

**Integrating technology in inclusive classrooms to improve accessibility
for learners with Special Educational Needs (SEN)**

Khate Sherney A. Canoy*

Cebu Technological University-Main Campus, Cebu City, Cebu, Philippines

ABSTRACT

The success of technology in inclusive classrooms hinges on teacher acceptance and use. This study aimed to determine 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 Intellectual Development for Early Age School (IDEAS), Talisay City, Cebu, during the school year 2025–2026 as a basis for an action plan. Utilizing a descriptive-correlational research design, data were gathered from 30 teachers through a validated questionnaire adapted from the Unified Theory of Acceptance and Use of Technology (UTAUT). Descriptive and inferential statistics were employed for data analysis. The findings revealed that teachers demonstrated high performance expectancy and behavioral intentions, but lower facilitating conditions and use behavior. Assistive software utilization and specialized device utilization were rated lower compared to general multimedia tools. Significant positive relationships were established between all UTAUT dimensions and accessibility outcomes, with performance expectancy showing the strongest correlation ($r = 0.756$, $p = 0.000$). A moderate to strong correlation was also found between technology utilization and instructional support ($r = 0.652$, $p = 0.000$). The null hypotheses were rejected for all relationships at 0.05 level of significance. An evidence-based action plan was formulated to address identified gaps, including strengthening facilitating conditions through responsive technical support and dedicated budget allocation for SEN assistive tools, bridging the intention-behavior gap, and enhancing specialized assistive technology utilization through targeted professional development.

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

Date Submitted: August 24, 2026

Date Accepted: September 2, 2026

Date Published: September 15, 2026

INTRODUCTION

Technology has increasingly become a central strategy for addressing the diverse learning needs of students with Special Educational Needs (SEN) within inclusive education. Its integration seeks to reduce barriers to participation, improve accessibility, and enhance

*Corresponding author / Email: khatesherney143@@gmail.com

DOI: <http://doi.org/10.69651/PIJHSS05031528>

Recommended citation:

Canoy, K. S. A. (2026). Integrating technology in inclusive classrooms to improve accessibility for learners with Special Educational Needs (SEN). *Pantao (International Journal of the Humanities and Social Sciences)* 5 (3), 4138-4169. <http://doi.org/10.69651/PIJHSS05031528>

learning outcomes through adaptive content and personalized educational experiences (Simos & Katsiampoura, 2025; Layachi & Pitchford, 2024). Technological interventions such as assistive technologies, including screen readers and alternative keyboards, as well as artificial intelligence and learning analytics, can provide learners with more equitable access to educational materials while enabling teachers to customize pedagogical approaches according to individual learner profiles (Navas-Bonilla et al., 2025; Wulandari et al., 2024). Artificial intelligence further expands these possibilities by allowing instruction to respond to individual requirements, facilitate personalized learning experiences, and provide tailored support to students with diverse needs (Mpu, 2023). Such personalization is particularly relevant for learners who require differentiated instruction because it can contribute to improved academic performance, greater engagement, and stronger social interaction within inclusive classroom environments (Fitas, 2025).

The growing recognition of these benefits has contributed to increased global research on the relationship between technology and special education, particularly on the capacity of technology to improve accessibility for students with disabilities (Chanthiran et al., 2025). Artificial intelligence has been incorporated into adaptive learning platforms and intelligent tutoring systems that respond to individualized learning patterns, thereby offering opportunities to improve engagement and retention among learners with special needs (Li et al., 2025). Similarly, investigations of artificial intelligence applications in inclusive education in contexts such as Japan demonstrate how learning logs can facilitate the detection and visualization of specific learning behaviors and support more efficient and appropriate reflection on learning processes (Toyokawa et al., 2023). These developments reflect broader global perspectives that regard technology as potentially transformative because of its capacity to make education more personalized and responsive to diverse student populations (Santos et al., 2024).

Despite these advances, technological availability does not automatically translate into meaningful or equitable integration. Persistent challenges involve consistent technology use, teacher preparedness, resource availability, and equitable access to appropriate technological infrastructure (Damyantov, 2024; Polat et al., 2024). Difficulties such as device shortages, inadequate teacher training, and learner behavioral concerns can limit effective implementation even when appropriate technologies are available (Campado et al., 2023). Consequently, teachers occupy a central position in determining whether technological innovations become meaningful instructional resources. The effectiveness of technology integrated instruction is strongly influenced by teachers' perceptions and their capacity to identify and employ appropriate technological tools in response to varied learning needs (Walia & Guha, 2025). Examining teachers' perceptions, acceptance, and actual use of technology is therefore essential because these factors substantially influence whether technological interventions can be successfully implemented in inclusive classrooms (Karagianni & Drigas, 2023).

These concerns are particularly significant in the Philippine context, where a strong commitment to inclusive education exists alongside continuing difficulties involving infrastructure, resources, and technology integration. Such conditions reveal a gap between national aspirations for inclusion and their practical implementation in schools (Celeste & Osias, 2024). Filipino teachers frequently encounter resource constraints and structural barriers when teaching in inclusive classrooms, although they also demonstrate resilience and employ innovative strategies to support learners with special educational needs (Castalone et al., 2026). Teachers generally express positive attitudes toward inclusive education, yet many report inadequate training and institutional support, creating uncertainty regarding whether existing practices consistently correspond with accepted standards of high quality inclusive education (Vistar et al., 2024). These findings indicate that favorable attitudes toward inclusion alone are insufficient when teachers lack the resources, competencies, and institutional conditions required to translate those attitudes into effective practice.

The challenge is intensified by persistent disparities in access to digital technologies. In rural and under resourced settings, limited availability of hardware, software, and reliable internet infrastructure restricts technology adoption despite teachers' optimism regarding its educational potential (Co, 2025; Moraleda et al., 2025; Villarino, 2024). This condition contributes to a digital divide in artificial intelligence access and implementation that may reinforce existing academic inequities unless technological integration is accompanied by deliberate inquiry, equitable resource provision, and strategic implementation (Co, 2025). The problem also involves teacher preparedness. Although many educators recognize the potential value of artificial intelligence, they often feel insufficiently prepared to integrate advanced technologies effectively into their instructional practices (Adewale et al., 2024; Doria, 2024). In Philippine public school contexts, this concern is further associated with inadequate training, limited exposure to evidence based instructional strategies, inconsistent internet access, and insufficient availability of necessary devices (Blando, 2025; Kunjiapu et al., 2025). The capacity gap becomes particularly evident in artificial intelligence integration, where many teachers and students in under resourced educational settings, including Intellectual Development for Early Age School (IDEAS), have limited exposure to or familiarity with artificial intelligence tools (Venzon & Venzon, 2025).

These national and international concerns acquire particular significance within IDEAS because of the diversity of learners with SEN served by the school and the limited localized empirical evidence concerning assistive technology implementation in private inclusive schools in Cebu. The SEN population at IDEAS includes learners diagnosed with Autism Spectrum Disorder (ASD), Attention Deficit Hyperactivity Disorder (ADHD), speech or language impairments, intellectual disabilities, and specific learning disabilities such as dyslexia. Teachers must therefore respond simultaneously to learners with different cognitive, communicative, behavioral, and instructional profiles. Such diversity requires more than broad classroom accommodations because different learner needs may require specific technological responses. Augmentative and alternative communication applications, for example, may support learners who do not communicate verbally, while text to speech software may assist learners experiencing reading difficulties and visual scheduling technologies may provide structure for learners with autism. The educational value of technology in this setting consequently depends not merely on whether technology is present, but on whether appropriate tools are selected and meaningfully aligned with the particular accessibility and instructional barriers experienced by different groups of SEN learners.

The absence of localized empirical evidence concerning teachers' perceptions, acceptance, and actual use of these technologies for specific disability categories creates an important practical and research gap. Without such evidence, schools risk adopting generic technological solutions that may not adequately respond to the particular needs of individual SEN subgroups. Existing literature establishes the potential of technology to support inclusion, yet the recurring concerns surrounding infrastructure, teacher preparedness, contextual suitability, and implementation demonstrate that technological effectiveness cannot simply be assumed. Localized investigation is therefore necessary to determine how teachers experience technology integration and whether available technologies provide meaningful accessibility and instructional support within particular educational settings such as IDEAS (Gonzaga et al., 2024; Tagyamon et al., 2025). Evidence from such studies can guide the development of contextually responsive interventions and professional development programs that address the specific challenges teachers encounter when integrating technology for SEN learners, thereby helping ensure that technological innovation produces concrete improvements in educational practice and learner outcomes.

Understanding these contextual issues requires a theoretical perspective capable of explaining both teachers' individual acceptance of technology and the broader organizational processes through which technological innovations become established in educational settings. Accordingly, the study is primarily anchored on the Unified Theory of Acceptance and Use of Technology (UTAUT), developed by Venkatesh, Morris, Davis, and Davis (2003). UTAUT identifies performance expectancy, effort expectancy, social influence, and facilitating conditions as major determinants of technology acceptance and use (Khasawneh, 2024). Applied to inclusive education, the framework provides a means of examining how teachers' perceptions of technological usefulness, ease of use, peer and social influence, and organizational support affect their behavioral intentions and actual utilization of technology in classroom practice (Kheng & Rusli, 2025). Its inclusion of behavioral intention and use behavior provides a comprehensive lens for examining the relationship between technological integration and the benefits that teachers perceive technology to offer learners with SEN (Alegre, 2023). Through this perspective, teacher acceptance and technology utilization can be examined not as isolated behaviors but as outcomes shaped by interacting personal, technological, and institutional conditions (Alhwaiti, 2024).

UTAUT is especially appropriate to the IDEAS context because it permits detailed examination of factors that facilitate or constrain technology integration in special education while responding to an identified gap in research that has frequently emphasized learners rather than teachers' experiences (Catoto & Mantawil, 2023). Teachers' capacity to use technology effectively is also related to competencies associated with Technological Pedagogical Content Knowledge, which emphasizes the interaction among technological proficiency, pedagogical knowledge, and content knowledge in instructional decision making (Alarba, 2023). From this perspective, effective technological integration requires more than technical familiarity. It involves the ability to determine how a particular technological resource can support appropriate pedagogical practices and specific learning objectives for learners with diverse needs. The convergence of UTAUT and teacher competency perspectives therefore provides a more nuanced understanding of how pedagogical beliefs, technological proficiency, content knowledge, and organizational conditions jointly influence technology use in inclusive classrooms.

The theoretical orientation of the study also corresponds with broader international priorities concerning equitable educational opportunities for learners with special educational needs (Salvaña & Protacio, 2025; Savior et al., 2025). International discussions on inclusive education increasingly emphasize the need to use technological advancements to overcome barriers to participation and learning among SEN students (Zawawi & Hashim, 2024). However, realizing this potential requires attention to contextual influences such as peer support, institutional resources, and organizational conditions because these factors can substantially shape educators' decisions to adopt and sustain technological practices (Dalyanci et al., 2025; Setiawan & Kusumadewi, 2023). Thus, technology integration must be understood as both an individual process of acceptance and an organizational process that occurs within a particular social and institutional environment.

