely consistent with the correlation results obtained in this study.

To determine the significant relationship between the level of accessibility and instructional support for learners with Special Educational Needs and the extent of utilization of assistive and instructional technologies by teachers in inclusive classrooms, the Pearson product moment correlation coefficient was likewise computed, again with the null hypothesis tested at the 0.05 level of significance. The results reveal a significant positive correlation between the two variables, with an r value of 0.632 and a p value of 0.000, leading to the rejection of the null hypothesis and an interpretation of significant relationship. This moderate to strong positive relationship indicates that as teachers report higher levels of accessibility and instructional support for learners with Special Educational Needs, they also report greater frequency and variety of assistive technology use, suggesting that accessibility and utilization function as mutually reinforcing constructs, such that when technology successfully supports learners with Special Educational Needs, teachers become more motivated and confident to utilize a wider range of assistive tools. This implies that the action plan must treat accessibility and utilization as interconnected rather than separate targets, since interventions designed to enhance teachers' utilization of assistive technologies will concurrently improve accessibility outcomes, and vice versa, meaning that professional development, resource allocation, and administrative support must simultaneously target

increasing utilization and enhancing accessibility in order to leverage their reciprocal relationship for sustained improvement. Akbar et al. (2023) and Navas Bonilla et al. (2025) found that effective deployment of assistive and instructional technologies hinges upon robust infrastructural support and pedagogical guidance, enabling teachers to integrate these tools purposefully into their instructional strategies for learners with Special Educational Needs, a conclusion that reinforces the significant relationship identified between accessibility and utilization in the present study.

In summary, the findings of this chapter demonstrate that the 53 teacher respondents of Minglanilla Central Elementary School are predominantly experienced, female educators who hold generally positive perceptions of technology's usefulness and express strong behavioral intentions to integrate technology for learners with Special Educational Needs, as reflected in an overall Unified Theory of Acceptance and Use of Technology aggregate mean of 4.18, yet these positive attitudes and intentions are not fully matched by actual use behavior or by the facilitating conditions available within the school, as evidenced by the lower aggregate means of 4.06 and 4.00 respectively. Teachers likewise perceive a strongly favorable level of accessibility and instructional support for learners with Special Educational Needs through technology, with an aggregate mean of 4.41, although equal participation in classroom activities remains the comparatively weaker dimension, and while general instructional technologies are used consistently, specialized assistive tools and devices remain underutilized relative to broader digital resources, as shown by the extent of utilization aggregate mean of 4.22 alongside the notably lower means for assistive software and specialized devices. The inferential analyses further confirm that all dimensions of technology acceptance are significantly and positively correlated with accessibility and instructional support outcomes, with correlation coefficients ranging from 0.496 to 0.726, all significant at p equals 0.000, and that accessibility and instructional support are themselves significantly correlated with the extent of assistive technology utilization, with a correlation coefficient of 0.632 at p equals 0.000. Taken together, these findings directly address the objectives of the study by establishing that teacher readiness, positive acceptance, and strong behavioral intention are present within the school, but that gaps in facilitating conditions, specialized training, and actual use behavior constitute the primary barriers to fully realizing accessible and inclusive technology integration for learners with Special Educational Needs. These results contribute meaningfully to the broader field of inclusive education and educational technology by empirically demonstrating the interconnected and reciprocal nature of technology acceptance, accessibility, and utilization within a Philippine public elementary school context, and they provide an empirically grounded foundation for the proposed action plan to be presented in the subsequent chapter, which will translate these findings into concrete, prioritized interventions addressing facilitating conditions, specialized assistive technology training, and sustained implementation support.

CONCLUSION

The findings of this study, taken together, affirm that technological integration in inclusive classrooms at Minglanilla Central Elementary School during the 2025-2026 school year is shaped by a complex interplay of teacher readiness, institutional support, and the specific demands of educating learners with Special Educational Needs. The teacher-respondents, predominantly female, experienced, and holding advanced academic units, demonstrated a generally positive disposition toward the acceptance and use of technology, as reflected in consistently high ratings for performance expectancy and behavioral intentions. This suggests that teachers strongly believe in the value of technology for improving instruction and express clear willingness to incorporate it into their teaching

practices. However, this optimism did not fully translate into consistent classroom practice, as actual use behavior remained comparatively moderate. This gap between intention and action points to underlying constraints, most notably inadequate facilitating conditions such as limited budgets for assistive tools and unreliable infrastructure, which continue to hinder teachers from converting their positive attitudes into sustained and effective technology use.

Beyond the matter of acceptance and use, the study also revealed that the accessibility and instructional support extended to SEN learners through technology were generally perceived as high, particularly in areas such as communication support, differentiated instruction, and progress monitoring. Despite this encouraging outcome, a notable gap persisted in ensuring the equal participation of SEN learners in classroom activities, indicating that while technology has enhanced several dimensions of inclusive instruction, it has not yet fully bridged the participatory divide experienced by these learners. Compounding this concern is the pattern observed in the extent of technology utilization, where general instructional tools were used frequently and effectively, yet specialized assistive technologies, including text-to-speech software, screen readers, and adaptive keyboards, were employed only occasionally. This disparity underscores a critical area of development, as the very tools designed to directly support SEN learners remain underutilized relative to more general instructional technologies.

Importantly, the statistical relationships established in this study lend empirical weight to these observations. The significant positive correlations between teachers' technology acceptance and accessibility outcomes, as well as between accessibility and the broader extent of technology utilization, confirm that improvements in one area meaningfully influence the other. In other words, strengthening teachers' acceptance of technology can be expected to enhance accessibility for SEN learners, while greater utilization of assistive technologies can further improve the instructional support these learners receive. These interconnected findings collectively highlight the necessity of a comprehensive and coordinated response, one that addresses gaps in facilitating conditions, expands specialized assistive technology training, and actively works to close the intention-behavior gap so that teachers' strong willingness to use technology is more fully realized in actual classroom practice.

In light of these findings, the researcher strongly recommends the implementation of the proposed action plan, Project ASSIST: Action Plan for Strengthening Special Education Support through Instructional and Assistive Technologies, as a direct and responsive measure to the gaps identified in the study. This plan is intended to address the low level of facilitating conditions, particularly the budget constraints affecting assistive tools, the limited use of specialized assistive software and devices, and the disparity between teachers' strong behavioral intentions and their actual use behavior. It likewise responds to the inadequacies in internet connectivity and projector or Smart TV access, as well as the considerable proportion of teachers who have not yet undergone training in special education. Through targeted strategies encompassing infrastructure and resource procurement, competency-based professional development, the establishment of assistive technology lending libraries, peer mentorship networks, parent engagement initiatives, and robust monitoring and evaluation systems, the action plan offers a holistic pathway toward strengthening inclusive education practices. School administrators are therefore encouraged to allocate dedicated budget lines for assistive technologies and to pursue partnerships with local government units and non-government organizations to secure sustainable funding, while also investing in the capacity-building of master teachers as technology integration coaches. At the policy level, the Department of Education is encouraged to draw upon the findings of this study in shaping standards for assistive technology and teacher training requirements within inclusive

education programs. Finally, future researchers are urged to pursue longitudinal studies examining the implementation and long-term impact of the action plan, to undertake qualitative investigations into teachers' lived experiences with assistive technology integration, and to expand the scope of research across multiple schools in order to validate and broaden the generalizability of these findings. Taken as a whole, these conclusions and recommendations affirm that while meaningful progress has been made in fostering teacher acceptance and instructional accessibility for SEN learners, sustained institutional commitment and targeted intervention remain essential to fully realize the transformative potential of technological integration in inclusive classrooms.

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