To account for this organizational dimension, the study also draws on the Diffusion of Innovations (DOI) Theory of Everett Rogers (1962). While UTAUT explains individual and organizational factors affecting teachers' intentions and decisions to adopt technology, DOI provides a complementary explanation of how new educational technologies are communicated, disseminated, and adopted within the social system of IDEAS, including the influence of leadership support and policy clarity (Fteiha et al., 2025). Integrating these theoretical perspectives enables a broader investigation of the multiple dynamics underlying technology integration in inclusive classrooms and provides a foundation for evidence based interventions and policy recommendations (Khotimah et al., 2025; Mekheimer, 2025; Wohlfart

& Wagner, 2024). Together, these frameworks allow the study to identify facilitators and inhibitors of technology adoption among teachers while supporting the development of an action plan that is theoretically grounded and responsive to the particular context of IDEAS. This approach also addresses the continuing need for specific information and communication technology integration models for inclusive education, particularly because existing models often provide insufficient descriptions of pedagogical practices and may overlook broader systemic inequities affecting implementation (Machkour et al., 2023; Niu & Niranjan, 2025).

The theoretical foundations of the study are reinforced by Philippine legal and policy frameworks that promote equitable access to education through technology, teacher preparation, and inclusive educational services. Republic Act No. 11650 (2022), known as the Inclusive Education Act of 2022, mandates the establishment of Inclusive Learning Resource Centers (ILRCs) in school districts to facilitate the inclusion of SEN learners in general education. The law requires the Department of Education (DepEd) to formulate policies concerning learning delivery modalities, including distance education and the preparation of teachers who handle learners with SEN, while strengthening educators' capacities to provide appropriate interventions using available resources and technologies. These provisions directly support technological integration by emphasizing assistive resources and teacher preparation, which correspond with the UTAUT constructs of performance expectancy and facilitating conditions (Republic of the Philippines, 2022). Scholarly analysis of Republic Act No. 11650 further emphasizes its potential to address gaps between inclusive education policy and implementation through teacher training, special needs education licensure examinations, and Centers of Excellence in Metro Cebu. At the same time, the literature indicates that the law's intended benefits depend on adequate funding and teacher readiness if technology is to produce meaningful accessibility improvements for SEN learners (Gomez et al., 2025).

More recent educational policy further strengthens the relevance of technology to inclusive instruction. DepEd Order No. 13, series of 2025, supports the responsible and strategic integration of artificial intelligence into basic and secondary education and includes applications relevant to inclusive practices for SEN learners. The policy recognizes the potential use of artificial intelligence in decision making, resource planning, and service delivery, including the expansion of special education resources through ILRCs and virtual platforms capable of supporting personalized learning. These provisions correspond with constructs such as effort expectancy, facilitating conditions, and use behavior because they establish institutional support for artificial intelligence applications in early disability screening and instructional assistance (Department of Education, 2025). Related initiatives, including DepEd's SABAY Project and the Education Center for AI Research (E CAIR), demonstrate efforts to automate assessments and enhance teacher training through artificial intelligence applications relevant to SEN inclusion. Such approaches may strengthen teachers' behavioral intentions to use technology by providing scalable and accessible resources that can be adapted to diverse learner needs (Angara, 2025).

Earlier policy responses also established foundations for flexible technology supported learning among learners with disabilities. DepEd Memorandum No. 203, series of 2020, provides guidelines for implementing curricula for learners with disabilities during crises and permits flexible use of digital modalities according to Individualized Education Plans (IEPs). Through online tools, modular instruction, adaptive strategies, and the unpacking of competencies, the policy supports flexible instructional responses to individual learner needs and reinforces conditions associated with social influence and performance expectancy in technology utilization for SEN education (Department of Education, 2020). Subsequent developments have continued to emphasize digital accessibility. A UNESCO case study on

educational technology in the Philippines documents the development of digital approaches within the Alternative Learning System to reach learners who experienced barriers to educational access during the COVID 19 pandemic and calls for continued investment in assistive technologies to strengthen instructional support (UNESCO, 2023). These developments reinforce the relevance of UTAUT by demonstrating how institutional policies, technological resources, and organizational support can influence teachers' opportunities and willingness to adopt technology in inclusive educational environments.

Taken together, the literature, theoretical perspectives, and Philippine policy environment indicate that successful technology integration for SEN learners depends on the interaction of technological capability, teacher acceptance, professional competence, organizational support, resource accessibility, and institutional diffusion. Existing research demonstrates substantial potential for assistive technologies and artificial intelligence to improve personalization, accessibility, engagement, and instructional support, but it simultaneously identifies persistent limitations involving teacher readiness, resource inequities, infrastructure, and contextual appropriateness. UTAUT explains how teachers' perceptions of usefulness, ease of use, social influence, and facilitating conditions influence behavioral intentions and actual technology use, while DOI situates adoption within the wider social and organizational processes through which innovations spread. Philippine legal and policy frameworks provide an additional institutional foundation by establishing national expectations concerning inclusion, technology use, teacher preparation, and equitable educational access. The convergence of these perspectives suggests that effective technological integration cannot be evaluated solely through the availability of digital tools. It must also be examined through the experiences of teachers who select, adapt, and implement those tools within specific educational contexts.

Against this background, the limited empirical evidence concerning technology integration in private inclusive schools in Cebu, particularly within IDEAS, represents a significant gap. Although previous studies have documented the promise of technology and the obstacles surrounding its implementation, insufficient localized evidence explains how teachers at IDEAS perceive, accept, and use technological resources to address the accessibility and instructional needs of learners representing diverse SEN categories. Addressing this gap is necessary because technological interventions that are effective for one learner profile may not necessarily respond to the barriers experienced by another. An empirical examination of teachers' perspectives can therefore clarify whether existing technological practices correspond with the actual needs of SEN learners and identify the personal, pedagogical, technological, and organizational factors that facilitate or constrain meaningful implementation.

Accordingly, this study investigates the level of technology integration at IDEAS and examines teachers' acceptance and utilization of technology in inclusive classrooms for the benefit of learners with SEN. Particular attention is given to teachers' perspectives concerning technology use and to the accessibility and instructional support that technological integration provides to SEN learners. Guided by UTAUT, DOI, relevant teacher competency perspectives, and Philippine inclusive education policies, the study seeks to generate empirical evidence concerning the contextual factors that shape technology adoption within a specific Philippine educational setting (Arguson et al., 2023). By examining the extent to which teachers perceive and use technological integration to enhance accessibility and instructional support, the study is expected to contribute localized evidence to the broader literature on technology and inclusive education. The findings will ultimately provide the empirical basis for an evidence-based action plan and targeted professional development initiatives designed to strengthen teaching practices, technological resources, and inclusive educational provision for learners with SEN at IDEAS.

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 Intellectual Development for Early Age School (IDEAS), Talisay City, 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 Intellectual Development for Early Age School (IDEAS), Talisay City, 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 (1) teachers' acceptance and utilization of technology and the level of accessibility and instructional support for learners with SEN, and (2) 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. The descriptive-correlational design was appropriate for this study as it allowed the researcher to collect data on multiple variables without manipulating any conditions, providing a realistic snapshot of existing practices and perceptions at Intellectual Development for Early Age School (IDEAS). This design enabled the identification of patterns, trends, and associations among the variables, which served as the empirical basis for proposing an evidence-based action plan.

The procedure of the study followed the Input–Process–Output (IPO) model, which is illustrated in Figure 2 as the flow of the study and which clearly presents the systematic procedure undertaken. The input consisted of the primary data gathered from 46 teacher-respondents at Intellectual Development for Early Age School (IDEAS), Talisay City, Cebu during the School Year 2025–2026. Specifically, the input included: (1) 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; (2) 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; (3) the level of accessibility and instructional support provided to learners with Special Educational Needs (SEN) through technological integration; (4) the extent of utilization of assistive and instructional technologies by teachers in terms of frequency and purpose; and (5) 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.

The process involved a series of sequential steps. First, the researcher secured approval by submitting a transmittal letter to the Schools Division Office of Cebu Province and the school principal of Intellectual Development for Early Age School (IDEAS). Second, the researcher distributed adapted and validated survey questionnaires to all 30 teacher-respondents handling inclusive classrooms. Third, the researcher retrieved the completed questionnaires and checked them for completeness and consistency. Fourth, the researcher applied statistical treatment using descriptive statistics (frequency, percentage, mean, standard deviation) to answer the descriptive research questions and inferential statistics (Pearson product-moment correlation coefficient) to test the null hypotheses at 0.05 level of significance. Fifth, the researcher analyzed and interpreted the statistical outputs, relating the findings to the Unified Theory of Acceptance and Use of Technology (UTAUT) framework and existing literature. Finally, the researcher formulated an evidence-based action plan based on the findings.

The output of this study was a comprehensive, evidence-based action plan designed to enhance technological integration in inclusive classrooms at Intellectual Development for Early Age School (IDEAS). The action plan addressed the specific gaps identified in the findings, including strengthening facilitating conditions (the lowest-rated UTAUT construct at an aggregate mean of 3.97), bridging the intention-behavior gap (behavioral intentions at 4.36 versus use behavior at 4.11), and increasing the utilization of specialized assistive technologies (assistive software at 3.91 and specialized devices at 3.91) from "Often" to "Always." The action plan included targeted professional development programs, infrastructure improvements, budget allocation for SEN assistive tools, parent engagement strategies, and a monitoring and evaluation framework. This output served as a practical guide for school administrators, teachers, and the Department of Education to improve inclusive education practices through effective technological integration for learners with Special Educational Needs.

The study was conducted at Intellectual Development for Early Age School (IDEAS), a private educational institution located in Dumlog, Talisay City, Cebu, as shown in the location map of the research environment presented in Figure 3. Talisay City is a component city in the province of Cebu, situated in the Central Visayas region of the Philippines on the southeastern coast of Cebu Island, just south of Cebu City. According to the 2024 census, the city has a population of approximately 263,832 residents, making it one of the most populous component cities in the Visayas. The city spans a land area of about 39.87 square kilometers and is composed of 22 barangays. IDEAS offers programs across multiple educational levels,

including Special Education (SPED) classes, preschool, elementary, and junior high school. The current population of the school is as follows: SPED class: 37 learners and 5 teachers; Preschool: 105 learners and 6 teachers; Elementary: 232 learners and 13 teachers; Junior High: 41 learners and 6 teachers; and this results in a total of 415 learners and 30 teaching personnel across all grade levels. IDEAS does not have specialized laboratories, dedicated assistive technology centers, or adaptive infrastructure such as ramps and modified desks. In terms of technology resources, all teachers have access to laptops or computers and most have access to mobile devices and internet connectivity, but shared display technologies such as projectors or Smart TVs, and specialized assistive technologies, including text-to-speech software, speech-to-text applications, screen readers, and adaptive keyboards, are limited and often teacher-initiated or parent-donated rather than systematically provided by the institution.

The respondents of this study were the 30 teaching personnel of Intellectual Development for Early Age School (IDEAS), Talisay City, Cebu, who were involved in delivering lessons to learners in inclusive classrooms, including those with Special Educational Needs (SEN). As presented in Table 1, the distribution of the respondents by grade level was as follows: SPED, $f = 5$ (16.67%); Preschool, $f = 6$ (20.00%); Elementary, $f = 13$ (43.33%); and JHS, $f = 6$ (20.00%), for a total of 30 respondents (100.00%). A total population sampling method was employed, which was appropriate given the small and manageable population size and the study's objective of developing a context-specific action plan for the school. This approach ensured that all teachers were included, eliminating sampling error and providing a comprehensive and representative picture of the school's technology integration practices, perceptions, and challenges, which is essential for formulating targeted interventions tailored to the actual needs of the institution.

The primary instrument for this study was adapted from Venkatesh et al. (2003), which was 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. This section included 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). 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). This section consisted 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). 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. This section contained 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. 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. This section contained 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. 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: (1) relevance to the research objectives, (2) clarity and comprehensibility of the language, (3) appropriateness of the items for the target respondents, and (4) 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). 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. The pilot study was conducted with 15 teachers from a different private school in Cebu with similar characteristics to IDEAS 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. 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 stage was 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 Intellectual Development for Early Age School (IDEAS) to conduct the study within the school. The research proposal, including its objectives, significance, methodology, and ethical considerations, was presented to obtain informed consent. 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. 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 IDEAS using a total population sampling approach. Clear instructions were provided to ensure accurate and honest responses. The researcher coordinated with the school administration to schedule appropriate times for teachers to complete the questionnaires, minimizing disruption to classes. 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. 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.

Throughout these procedures, the study was conducted with strict adherence to ethical standards to protect the rights and welfare of all participants. Teachers were informed of the purpose, objectives, and procedures of the study and provided voluntary informed consent, with the option to withdraw at any time without penalty. Respondents' personal information and responses were treated with confidentiality and anonymity, and all data were securely stored 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, and it was 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. Ranking allowed 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.

The 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. The 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 (1) teachers' acceptance and utilization of technology (performance expectancy, effort expectancy, social influence, facilitating conditions, behavioral intention, and use behavior) and the level of accessibility and instructional support for learners with SEN, and (2) 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. The correlation analysis indicated both the strength and direction of the relationship between variables. Pearson- r was appropriate despite the relatively small sample size ($n=30$) because: (a) the total population sampling ensured that the entire teaching force was included, reducing sampling error; (b) the minimum sample size for Pearson correlation with a medium effect size ($r = 0.50$) and statistical power of 0.80 at $\alpha = 0.05$ is approximately 29 participants (Cohen, 1988); and (c) the use of a validated and reliable instrument with multiple items per construct enhanced the stability of the correlation estimates. 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. The weighted mean was calculated by summing the numerical responses for each indicator and dividing by the total number of respondents, providing an aggregated score for each dimension and construct.

For Part II (Technological Integration in Inclusive Classrooms) and Part III (Accessibility and Instructional Support for Learners with SEN), the mean scores were interpreted as follows. A scale of 5 with a range of 4.21–5.00 was described as Strongly Agree, indicating a very high level of agreement or effectiveness in technological integration and support for learners with SEN. A scale of 4 with a range of 3.41–4.20 was described as Agree, indicating a high level of agreement or effectiveness in technological integration and support for learners with SEN. A scale of 3 with a range of 2.61–3.40 was described as Moderately Agree, indicating a moderate level of agreement or effectiveness in technological integration and support for learners with SEN. A scale of 2 with a range of 1.81–2.60 was described as

Disagree, indicating a low level of agreement or effectiveness in technological integration and support for learners with SEN. A scale of 1 with a range of 1.00–1.80 was 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), the mean scores were interpreted as follows. A scale of 5 with a range of 4.21–5.00 was described as Always, indicating that teachers consistently and regularly utilize the technology in inclusive classrooms for learners with SEN. A scale of 4 with a range of 3.41–4.20 was described as Often, indicating that teachers frequently utilize the technology, though not on every occasion, for learners with SEN. A scale of 3 with a range of 2.61–3.40 was described as Sometimes, indicating that teachers occasionally utilize the technology for learners with SEN. A scale of 2 with a range of 1.81–2.60 was described as Rarely, indicating that teachers seldom utilize the technology for learners with SEN. A scale of 1 with a range of 1.00–1.80 was 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 30 teacher-respondents of Intellectual Development for Early Age School (IDEAS), Talisay City, Cebu, during the school year 2025-2026. The study followed a quantitative survey approach in which the teachers' responses were collected through a questionnaire covering their profile, the six constructs adapted from the Unified Theory of Acceptance and Use of Technology (UTAUT), 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 data were analyzed using frequency, percentage, rank, mean, and standard deviation as descriptive statistics, and the Pearson product-moment correlation coefficient (r) as the inferential technique, with the null hypotheses tested at the 0.05 level of significance. The discussion is grounded in the data gathered, and the results are interpreted in direct relation to the objectives of the study, namely to describe the respondents' profile, to determine their acceptance and utilization of technology, to establish the level of accessibility and instructional support for learners with SEN, to determine the extent of utilization of assistive and instructional technologies, to test the relationships among these variables, and to inform a proposed action plan.

Profile of the teacher-respondents

The age and sex distribution showed that, of the 30 teacher-respondents, 13 (43.33%) were aged 26-30 years, 11 (36.67%) were aged 21-25 years, and three (10.00%) each belonged to the 31-35 and 36-40 age brackets. In terms of sex, 29 respondents (96.67%) were female and one (3.33%) was male, and no respondent was recorded below 21 or above 40 years of age. This concentration in the 21-30 range indicates a relatively young, early to mid-career teaching force that may have grown up with digital technologies and may therefore be receptive to technology integration in inclusive classrooms. The strong female predominance mirrors the national pattern in Philippine basic education, where early childhood and special education remain female-dominated, although the absence of male respondents raises questions about gender diversity in handling learners with SEN. Studies show that demographic characteristics such as age and gender influence readiness and efficacy in using educational technology within

inclusive settings, with younger educators generally more adept at digital tools and female teachers in special education often showing high commitment to adopting new methods (Khasawneh, 2024). This presents an opportunity for technological integration and a challenge to ensure equitable professional development regardless of age or gender (Alarba, 2023). Addressing male underrepresentation requires targeted recruitment and retention strategies for a more balanced instructional team (Amoyo & Marquez, 2025), and although age may not be a definitive predictor of digital competence, younger educators often display greater fluency that can be leveraged for advanced pedagogical applications (Graván et al., 2023).

With respect to position rank, 27 respondents (90.00%) held the rank of Teacher 1, two (6.67%) were Teacher 2, and one (3.33%) was Master Teacher 1, with no respondent holding a higher rank. This highly skewed distribution is consistent with the age profile and suggests a staff composed largely of early-career teachers, a relatively flat organizational structure, a young institution, or limited promotional opportunities. The presence of only one master teacher implies that instructional leadership and mentoring capacity is concentrated in a single individual. Early-career teachers may have current pedagogical knowledge from pre-service training, including exposure to assistive technologies, yet may lack the experience and confidence to differentiate instruction for learners with SEN. Such conditions pose challenges for technology integration, and the literature points to infrastructural barriers, insufficient pedagogical preparation, and the need for targeted mentorship to build digital agency (Charles & Alshamsi, 2025). The scarcity of senior mentors underscores the importance of peer-support mechanisms such as learning action cells and of positioning experienced staff as coaches for assistive technology adoption (Knussen & Agnew, 2022).

Regarding highest educational attainment, 16 respondents (53.33%) held a Bachelor's Degree, 13 (43.33%) had Master's units, and one (3.33%) had completed a Master's Degree, while none held a Doctorate or had attainment below the bachelor's level. All respondents therefore met the minimum qualification for teaching, and the substantial share with Master's units reflects initiative toward professional development. The single Master's degree completer, however, points to possible barriers such as financial constraints, time limitations, limited institutional support, or difficulty in completing research requirements, a pattern consistent with inadequate teacher training in ICT for learners with special needs (Fernández-Batanero et al., 2022). The limited advanced credentials imply restricted capacity for evidence-based technology integration in SEN interventions, which underscores the need for non-degree professional development such as certificate courses, webinars, and university partnerships (Du & Lyublinskaya, 2022; Karagianni & Drigas, 2023). The proficiency of special education teachers in digital material design and generative AI literacy is often moderate, which strengthens the case for targeted in-service training (Azizoğlu & Çakır, 2025). This is consistent with the emphasis that professional development and training are crucial for successful inclusive education because they enhance pedagogical strategies, change attitudes, and increase self-efficacy among educators (Alarba, 2023).

In terms of years of teaching experience, 22 respondents (73.33%) had 1-3 years, five (16.67%) had 4-6 years, two (6.67%) had 7-9 years, and one (3.33%) had 10-12 years, with none having more than 12 years or less than one year. The steep decline in frequency as experience increases indicates a predominantly novice workforce, which may reflect a recently expanded school, high turnover, or limited retention of veteran teachers, and it implies a possible lack of institutional memory and seasoned mentors in inclusive practice. Young teachers may be adept with new technologies (Galván et al., 2023), but their limited pedagogical experience in differentiated instruction and in addressing diverse learning needs can hinder effective integration for learners with SEN (Kurniawati et al., 2024). Targeted professional development that bridges technological fluency and inclusive pedagogical expertise is therefore needed (Santillán et al., 2024), especially because many training

programs, even those designed for special education, lack adequate focus on integrating digital resources within inclusive pedagogies (Kheng & Rusli, 2025). Teachers who have access to technology often feel limited in its educational application for learners with SEN (Polat et al., 2024), partly because of low confidence and a limited sense of self-efficacy (D'Elia et al., 2025). Novice educators may possess digital fluency but lack the pedagogical content knowledge needed to adapt technology to complex learner profiles (Stalmach et al., 2024).

On inclusive or special education training, 18 respondents (60.00%) reported having attended such training, while 12 (40.00%) had not, and the binary data did not reveal the content, duration, or recency of the trainings. The majority exposure suggests that the school made some effort to prepare its teachers, yet the 40.00% without training represent a significant gap in an inclusive setting. Untrained teachers may rely on general pedagogy or on-the-job learning, which can lead to inconsistent instructional quality and limited ability to select appropriate assistive technologies. Such a gap affects the efficacy of inclusive education and the integration of assistive technologies (Polat et al., 2024), and it undermines teachers' ability to differentiate instruction, adapt materials, and foster self-efficacy in learners with diverse needs (D'Elia et al., 2025). Insufficient training is a significant impediment to adoption and often results in underutilization or misuse of assistive tools (Hamid et al., 2025). A lack of systematized knowledge about available programs and about how to integrate technology effectively also persists among educators (Fernández-Batanero et al., 2022), and it can lead to reliance on traditional methods rather than technological solutions that enhance accessibility (Искакова, 2023).

As to ICT competence, 18 respondents (60.00%) rated themselves Intermediate, 10 (33.33%) Basic, and two (6.67%) Advanced, and none reported having no ICT competence. Most teachers therefore appeared able to perform routine digital tasks, but very few possessed the specialized skills needed to configure assistive technologies, customize accessibility features, or train colleagues. The one-third at the basic level may struggle even with fundamental tasks, which risks excluding learners with SEN from technology-mediated instruction. Because the competence data were self-reported, they should ideally be validated through performance-based assessment. The distribution reveals a gap in pedagogical readiness for advanced solutions such as artificial intelligence and virtual reality, which are recognized for fostering personalized learning and cognitive development among learners with SEN (Karagianni & Drigas, 2023; Voultsiou & Moussiades, 2025). Limited advanced competence is a systemic impediment to integrating adaptive learning software and AI tools (Kontis et al., 2025), and it calls for professional development that goes beyond fundamental digital literacy (Santillán et al., 2024). Despite access to tools, many educators feel constrained in applying them for learners with SEN (Polat et al., 2024), a limitation exacerbated by insufficient training (Hamid et al., 2025) that hinders learning outcomes for students with disabilities (Amouri et al., 2025). The continued prevalence of basic competence further widens the digital divide for learners with SEN (Mpu, 2023).

Regarding access to technological resources, based on multiple responses, all 30 teachers (100%) had access to a laptop or computer, ranking first. Mobile devices or tablets and internet access were each reported by 26 teachers (86.67%), sharing rank 2.5, while projectors or smart TVs were reported by 18 teachers (60.00%), ranking fourth. No other resources were included in the survey. Basic hardware infrastructure is thus largely in place, and teachers are digitally connected, but whole-class display equipment is available in only just over half of the cases, which may limit activities such as visual schedules, magnified text, and shared multimedia for learners with SEN. Limited projection equipment constrains the use of visual aids for whole-class instruction and may widen the accessibility gap (Polat et al.,

2024), pushing teachers toward individualized device use rather than shared visual learning (Campado et al., 2023). The absence of classroom display technologies can impede individualized education and visual communication even when personal devices are available (Искакова, 2023). Effective digital strategies for learners with special needs are often hampered by incomplete technological ecosystems rather than a complete absence of technology, and success depends on adequate infrastructure, ongoing teacher training, and appropriate technology selection (Párraga et al., 2025). Institutional support must therefore cover both personal and shared classroom technologies (Duka et al., 2024), particularly because teachers' attitudes and willingness to integrate assistive technology are influenced by their familiarity with technology and the accessibility of classroom equipment (Karagianni & Drigas, 2023). Comprehensive support systems and continuous professional development in inclusive digital pedagogy are essential (Akhter et al., 2025; Ramírez-Solórzano & Navas, 2024).

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

Teachers' acceptance and utilization were measured through six UTAUT constructs, interpreted using the following scale: 4.21-5.00 as Strongly Agree, 3.21-4.20 as Agree, 2.61-3.40 as Moderately Agree, 1.81-2.60 as Disagree, and 1.00-1.80 as Strongly Disagree.

Performance expectancy obtained an aggregate mean of 4.67 (SD = 0.55), interpreted as Strongly Agree. The statements that technology tools enhance lesson participation of learners with SEN, that assistive apps accelerate achievement of learning goals, and that technology makes content accessible for visual and auditory impairments each obtained a mean of 4.70 (SD = 0.53, 0.47, and 0.53, respectively). The statements that digital aids boost academic results for diverse needs and that gamified platforms engage learners with ADHD and autism each obtained a mean of 4.63 (SD = 0.61 and 0.56, respectively), while technology enabling personalized instruction in mixed classes obtained a mean of 4.67 (SD = 0.61). All indicators were interpreted as Strongly Agree, and the standard deviations ranging from 0.47 to 0.61 indicate low variability and consensus. The teachers thus strongly believed that technology contributes to participation, goal attainment, academic results, accessibility, engagement, and personalization. The marginally lower means for gamified platforms and digital aids for academic results suggest slightly less certainty in those areas, although both remain within the Strongly Agree range. This belief is a critical enabling condition, yet the gap between belief and practice must be managed, since high expectancy alone does not guarantee effective use. The result echoes the observation that teachers acknowledge technology's potential while effective pedagogical application requires specialized training and resources (Polat et al., 2024). A positive perception of technology's impact on learners with SEN coexists with insufficient training and varied technology preferences (Khasawneh, 2024), which calls for targeted professional development and robust infrastructure (Santillán et al., 2024) and for equitable access and comprehensive training (Ramírez-Solórzano & Navas, 2024). Practical limitations often impede the full inclusive benefits of technology for learners with diverse cognitive and motor abilities (Öberg et al., 2024).

Effort expectancy obtained an aggregate mean of 4.26 (SD = 0.76), interpreted as Strongly Agree. The statement that inclusive lesson plans integrate tech tools easily had a mean of 4.53 (SD = 0.57), and the statement that initial training simplifies ongoing tech setup had a mean of 4.47 (SD = 0.57). Quickly learning new assistive technologies and classroom tech interfaces suiting teacher use each obtained a mean of 4.43 (SD = 0.57), all interpreted as Strongly Agree. In contrast, adapting apps for SEN requiring minimal effort obtained a mean of 3.77 (SD = 1.14) and daily tech integration feeling effortless obtained a mean of 3.90 (SD = 1.12), both interpreted as Agree, with standard deviations notably larger than the 0.57 of the

other indicators. Teachers therefore found initial learning and lesson planning manageable but experienced the ongoing adaptation of applications and routine integration as more effortful, and the large dispersion indicates uneven experiences that may relate to ICT competence, SEN training, or technical support. Such sustained effort may lead to abandonment of technology use over time if not addressed. This is consistent with research showing that, despite positive views on engagement and personalized learning, insufficient training and difficulty in adapting technology for diverse learners persist (Khasawneh, 2024), and that inadequate training to differentiate instruction increases the perceived effort of daily integration (D'Elia et al., 2025). Such challenges often stem from inadequate support services, insufficient infrastructure, and the absence of specific policy frameworks (Polat et al., 2024; Wulandari et al., 2024). Although technology offers enhanced accessibility and motivation (Campado et al., 2023), teachers report increased time commitments and difficulty ensuring software accessibility for all learners (Layachi & Pitchford, 2024), and adapting AI applications for students with disabilities demands careful attention to privacy and ethical standards together with collaboration between educators and developers (Fitias, 2025).

Social influence obtained an aggregate mean of 4.20 (SD = 0.96), interpreted as Agree and bordering on Strongly Agree. Colleagues promoting technology in inclusive settings obtained the highest mean of 4.57 (SD = 0.68), followed by DepEd mandates supporting inclusive tech use at 4.27 (SD = 0.83), both interpreted as Strongly Agree. School administrators supplying SEN tech resources obtained a mean of 4.13 (SD = 1.14), networks sharing effective SEN tech practices obtained 4.03 (SD = 0.96), and parents endorsing technology for their child with SEN obtained the lowest mean of 4.00 (SD = 1.17), all interpreted as Agree. Peer influence and policy mandates thus emerged as the strongest social drivers, while administrative resource supply, practice-sharing networks, and especially parental endorsement were weaker and more variable. The large standard deviation for parental endorsement suggests that some teachers perceived strong parent support while others perceived little, possibly reflecting varying parent engagement or differences in communication with families. Peer support should be complemented by consistent administrative backing and stronger home-school partnership, since policies and peer support may be moderated by resource availability and individual teacher agency (Искакова, 2023). This accords with the documented awareness-implementation gap in teachers' perceptions of technology integration (Ng et al., 2025) and with evidence that challenges in practice often stem from insufficient training and resource allocation (Polat et al., 2024; Wulandari et al., 2024). Teachers generally hold positive views of technology in special education while still encountering integration challenges, so a complex interplay of social, institutional, and practical factors shapes the extent and effectiveness of integration (Sanchez, 2025).

Facilitating conditions obtained an aggregate mean of 3.97 (SD = 1.02), interpreted as Agree. Schedule allowing tech planning time and PD programs targeting inclusive tech skills each obtained the highest mean of 4.10 (SD = 0.99 and 0.88, respectively), followed by the school providing reliable devices and internet at 4.03 (SD = 1.10). Tech support resolving classroom issues promptly and budget covering SEN assistive tools each obtained the lowest mean of 3.80 (SD = 1.03 and 1.10, respectively). All indicators were interpreted as Agree, and none reached the 4.21 threshold for Strongly Agree. The standard deviations from 0.88 to 1.10 indicate moderate to high variability, so some teachers faced frequent technical disruptions and budget constraints while others encountered fewer. Teachers thus saw planning time and professional development as adequate but perceived responsive technical support and dedicated assistive technology funding as the critical gaps. Without prompt technical support, malfunctioning assistive technologies may temporarily exclude learners with SEN from

participation, and limited budget restricts the range of disability-specific tools. Prior research shows that educators with access to tools often feel limited in applying them for inclusive purposes (Polat et al., 2024), which highlights the need for enhanced professional development on integrating diverse tools within inclusive frameworks (Santillán et al., 2024). Digital resources are frequently underutilized or misaligned with inclusive pedagogies, which calls for competency-based evaluation and integrated technology in teacher training (Kheng & Rusli, 2025). Training should address both technical aspects and pedagogical strategies for adapting technology to individual learning profiles (Искакова, 2023), and teacher preparedness and access to appropriate assistive technologies are pivotal, requiring both infrastructural and human capacity building (Fernández-Batanero et al., 2022).

Behavioral intention obtained an aggregate mean of 4.42 (SD = 0.63), interpreted as Strongly Agree. Seeking more training on SEN technologies obtained the highest mean of 4.63 (SD = 0.49), followed by technology integration fitting the teacher's philosophy at 4.60 (SD = 0.50) and planning to recommend tech tools to peers at 4.30 (SD = 0.65), all interpreted as Strongly Agree. The intention to use technology routinely for SEN inclusion obtained the lowest mean of 4.13 (SD = 0.86), interpreted as Agree. Teachers were thus intrinsically motivated to improve their competence, viewed technology as congruent with their beliefs, and were willing to advocate it to peers, yet their commitment to consistent daily use was less certain and more variable. This pattern suggests unaddressed barriers, plausibly linked to the effort expectancy findings on adapting applications and the facilitating condition gaps in technical support and budget. The robust intention aligns with findings that teachers show strong behavioral intentions when technology is perceived as beneficial and compatible with their pedagogical approaches (Alhwaiti, 2024), and that a high percentage of educators express strong intent when they see an integral role for technology in education (Duan et al., 2024). Perceived usefulness and alignment with teaching philosophy are critical determinants of adoption in technology acceptance models (Opaco, 2026), and such outlooks are sustained by ongoing professional development and perceived compatibility with existing frameworks (Gracia, 2026). Behavioral intentions are significantly influenced by perceived benefits for student learning and by intrinsic motivation to improve pedagogical competence (Adigun et al., 2025; Liu, 2024), while the higher variability in routine use intention (SD = 0.86) suggests potential barriers to actual implementation (Jumawid, 2026).

Use behavior obtained an aggregate mean of 4.19 (SD = 0.90), interpreted as Agree and bordering on the Strongly Agree threshold of 4.21. Applying multiple tech types such as apps and devices obtained the highest mean of 4.27 (SD = 0.87), interpreted as Strongly Agree. Currently using tech daily or weekly for SEN obtained a mean of 4.20 (SD = 0.89), interpreted as Agree, and the expectation that tech frequency will increase next semester obtained the lowest mean of 4.10 (SD = 0.96), also interpreted as Agree. Teachers who used technology tended to use a variety of tools, but frequency of use was not universal, and uncertainty about future growth, reflected in the largest standard deviation of 0.96, raises concerns about sustainability. Current use (4.20) fell below the behavioral intention aggregate of 4.42, which confirms an intention-behavior gap. This perspective is consistent with evidence that positive views on technology's role in student involvement and personalized education coexist with insufficient training and concerns about suitability that hinder seamless integration (Alenezi et al., 2023; Khasawneh, 2024). Inadequate infrastructure, data privacy concerns, and the need for continuous professional development also limit integration (Wulandari et al., 2024), and teachers frequently identify the lack of specialized training in adapting instruction and using assistive technologies as a major barrier (D'Elia et al., 2025). Even with access to tools, teachers often feel constrained in applying them for learners with SEN (Polat et al., 2024), and students with fast cognitive abilities tend to benefit more from digital resources, which suggests a disparity in impact across learning profiles (Öberg et al., 2024).

Taken together, the six constructs yielded an aggregate mean of 4.28 (SD = 0.80), interpreted as Strongly Agree, with dimension means ranging from 3.97 to 4.67. Performance expectancy ranked highest at 4.67 (SD = 0.55), followed by behavioral intentions at 4.42 (SD = 0.63), effort expectancy at 4.26 (SD = 0.76), social influence at 4.20 (SD = 0.96), use behavior at 4.19 (SD = 0.90), and facilitating conditions lowest at 3.97 (SD = 1.02). Performance expectancy, behavioral intentions, and effort expectancy were interpreted as Strongly Agree, while social influence, facilitating conditions, and use behavior were interpreted as Agree. Standard deviations were smallest for performance expectancy (0.55) and behavioral intentions (0.63), indicating strong consensus, and largest for facilitating conditions (1.02) and social influence (0.96). The progressive decline from beliefs and intentions to support structures and actual use indicates that the primary barrier at IDEAS is structural rather than attitudinal, because teachers accepted technology philosophically while environmental enablers and consistent practice lagged behind. This pattern reflects the gap between teachers' recognition of technology's pedagogical value and the realities of integration, especially regarding resources and support (Quirao et al., 2025). Lower facilitating condition ratings point to persistent systemic issues such as insufficient training and a lack of adapted tools for diverse SEN needs (Fteiha et al., 2025; Khasawneh, 2024), consistent with broader findings on the need for better infrastructure, professional development, and assistive technologies (Gracia, 2026; Lustica et al., 2025). Barriers such as inadequate training and infrastructure remain despite acknowledged benefits (Alhwaiti, 2024), alongside economic factors, time constraints, and weak training plans (Fernández-Batanero et al., 2022). Nonetheless, educators maintain positive perceptions and moderate-to-high utilization, indicating a foundation of acceptance on which targeted interventions can build (Alarba, 2023).

Level of accessibility and instructional support through technological integration

The level of accessibility and instructional support provided to learners with SEN through technological integration obtained an aggregate mean of 4.51 (SD = 0.64), interpreted as Strongly Agree, with indicator means ranging from 4.37 to 4.60. Technology supporting communication for learners with speech or language difficulties and technology improving overall classroom inclusivity each obtained the highest mean of 4.60 (SD = 0.56 and 0.62, respectively). Technology supporting differentiated instruction, digital tools helping monitor progress, and technology enhancing collaboration among teachers, parents, and specialists each obtained a mean of 4.57 (SD = 0.57). Technology strengthening learners' motivation and confidence obtained 4.53 (SD = 0.68), technology helping learners access instructional materials independently obtained 4.50 (SD = 0.63), digital content adapted to specific needs and equal participation in class activities each obtained 4.40 (SD = 0.72), and assistive tools reducing learning barriers obtained the lowest mean of 4.37 (SD = 0.72). All indicators were interpreted as Strongly Agree, and standard deviations from 0.56 to 0.72 indicate low to moderate variability and general consensus. Teachers therefore perceived technology as addressing pedagogical, social, communicative, and evaluative dimensions of inclusive education, with communication support viewed as especially impactful, while the slightly lower barrier reduction rating suggests recognition that some barriers persist. These perceptions must be interpreted cautiously and triangulated with the lower use behavior (4.19) and facilitating conditions (3.97) means, since they raise the question of whether teachers overestimated impact or achieved high impact despite moderate use and limited conditions. Validation through classroom observation, learner feedback, portfolio assessment, and usage logs would strengthen these claims. The interpretation aligns with research emphasizing digital

tools' role in mitigating learning barriers and fostering equitable access (Johler & Krumsvik, 2022), with evidence that multisensory and assistive tools enhance engagement and differentiated instruction (Niu & Niranjana, 2025), and with work on technology's beneficial role in addressing unique SEN needs (Akhmetova et al., 2022). Such integration enhances academic performance and cultivates functional life skills for community integration and employment (Karagianni & Drigas, 2023). The positive perceptions regarding communication support underscore its instrumental value (Alanazy & Alrusaiyes, 2021), as corroborated by research on screen readers and speech-to-text software (Akbar et al., 2023), and the findings on collaboration agree with the view that digital platforms foster cohesive support systems (Khasawneh, 2024).

Extent of utilization of assistive and instructional technologies

The extent of utilization in terms of frequency, type, and purpose was interpreted using the scale of 4.21-5.00 as Always, 3.21-4.20 as Often, 2.61-3.40 as Sometimes, 1.81-2.60 as Rarely, and 1.00-1.80 as Never. The aggregate mean was 4.35 (SD = 0.76), interpreted as Always. Using multimedia tools such as videos and interactive presentations obtained the highest mean of 4.73 (SD = 0.52). Using technology to improve understanding of lessons and using it to increase engagement and motivation each obtained 4.57 (SD = 0.63), and using it to monitor and assess progress obtained 4.57 (SD = 0.68), all interpreted as Always. Using learning management systems or online platforms, supporting individualized instruction, and enhancing communication with learners with SEN each obtained 4.50 (SD = 0.68). Incorporating assistive technologies during lesson delivery obtained 4.33 (SD = 0.66), integrating technology in collaborative activities obtained 4.30 (SD = 0.75), and daily use in the inclusive classroom obtained 4.23 (SD = 0.73), all interpreted as Always. Using digital tools when assessing learners with SEN and using technology for remediation and intervention each obtained 4.20 (SD = 0.89 and 0.81, respectively), interpreted as Often. Specialized devices such as screen readers and adaptive keyboards obtained 4.07 (SD = 1.05), mobile applications designed for learners with SEN obtained 4.03 (SD = 0.85), and assistive software such as text-to-speech and speech-to-text obtained the lowest mean of 3.93 (SD = 1.14), all interpreted as Often. The largest standard deviations for assistive software (1.14), specialized devices (1.05), and mobile applications (0.85) indicate greater variability in the use of disability-specific technologies than in the use of general multimedia and productivity tools. Teachers thus preferentially used general-purpose tools and applied technology for broad instructional purposes, whereas disability-specific tools that address the functional limitations of individual learners, such as text-to-speech for dyslexia, speech-to-text for writing difficulties, and augmentative communication apps for non-verbal learners, were used less frequently and more unevenly. This suggests that prior professional development may have emphasized general ICT integration over specialized assistive applications, so that learners with SEN may benefit mainly from whole-class enhancements rather than individualized, barrier-removing tools. The pervasive utilization agrees with findings that strategic technology deployment enhances engagement, motivation, and academic achievement for learners with SEN (Yeboah et al., 2024) and fosters adaptive learning environments and community integration (Karagianni & Drigas, 2023). Artificial intelligence, virtual reality, and other emerging technologies promote personalized learning, social engagement, and cognitive development (Voultsiou & Moussiades, 2025), and most educators report a positive impact on individual learning outcomes (Искакова, 2023). These results are consistent with scholarship showing that educational technologies cultivate enriched learning environments for diverse student populations (Párraga et al., 2025), that multimedia tools and adaptive devices improve accessibility and literacy skills (Akbar et al., 2023), and that technology-supported

interventions yield significant improvements in academic performance and engagement (Ebrahimian, 2025; Hosni et al., 2023).

Significant relationships among the variables

The first inferential analysis tested the relationship between teachers' acceptance and utilization of technology and the level of accessibility and instructional support for learners with SEN, using the Pearson product-moment correlation coefficient at the 0.05 level of significance in a two-tailed test. The r -values ranged from 0.361 to 0.756, with p -values from 0.000 to 0.050. Performance expectancy had the highest correlation ($r = 0.756$, $p = 0.000$), followed by social influence ($r = 0.710$, $p = 0.000$), behavioral intentions ($r = 0.648$, $p = 0.000$), use behavior ($r = 0.644$, $p = 0.000$), and facilitating conditions ($r = 0.575$, $p = 0.001$). Effort expectancy had the lowest correlation ($r = 0.361$, $p = 0.050$). The decision for all six dimensions was to reject the null hypothesis (H_01), and every relationship was interpreted as significant. Teachers' beliefs, social environment, structural conditions, and actual behaviors were therefore collectively related to how well learners with SEN could access and benefit from technology-enhanced instruction. Teachers who strongly believed that technology improves outcomes tended to provide higher accessibility and support, while peer encouragement, personal commitment, and consistent use were also important correlates. The weaker correlation for effort expectancy indicates that perceived ease of use was related to accessibility and support but far less strongly, and its p -value of exactly 0.050 places it at the threshold of significance, a marginal but statistically meaningful relationship. Simplifying interfaces alone would thus likely yield only modest accessibility gains unless accompanied by stronger performance beliefs and supportive social conditions, although ease-of-use improvements should not be neglected, particularly for teachers with basic ICT competence. These results underscore the role of teacher perception of efficacy in shaping pedagogical practice for diverse learners (Karagianni & Drigas, 2023). Positive attitudes correlate with engagement and personalized learning in inclusive settings (Khasawneh, 2024), and beliefs about technology's benefits directly affect successful integration for learners with SEN (Alanazy & Alrusaiyes, 2021). The substantial correlation of social influence ($r = 0.710$) suggests that peer norms and administrative support reinforce technology integration (Alhwaiti, 2024), indicating the importance of a supportive professional community and institutional encouragement (Jumawid, 2026; Opaco, 2026). The weaker correlation for effort expectancy ($r = 0.361$) implies that ease of use is less influential than perceived performance benefits or social pressures, in line with research that perceived utility and sociocultural context exert greater influence on adoption than foundational usability in complex inclusive education challenges (Gracia, 2026; Quirao et al., 2025). The persistent emphasis on performance expectancy and facilitating conditions as consistent predictors further substantiates these findings (Hamdan & Kamsin, 2026).

The second inferential analysis examined whether the level of accessibility and instructional support for learners with SEN was related to the extent of utilization of assistive and instructional technologies by teachers in inclusive classrooms. The Pearson correlation yielded $r = 0.652$ with $p = 0.000$, a two-tailed result that was lower than the 0.05 level of significance, so the null hypothesis (H_02) was rejected and the relationship was interpreted as significant. The positive direction and moderate to strong magnitude indicate that as the extent of utilization of assistive and instructional technologies increased, the level of accessibility and instructional support provided to learners with SEN also tended to increase. Teachers who more consistently used assistive software, multimedia tools, mobile applications, learning

management systems, and specialized devices for individualized instruction, communication, progress monitoring, and engagement reported higher levels of accessibility and support. Because the coefficient of 0.652 is moderate rather than very strong, utilization is a substantial but not sole determinant, and increased use without attention to quality, appropriateness, and context will not automatically maximize accessibility gains. Other variables such as teacher training, institutional support, and technological affordances concurrently influence outcomes, and robust digital literacy and comprehensive training are essential to optimize inclusive technology application (Santillán et al., 2024). Teachers' awareness and competencies are critical for addressing diverse SEN needs (D'Elia et al., 2025), which necessitates continuous professional development (Искакова, 2023). Positive attitudes toward e-inclusive practices are often contingent on familiarity with technology and equipment availability (Karagianni & Drigas, 2023), and the effective integration of digital methods depends on explicit instruction and robust teacher support because efficacy varies across challenges (Stalmach et al., 2024). These findings align with research emphasizing educator preparedness and infrastructural support (Hamid et al., 2025; Marin et al., 2025), and a holistic approach grounded in Universal Design for Learning enhances participation and academic achievement for learners with SEN (Yeboah et al., 2024).

Synthesis of findings

In sum, the data from the 30 teacher-respondents of IDEAS describe a young, predominantly female, early-career, and novice teaching workforce with moderate ICT competence, universal access to laptops or computers (100%), strong but incomplete access to mobile devices and internet (86.67% each), and limited access to projectors or smart TVs (60.00%). The teachers expressed strong acceptance of technology, with an aggregate mean of 4.28 (SD = 0.80), driven by performance expectancy (4.67) and behavioral intentions (4.42) and constrained by facilitating conditions (3.97), social influence (4.20), and use behavior (4.19). They perceived a very high level of accessibility and instructional support for learners with SEN (aggregate mean = 4.51, SD = 0.64) and reported a high extent of utilization (aggregate mean = 4.35, SD = 0.76), although disability-specific tools were used less frequently and less uniformly than general multimedia tools. The Pearson correlation results rejected both null hypotheses, showing that all six UTAUT dimensions ($r = 0.361$ to 0.756) and the extent of utilization ($r = 0.652$) were significantly and positively related to accessibility and instructional support. These results address the objectives of the study by showing that accessibility for learners with SEN at IDEAS is associated with teachers' beliefs, social environment, institutional conditions, and the breadth and purpose of technology use, and that the main constraints are structural rather than attitudinal. The study thereby contributes localized evidence from a Philippine early childhood and special education setting that supports the continued relevance of the UTAUT framework for understanding technology integration in inclusive classrooms. These findings provide the empirical basis for the conclusions, recommendations, and proposed action plan presented in the succeeding chapter.

CONCLUSION

The study concluded that teachers at Intellectual Development for Early Age School (IDEAS) in Talisay City, Cebu, demonstrated strong beliefs in the effectiveness of technology for learners with Special Educational Needs (SEN) and held high intentions to integrate it into their instruction during the school year 2025-2026. This conclusion rests on a descriptive-correlational investigation of 30 teacher-respondents, selected through total population sampling and surveyed with an instrument adapted from the Unified Theory of Acceptance and

Use of Technology (UTAUT) by Venkatesh et al. (2003). The respondents were largely young and early-career professionals: most were aged 26-30 (43.33%), female (96.67%), and held the rank of Teacher 1 (90.00%). Most also held a Bachelor's Degree as their highest educational attainment (53.33%), had 1-3 years of teaching experience (73.33%), had attended inclusive or special education trainings (60.00%), and rated their ICT competence as Intermediate (60.00%). All respondents had access to laptops or computers (100%), whereas access to projectors or Smart TVs was the least available (60.00%). The aggregate mean of 4.28 (Strongly Agree) across the UTAUT dimensions showed that teachers held favorable perceptions of technology. Performance Expectancy was the highest rated (4.67, Strongly Agree), followed by Behavioral Intentions (4.42, Strongly Agree) and Effort Expectancy (4.26, Strongly Agree). Social Influence (4.20, Agree) and Use Behavior (4.19, Agree) were rated lower, and Facilitating Conditions received the lowest mean of 3.97 (Agree).

This pattern of results indicated that actual integration was constrained by insufficient facilitating conditions, particularly unreliable technical support and inadequate budget allocation for assistive tools, rather than by teachers' attitudes or motivation. The lower rating for Use Behavior relative to Behavioral Intentions further pointed to a gap between what teachers intended to do and what they were able to do in practice. The extent of utilization of assistive and instructional technologies reinforced this interpretation. Although the aggregate mean of 4.35 (Always) suggested frequent use, multimedia tools were rated highest (4.73, Always), while specialized technologies were used less often. Assistive software such as text-to-speech and speech-to-text received the lowest rating (3.93, Often), followed by mobile applications for SEN (4.03, Often) and specialized devices (4.07, Often). Teachers therefore relied mainly on general multimedia tools, and their use of tools designed specifically for learners with SEN remained comparatively limited.

Despite these constraints, teachers were found to provide a high level of accessibility and instructional support to learners with SEN, with an aggregate mean of 4.51 (Strongly Agree). The highest-rated indicators were communication support for learners with speech or language difficulties (4.60) and improvement of overall classroom inclusivity (4.60). The lowest-rated indicator, assistive tools reducing learning barriers (4.37), still fell within the Strongly Agree range. It was nonetheless consistent with the lower utilization of specialized assistive technologies noted earlier.

The correlational analysis confirmed that teachers' technology acceptance and utilization were directly tied to the quality of accessibility and instructional support. All six dimensions showed significant positive correlations with the level of accessibility and instructional support for learners with SEN. Performance Expectancy showed the strongest correlation ($r = 0.756$, $p = 0.000$), while Effort Expectancy showed the weakest but still significant correlation ($r = 0.361$, $p = 0.050$). The relationship between accessibility and instructional support and the extent of utilization of assistive and instructional technologies was also significant ($r = 0.652$, $p = 0.000$). Improving teachers' technology acceptance and utilization therefore directly enhances accessibility and instructional support for learners with SEN, with performance expectancy and social influence emerging as the strongest drivers. The weaker correlation for effort expectancy suggested that ease of use alone would not substantially improve outcomes without corresponding attention to performance beliefs and institutional support structures.

Taken together, these findings led to the conclusion that the primary barrier to effective technology integration at IDEAS was the school's structural and resource environment rather than teacher attitude or motivation. An evidence-based action plan was thus warranted, one that prioritizes facilitating conditions, specialized assistive technology training, and stronger

social influence from administrators and parents. In line with this, the researcher strongly recommends adopting and implementing the proposed "IDEAS Inclusive Technology Integration Action Plan," presented in Chapter 4, which addresses the identified gaps. These include strengthening facilitating conditions through responsive technical support protocols and a dedicated budget for SEN assistive tools, bridging the intention-behavior gap through structured coaching and accountability mechanisms, and enhancing specialized assistive technology utilization through targeted training and resource repositories. The plan also seeks to bolster social influence through administrator-led initiatives and parent engagement programs.

Consistent with these priorities, school administrators are encouraged to prioritize budget allocation for assistive software procurement, establish a dedicated technical support team with guaranteed response times, and implement the tiered professional development framework for basic, intermediate, and advanced ICT competence levels. The Department of Education may also use the action plan as a reference model for technology integration in inclusive classrooms across similar school contexts. Finally, future researchers are encouraged to validate the effectiveness of the implemented action plan through follow-up studies that examine actual improvements in the accessibility outcomes of learners with SEN.

REFERENCES

- Adewale, M. D., Azeta, A. A., Abayomi-Alli, A., & Sambo-Magaji, A. (2024). Impact of artificial intelligence adoption on students' academic performance in open and distance learning: A systematic literature review. *Heliyon*, 10(22), e40025. <https://doi.org/10.1016/j.heliyon.2024.e40025>
- Adigun, O. T., Tijani, F. A., Haihambo, C. K., & Enock, S. L. (2025). Understanding pre-service teachers' intention to adopt and use artificial intelligence in Nigerian inclusive classrooms. *Frontiers in Education*, 10. <https://doi.org/10.3389/educ.2025.1519472>
- Akbar, K. F., Damanik, F. H. S., Juliana, J., Akib, A., & Wibowo, F. I. S. (2023). Inclusive education practices: Fostering an accessible learning environment for diverse learners. *Global International Journal of Innovative Research*, 1(3), 227. <https://doi.org/10.59613/global.v1i3.35>
- Akhmetova, G., Massaliyeva, Z., Ismanova, R., & Butabayeva, L. (2022). Formation of positive relationships of peers to children with special educational needs in inclusive education. *Cypriot Journal of Educational Sciences*, 17(8), 2622. <https://doi.org/10.18844/cjes.v17i8.7822>
- Akhter, S., Amjad, A. I., Shaheen, F., Fakhrou, A., & Khasawneh, M. A. S. (2025). Access and transition in inclusive education: Addressing the digital divide in educational technology. *International Journal of Innovative Research and Scientific Studies*, 8(5), 1951. <https://doi.org/10.53894/ijirss.v8i5.9326>
- Alanazy, M. M., & Alrusaiyes, R. F. (2021). Saudi pre-service special education teachers' knowledge and perceptions toward using computer technology. *International Education Studies*, 14(3), 125. <https://doi.org/10.5539/ies.v14n3p125>
- Alarba, P. N. (2023). Teacher's competencies in integrating TPACK model into a Hyflex teaching and learning of learners with special educational needs. *International Journal for*

Research in Applied Science and Engineering Technology, 11(11), 2116.
<https://doi.org/10.22214/ijraset.2023.56953>

Alegre, E. M. (2023). Technology-driven education: Analyzing the synergy among innovation, motivation, and student engagement. *International Journal of Membrane Science and Technology*, 10(2), 1477. <https://doi.org/10.15379/ijmst.v10i2.1507>

Alenezi, M. A. K., Mohamed, A. M., & Shaaban, T. S. (2023). Revolutionizing EFL special education: How ChatGPT is transforming the way teachers approach language learning. *Innoeduca International Journal of Technology and Educational Innovation*, 9(2), 5. <https://doi.org/10.24310/innoeduca.2023.v9i2.16774>

Alhwaiti, M. (2024). Using virtual classroom for teaching special needs students in inclusive classrooms during and beyond COVID-19: Teachers' perspectives. *Anales de Psicología*, 40(1), 95. <https://doi.org/10.6018/analesps.523331>

Amouri, H., Haroud, S., Ouchaouka, L., & Saqri, N. (2025). Acceptability of artificial intelligence in inclusive education: A TAM2-based study among preservice teachers. *Frontiers in Artificial Intelligence*, 8, 1616327. <https://doi.org/10.3389/frai.2025.1616327>

Angara, S. (2025, January 21). Digital, AI support pushed for learners with disabilities. *Philippine News Agency*. <https://www.pna.gov.ph/articles/1248962>

Amoyo, J. A., & Marquez, M. F. (2025). Utilization of technology in special education class in relation to students' learning style: Basis for an integration framework. *EPRA International Journal of Multidisciplinary Research (IJMR)*, 447. <https://doi.org/10.36713/epra23143>

Arguson, A. C., Mabborang, M. P., & Paculan, R. S. (2023). The acceptability of generative AI tools of selected senior high school teachers in Schools Divisions Office-Manila, Philippines. *Journal of Artificial Intelligence, Machine Learning and Neural Network*, 36, 1. <https://doi.org/10.55529/jaiml.36.1.10>

Azizoglu, B., & Cakir, R. (2025). Examination of special education teachers' ICT attitudes, digital material design competencies, and generative artificial intelligence literacy. *DergiPark (Istanbul University)*. <https://dergipark.org.tr/en/pub/neueefd/issue/90458/1683328>

Blando, H. D. (2025). Bridging the digital divide: A systematic review of teacher preparedness and technology integration in the MATATAG curriculum. <https://doi.org/10.5281/ZENODO.15113816>

Campado, R. J., Toquero, C. M. D., & Ulanday, D. M. P. (2023). Integration of assistive technology in teaching learners with special educational needs and disabilities in the Philippines. *International Journal of Professional Development Learners and Learning*, 5(1). <https://doi.org/10.30935/ijpdll/13062>

Castalone, A.-P. M., Verula, M. P., Sabangan, Q. M. D., Golla, D. K. B., & Bulalacao, V. R. G. (2026). Special education in the Philippines: A meta-synthesis of teacher narratives and inclusive practices. *Zenodo (CERN European Organization for Nuclear Research)*. <https://doi.org/10.5281/zenodo.18681580>

- Catoto, J. S., & Mantawil, B. A. (2023). For the love of teaching: The chronicles of teachers handling students with special educational needs. *Journal of Curriculum and Teaching*, 12(1), 63. <https://doi.org/10.5430/jct.v12n1p63>
- Celeste, R. J., & Osias, N. (2024). Challenges and implementation of technology integration: Basis for enhanced instructional program. *American Journal of Arts and Human Science*, 3(2), 106. <https://doi.org/10.54536/ajahs.v3i2.2656>
- Chanthiran, M., Mariappan, P., Govinndasamy, P., & Kanawazi, K. (2025). Interpreting the role of artificial intelligence (AI) tools and assistive technologies in enhancing accessibility in primary school special education. *Muallim Journal of Social Science and Humanities*, 53. <https://doi.org/10.33306/mjssh/365>
- Charles, T., & Alshamsi, A. (2025). Navigating challenges in technology integration for inclusive classrooms. In *IGI Global eBooks* (p. 87). IGI Global. <https://doi.org/10.4018/979-8-3693-8759-7.ch004>
- Co, S. J. (2025a). Artificial intelligence in Philippine education: A narrative review of applications, perceptions, and challenges. *International Research Journal of Science, Technology, Education, and Management*, 5(2), 25. <https://doi.org/10.5281/zenodo.15902950>
- Dalyanci, A. A., Mast, L., Krushinskaia, K., & Raes, A. (2025). Detecting innovators in the field: Teachers' perceptions and adoption of generative AI in education. *The Open/Technology in Education, Society, and Scholarship Association Journal*, 5(1), 1. <https://doi.org/10.18357/otessaj.2025.5.1.89>
- Damyantov, P. K. (2024). Effective pedagogical strategies and support mechanisms for enhancing the learning outcomes of students with special educational needs: A systematic approach. *International Journal of Scientific Research and Management (IJSRM)*, 12(10), 3700. <https://doi.org/10.18535/ijssrm/v12i10.el03>
- D'Elia, P., Stalmach, A., Sano, S. D., & Casale, G. (2025). Strategies for inclusive digital education: Problem/project-based learning, cooperative learning, and service learning for students with special educational needs. *Frontiers in Education*, 9. <https://doi.org/10.3389/feduc.2024.1447489>
- Department of Education. (2020). DM No. 203, s. 2020: Guidelines on the use of the curricula for learners with disabilities during crisis situations. <https://www.depeddasma.edu.ph/dm-no-203-s-2020-guidelines-on-the-use-of-the-curricula-for-learners-with-disabilities-during-cris>
- Department of Education. (2025). DO_s2025_013: Support for the responsible, inclusive, and strategic integration of AI. https://www.deped.gov.ph/wp-content/uploads/DO_s2025_013.pdf
- Doria, J. O. (2024). The double-edged sword: A review of artificial intelligence integration in the Philippine educational system. *Southeast Asian Journal of Science and Technology*, 9(1), 257. <https://www.sajst.org/online/index.php/sajst/article/view/341>
- Du, X., & Lyublinskaya, I. (2022). Designing professional development for special education teachers: Effects on assistive technology competency in developing inquiry-based student experiences. *Journal of Digital Learning in Teacher Education*, 38(4), 199. <https://doi.org/10.1080/21532974.2022.2113938>

Duan, S., Exter, M., & Li, Q. (2024). In their ideal future, are preservice teachers willing to integrate technology in their teaching and why? *TechTrends*, 68(4), 734. <https://doi.org/10.1007/s11528-024-00978-7>

Duka, A., Leka, K., Vampa, M., Bursová, J., & Jenisová, Z. (2024). The impact of climate in inclusive classrooms - Influencing the motivation of students with special needs. *Journal of Education Culture and Society*, 15(1), 303. <https://doi.org/10.15503/jecs2024.1.303.314>

Ebrahimian, V. (2025). Empowering inclusive pedagogy: Teacher's experiences with AI-driven assistive technologies in special needs classrooms. <https://doi.org/10.21203/rs.3.rs-7408910/v1>

Fernández-Batanero, J. M., Rueda, M. M., & Cerero, J. F. (2022). Are primary education teachers trained for the use of the technology with disabled students? *Research and Practice in Technology Enhanced Learning*, 17(1). <https://doi.org/10.1186/s41039-022-00195-x>

Fernández-Batanero, J. M., Rueda, M. M., Cerero, J. F., & García-Martínez, I. (2022). Assistive technology for the inclusion of students with disabilities: A systematic review. *Educational Technology Research and Development*, 70(5), 1911. <https://doi.org/10.1007/s11423-022-10127-7>

Fitas, R. (2025). Inclusive education with AI: Supporting special needs and tackling language barriers. *AI and Ethics*. <https://doi.org/10.1007/s43681-025-00824-3>

Fteiha, M., Al-Rashaida, M., & Ghazal, M. (2025). General and special education teachers' readiness for artificial intelligence in classrooms: A structural equation modeling study of knowledge, attitudes, and practices in select UAE public and private schools. *PLoS ONE*, 20(9). <https://doi.org/10.1371/journal.pone.0331941>

Fudalan, A. (2025). Can AI replace teachers? The value of artificial intelligence in Philippine education. *Psychology and Education: A Multidisciplinary Journal*, 43(4), 449. <https://doi.org/10.70838/pemj.430405>

Galván, J. J. M., Medina, M. Á. N., Bernárdez-Gómez, A., & Pruaño, A. P. (2023). The impact of the first millennial teachers on education: Views held by different generations of teachers. *Education and Information Technologies*, 28(11), 14805. <https://doi.org/10.1007/s10639-023-11768-8>

Gomez, M. A. C., Miranda, P. A., & Espinosa, A. A. (2025). Mind the gap: Bridging the divide between designing and implementing inclusion policies in the Philippines. SSRN. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=5186085

Gonzaga, N., Plan, L., & Aguiño, M. (2024). Readiness and challenges of general education teachers on the implementation of inclusive education. *Russian Law Journal*. <https://doi.org/10.52783/rlj.v12i1.3534>

Gracia, E. D. (2026). Teachers' technology utilization profile in inclusive education. *Pantao, International Journal of the Humanities and Social Sciences*, 5(1). <https://doi.org/10.69651/pijhss0501732>

- Graván, P. R., Cerero, J. F., Rueda, M. M., & Reyes-Rebollo, M. M. (2023). University teaching skills in ICT and disability. The case of the Autonomous Community of Madrid. *Education and Information Technologies*, 29(10), 12653. <https://doi.org/10.1007/s10639-023-12314-2>
- Hamdan, H. H., & Kamsin, I. F. (2026). Understanding teachers' acceptance and use of AI in secondary inclusive classrooms using the UTAUT model. *International Journal of Academic Research in Business and Social Sciences*, 16(3). <https://doi.org/10.6007/ijarbss/v16-i3/27885>
- Hamid, M. S., Hamza, E. A., Bedewy, D., Elsiddig, F. M. E., Al-Shammari, S., Bakhiet, S. F. A., & Mohamed, N. I. A. (2025). Impact of digital competencies and assistive technologies on learning outcomes for students with learning disabilities in Kingdom of Saudi Arabia: A systematic review. *Frontiers in Education*, 10. <https://doi.org/10.3389/feduc.2025.1640556>
- Hosni, B. A., Naidu, V. R., & Mandhari, S. A. (2023). Support for students with special needs during and after the COVID-19 pandemic through E-learning: A case study. *SHS Web of Conferences*, 156, 6004. <https://doi.org/10.1051/shsconf/202315606004>
- Johler, M., & Krumsvik, R. J. (2022). Increasing inclusion through differentiated instruction in a technology-rich primary school classroom in Norway. *Education 3-13*, 52(8), 1207. <https://doi.org/10.1080/03004279.2022.2143721>
- Jumawid, M. (2026). Exploring the technology utilization profile of teachers in inclusive education. *Pantao, International Journal of the Humanities and Social Sciences*, 5(1). <https://doi.org/10.69651/pijhss0501736>
- Karagianni, E., & Drigas, A. (2023). New technologies for inclusive learning for students with special educational needs. *International Journal of Online and Biomedical Engineering (iJOE)*, 19(5), 4. <https://doi.org/10.3991/ijoe.v19i05.36417>
- Khasawneh, M. A. S. (2024). Evaluating the efficacy of tablet-based assistive technology in Saudi special education settings. *International Journal of Learning Teaching and Educational Research*, 23(6), 547. <https://doi.org/10.26803/ijlter.23.6.25>
- Kheng, M., & Rusli, N. A. (2025). Teacher training programs: The perspectives of special educational needs (SEN) teachers. *International Journal of Instruction*, 18(4), 335. <https://doi.org/10.29333/iji.2025.18419a>
- Khotimah, H., Hidayat, N., & Nor-Khaizura, M. A. R. (2025). The essential role of teacher self-efficacy and teacher acceptance for differentiated learning. *Profesi Pendidikan Dasar*, 97. <https://doi.org/10.23917/ppd.v12i2.9215>
- Knussen, L., & Agnew, A. (2022). Supporting early career teachers' digital agency: A role for mentorship? *Irish Educational Studies*, 41(1), 201. <https://doi.org/10.1080/03323315.2021.2022524>
- Kontis, S., Seremeti, L., & Anastasiadou, S. (2025). Augmented pedagogy in special education: Integrating AI, robotics, and adaptive technologies for inclusive learning. 139. <https://doi.org/10.46793/elearning2025.139k>

Kunjiapu, S., Sinnappan, P., Salim, F. A. A., & Kunasegaran, M. (2025). Challenges and dilemmas of digitalization in Philippine education: A grassroots perspective. *Journal of Public Administration and Governance*, 14(2), 232. <https://doi.org/10.5296/jpag.v14i2.22325>

Kurniawati, S., Asih, R. A., & Sudiran, S. (2024). Unveiling the dual facet EFL novice teachers' identity construction: Professionalism and religious identity. *Tarbawi Jurnal Ilmu Pendidikan*, 20(1), 15. <https://doi.org/10.32939/tarbawi.v20i1.3826>

Layachi, A., & Pitchford, N. (2024). Formative evaluation of an interactive personalised learning technology to inform equitable access and inclusive education for children with special educational needs and disabilities. *Technology Knowledge and Learning*. <https://doi.org/10.1007/s10758-024-09739-0>

Li, J., Yan, Y., & Zeng, X. (2025). Exploring artificial intelligence in inclusive education: A systematic review of empirical studies. *Applied Sciences*, 15(23), 12624. <https://doi.org/10.3390/app152312624>

Liu, H.-H. (2024). Exploring key factors influencing the willingness of elementary school resource class teachers to integrate technology into teaching. *International Journal of Information and Education Technology*, 14(4), 581. <https://doi.org/10.18178/ijiet.2024.14.4.2080>

Lustica, Z., Sapio, S. S., Paredes, R., Bejagan, M. J. M., Gardose, M. F. L., Reyes, N. R. T. D., & Espina, R. C. (2025). Improving learning outcomes of students through technology integration in special needs education programs. *British Journal of Teacher Education and Pedagogy*, 4(9), 1. <https://doi.org/10.32996/bjtep.2025.4.9.1>

Marin, E., Stîngu, M., & TORCĂRESCU, V.-L.-V. (2025). Enhancing inclusive education: Analysing the impact of training programs on teacher perceptions and school values. *Revista de Pedagogie - Journal of Pedagogy*, 1, 91. <https://doi.org/10.26755/revped/2025.1/91>

Machkour, M., Lamalif, L., Faris, S., Mansouri, K., & Akef, F. (2023). Framework of ICT integration into learning using Udl for learning approach. *Journal of Southwest Jiaotong University*, 58(6). <https://doi.org/10.35741/issn.0258-2724.58.6.9>

Mekheimer, M. A. (2025). Effective technology integration in higher education: A mixed-methods study of professional development. *Education and Information Technologies*. <https://doi.org/10.1007/s10639-025-13750-y>

Moraleda, D., Gonzales, R., V. Infante, E., Sta. Cruz, M., Bauza, J., Monzon, H., Babasa, A., Taguiang, A., Flores, E., M. Añonuevo, K., Bersales, J., Francesca A. Birung, P., Joseph P. Cabauatan, M., de Lara Co, M., Supreme B. Comia, R., M. Del Valle-Ramoso, Ma. G., D. Enrile, C., A. Iellamo, E., Zenne O. Genandoy, J., ... Kevin Rivera, J. (2025). EDCOM II year two report fixing the foundations a matter of national survival.

Mpu, Y. (2023). Bridging the knowledge gap on special needs learner support: The use of artificial intelligence (AI) to combat digital divide post-COVID-19 pandemic and beyond – A comprehensive literature review. In *IntechOpen eBooks*. IntechOpen. <https://doi.org/10.5772/intechopen.113054>

- Navas-Bonilla, C. del R., Guerra-Arango, J. A., Oviedo-Guado, D. A., & Murillo-Noriega, D. E. (2025). Inclusive education through technology: A systematic review of types, tools and characteristics. *Frontiers in Education*, 10. <https://doi.org/10.3389/feduc.2025.1527851>
- Ng, D. T. K., Chan, E., & Lo, C. K. (2025). Opportunities, challenges and school strategies for integrating generative AI in education. *Computers and Education Artificial Intelligence*, 8, 100373. <https://doi.org/10.1016/j.caeai.2025.100373>
- Niu, H., & Niranjan, M. (2025). Teacher digital competence in New Zealand primary schools: A qualitative study of integration practices, challenges, and cultural considerations. *The Australian Educational Researcher*. <https://doi.org/10.1007/s13384-025-00912-7>
- Öberg, J., Fors, U., & Zdravković, J. (2024). Teachers' perspectives on using technology to facilitate pupil participation. *International Journal of Emerging Technologies in Learning (iJET)*, 19(2), 14. <https://doi.org/10.3991/ijet.v19i02.45931>
- Opaco, N. J. (2026). Delineating the technology utilization profile of teachers in inclusive education. *Pantao, International Journal of the Humanities and Social Sciences*, 5(1). <https://doi.org/10.69651/pijhss0501731>
- Párraga, A. P. B., Torres, V. L. C., Torres, C., Cedeño, C. R. P., & Franco, L. B. M. (2025). Integrating innovative technologies into inclusive education: Strategies for serving students with special educational needs. *Perspectiva XXI*, 3(4), 75. <https://doi.org/10.70577/sjzz4751>
- Polat, E., SIBIÇ, S. C., Cirit, N. C., Hopcan, S., & BAŞTUĞ, Y. E. (2024). Educational technology in inclusive classrooms: Assessing teacher awareness and needs. *Journal of Educational Technology and Online Learning*, 7(1), 116. <https://doi.org/10.31681/jetol.1355239>
- Quirao, H. M., Pinili, L., Sitoy, R., Capuno, R. G., Espina, R. C., Peteros, E. D., Reyes, N. R. D., & Añero, M. (2025). Level of perception and challenges on technology utilization in an inclusive classroom setting. *Psychology and Education A Multidisciplinary Journal*, 46(8), 1124. <https://doi.org/10.70838/pemj.460810>
- Ramírez-Solórzano, F. L., & Navas, C. D. H. (2024). Inclusión educativa: Desafíos y oportunidades para la educación de estudiantes con necesidades especiales. *Revista Científica Zambos.*, 3(3), 44. <https://doi.org/10.69484/rcz/v3/n3/57>
- Ranes, B. (2025). AI integration in facilitating learning: Its benefits, challenges and strategies for enhancement. *Divine Word International Journal of Management and Humanities (DWIJMH)* (ISSN 2980-4817), 4(3), 2095. <https://doi.org/10.62025/dwijmh.v4i3.181>
- Republic of the Philippines. (2022). Republic Act No. 11650: An Act instituting a policy of inclusion and services for learners with disabilities. https://lawphil.net/statutes/repacts/ra2022/ra_11650_2022.html
- Salvaña, L., & Protacio, A. (2025). Navigating inclusive classrooms: English language teachers' narratives of teaching students with special needs. 40(10), 1266. <https://doi.org/10.70838/pemj.401002>

Sanchez, A. (2025). Bridging learning gaps through the use of assistive technology among learners in special needs and inclusive education settings. *Psychology and Education A Multidisciplinary Journal*, 50(10), 1146. <https://doi.org/10.70838/pemj.501003>

Santillán, C. M. T., Párraga, A. P. B., Santillan, R. Y. G., Quiña, M. de los A. G., & Alvare, M. A. C. (2024). Formación docente en el uso de herramientas tecnológicas para el Apo-yo a las necesidades educativas especiales en el aula. *Ciencia Latina Revista Científica Multidisciplinar*, 8(3), 3768. https://doi.org/10.37811/cl_rcm.v8i3.11588

Santos, S. M. A. V., Silva, C. G. D., Carvalho, I. E. D., Castilho, L. P. D., Meroto, M. B. das N., Tavares, P. R., Pires, R. dos R., & Moniz, S. S. de O. R. (2024). The art of personalization of education: Artificial intelligence on the stages of special education. *Contribuciones a Las Ciencias Sociales*, 17(2). <https://doi.org/10.55905/revconv.17n.2-008>

Savior, M. A. F., Sitoy, R. E., Espina, R. C., Tenerife-Cañete, J. J. L., Capuno, R. G., Vera, J. D., Tandag, J. M., & Mamites, I. O. (2025). Key stage 1 teachers' preparedness in handling learners with special educational needs. *International Journal of Research and Innovation in Social Science*, 9(10), 1035. <https://doi.org/10.47772/ijriss.2025.910000088>

Setiawan, P. Y., & Kusumadewi, N. M. W. (2023). Exploring the role of perceived enjoyment integration in the unified theory of acceptance and use of technology: A descriptive study. *Russian Journal of Agricultural and Socio-Economic Sciences*, 140(8), 78. <https://doi.org/10.18551/rjoas.2023-08.08>

Simos, C., & Katsiampoura, I. (2025). The use of digital tools to enhance inclusion in the classroom. *World Journal of Advanced Engineering Technology and Sciences*, 17(1), 465. <https://doi.org/10.30574/wjaets.2025.17.1.1446>

Stalmach, A., D'Elia, P., Sano, S. D., & Casale, G. (2024). Digital methods to promote inclusive and effective learning in schools: A mixed methods research study. *Open Education Studies*, 6(1). <https://doi.org/10.1515/edu-2024-0023>

Tagyamon, J., Andan, R., Aranas, M. L., Asma, M., Bucog, V., Espiritu, S. M., Juárez, M. P., Limpag, G., Odever, M. N., Serdan, R. J., Sumampong, M. M., Villanueva, M. L. T., & Cabello, C. A. (2025). Inclusive education implementation in the Philippines: A systematic review [Review of Inclusive education implementation in the Philippines: A systematic review]. *Psychology and Education A Multidisciplinary Journal*, 44(2), 215. <https://doi.org/10.70838/pemj.440204>

Teng, K. Y., Liden, A. Y., Girrie, C. R. J., Dinggat, J. N., & Lee, H. Y. (2025). The role of digital technologies in enhancing inclusive education: A systematic review of current trends. *Jurnal Pendidikan Bitara UPSI*, 18, 178. <https://doi.org/10.37134/bitara.vol18.sp.16.2025>

Toyokawa, Y., Horikoshi, I., Majumdar, R., & Ogata, H. (2023). Challenges and opportunities of AI in inclusive education: A case study of data-enhanced active reading in Japan. *Smart Learning Environments*, 10(1). <https://doi.org/10.1186/s40561-023-00286-2>

UNESCO. (2023). Technology in education: A case study on the Philippines. UNESCO Digital Library. <https://unesdoc.unesco.org/ark:/48223/pf0000387743>

- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 27(3), 425–478. <https://doi.org/10.2307/30036540>
- Venzon, W. C., & Venzon, M. E. (2025). Advancing senior high school research skills through the integration of artificial intelligence tools. *International Journal for Research in Applied Science and Engineering Technology*, 13(5), 4117. <https://doi.org/10.22214/ijraset.2025.70174>
- Villarino, R. T. H. (2024). Rural Philippine college students' perspectives and experiences on AI tools in education: A mixed-method research.
- Vistar, M. T. A., Pinili, L., & Capuno, R. G. (2024). Investigating the child development of learners with special educational needs in inclusive education. *International Journal for Research in Applied Science and Engineering Technology*, 12(5), 1369. <https://doi.org/10.22214/ijraset.2024.61593>
- Voultsiou, E., & Moussiades, L. (2025). A systematic review of AI, VR, and LLM applications in special education: Opportunities, challenges, and future directions. *Education and Information Technologies*, 30(13), 19141. <https://doi.org/10.1007/s10639-025-13550-4>
- Walia, P., & GUHA, S. (2025). Efficacy of tech-integrated instruction in science education: Educators' perspectives to support students with specific learning disabilities in inclusive classrooms.
- Wohlfart, O., & Wagner, I. (2024). Longitudinal perspectives on technology acceptance: Teachers' integration of digital tools through the COVID-19 transition. *Education and Information Technologies*, 30(5), 6091. <https://doi.org/10.1007/s10639-024-12954-y>
- Wulandari, C. E., Firdaus, F. A., & Saifulloh, F. (2024). Promoting inclusivity through technology: A literature review in educational settings [Review of Promoting inclusivity through technology: A literature review in educational settings]. *The Journal of Learning and Technology*, 3(1), 19. *Universitas Terbuka*. <https://doi.org/10.33830/jlt.v3i1.9731>
- Yeboah, T. J., Bobga, M. A., Boakye, K., & Ogbona, C. S. (2024). Technology integration in special education: Enhancing student engagement and accessibility. *International Journal of Advanced Multidisciplinary Research and Studies*, 4(6), 2978. <https://doi.org/10.62225/2583049x.2024.4.6.5840>
- Yusuf, F. A. (2025). Trends, opportunities, and challenges of artificial intelligence in elementary education - A systematic literature review. *Journal of Integrated Elementary Education*, 5(1), 109. <https://doi.org/10.21580/jieed.v5i1.25594>
- Zawawi, N. A. W. A., & Hashim, H. (2024). Special education integration program: Teacher's insights on utilizing technology in ESL classroom. *SHS Web of Conferences*, 182, 1013. <https://doi.org/10.1051/shsconf/202418201013>
- Искакова, М. К. (2023). Electronic technologies to ensure individual learning of education seekers with special needs. 4. <https://doi.org/10.57125/fs.2023.03.20.01>