

Perceptions of Generative AI for Inclusive Instruction Among Educators

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Abstract: This study explored the role of generative artificial intelligence (GenAI) in supporting inclusive and accessible learning environments using survey data from over 800 educators. As tools such as ChatGPT are rapidly integrated into classrooms, offering potential support for differentiation, accessibility features, and administrative tasks, questions remain regarding educators' preparedness and confidence to use these tools effectively. This research examined educators' perceptions of the benefits and ethical risks of GenAI, particularly as they related to instruction for students with diverse learning needs. Using a mixed-methods survey approach, the study investigated whether this emergent technology had the potential to advance accessible learning for all or instead, contribute to existing systemic inequities affecting vulnerable students. Results showed that educators used GenAI with purpose, and considered how it fit with their instructional responsibilities, beliefs about learning, and commitments to equitable support for students. The educators described weighing potential benefits for personalization and differentiation against concerns about ethical use, accuracy, and students' independence and critical thinking. Overall, the findings suggest that GenAI use is often moving ahead of formal training and institutional guidance, highlighting the need for clearer ethical expectations and targeted professional learning to support equitable and accessible implementation.

Keywords: artificial intelligence, special education, ethics, professional development, accessibility, technology.



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1. Introduction

Generative Artificial Intelligence (GenAI) has rapidly emerged across educational settings, creating both opportunities and challenges for teaching and learning. GenAI tools such as ChatGPT, Gemini, and Copilot are increasingly integrated into teaching and learning, offering educators support with lesson planning, translation, differentiation, accessibility, and administrative tasks (Delello et al., 2024; Melo-López et al., 2025; U.S. Department of Education, 2023). Recent research suggests that these tools may play an important role in inclusive education through supports such as language translation, text simplification, personalized learning, and assistive writing technologies that address barriers experienced by students with diverse learning needs (Khlaif et al., 2025; Valle Escolano, 2023).

However, questions remain regarding educators' readiness to adopt GenAI, their perceptions of its benefits and risks, and the extent to which these tools can mean-

ingfully support inclusive and accessible instruction across diverse contexts (Delello et al., 2024; Khlaif et al., 2025). Although GenAI shows potential in supporting diverse learners, its integration into classrooms continues to raise concerns such as bias, overreliance, data privacy, and inequitable access, particularly for students from historically marginalized or underserved communities (UNESCO, 2023; U.S. Department of Education, 2023). This study examines educators' knowledge, use, and perceptions of GenAI as they relate to inclusive and accessible teaching practices, including their confidence, concerns, professional learning needs, and awareness of institutional and policy guidance.

2. Literature Review

2.1. *Artificial Intelligence and Generative AI in Education*

Artificial Intelligence (AI) was formally conceptualized in the mid-twentieth century as a field focused on creating machines capable of performing tasks associated with human intelligence (Turing, 1950; McCarthy et al., 1956). Turing proposed that if a machine could successfully imitate human conversation, it could demonstrate a form of reasoning that resembled human thought (Turing, 1950). While largely theoretical at the time, this emphasis on language and interaction remains especially relevant for educational contexts where communication, comprehension, and access are central concerns. Building on these early ideas, McCarthy and his colleagues advanced this thinking at the 1956 Dartmouth Conference, suggesting that “every aspect of learning or any other feature of intelligence can in principle be so precisely described that a machine can be made to simulate it” (McCarthy et al., 2006, p. 12). This assumption that learning processes could be modeled computationally laid important groundwork for later applications of AI in education, including systems designed to support diverse learners.

Over time, AI evolved through developments in machine learning (ML), neural networks, and natural language processing (NLP). These advances led to the emergence of Generative AI (GenAI), which is capable of producing original content, including text, images, audio, and code, based on learned patterns (He et al., 2025; Storey et al., 2025). Early conversational agents such as ELIZA (Weizenbaum, 1966) represented foundational attempts at human computer interaction, while more recent transformer-based architectures have enabled the development of large language models (LLMs) trained on extensive datasets (Al-Amin et al., 2024; Bartlett et al., 2025). These models analyze the semantic structure of written language and generate new texts that resemble human-authored discourse (Kalantzis & Cope, 2025).

As GenAI capabilities expanded, applications such as Claude, DALL-E-3, Microsoft Copilot, and Google Gemini brought these technologies into everyday use and demonstrated their potential for communication and learning (Giannakos et al., 2024). Awareness of GenAI increased rapidly following the release of ChatGPT in November 2022, including within education, where questions of access, equity, and instructional relevance quickly emerged alongside enthusiasm for innovation (Open Innovation Team and Department for Education, 2024; UNESCO, 2023). OpenAI (2025) noted that “this widening adoption underscores our belief that access to AI should be treated as a basic right, a technology that people can access to unlock their potential and shape their own future” (para. 2). For inclusive education, this framing

raises important questions about who has access to these tools, how they are used, and whose learning needs they ultimately serve (De Giuseppe et al., 2025a).

2.2 GenAI and Education

International data underscore the widespread and ongoing need for inclusive and accessible instructional practices. Globally, UNICEF estimates that more than 240 million children are living with disabilities, although differences in reporting systems complicate cross-national comparisons (UNICEF, 2021; UNESCO, 2020). In Italy alone, national statistics from ISTAT report approximately 359,000 students with disabilities, representing about 4.5% of the school population during the 2023–2024 academic year (ISTAT, 2025). Taken together, these figures highlight the scale of learner diversity within contemporary educational systems and reinforce the importance of examining how emerging technologies such as GenAI intersect with efforts to advance inclusion and accessibility in everyday instructional practice.

Within educational settings, GenAI is increasingly used for content creation, lesson planning, assessment design, feedback generation, workload reduction, and accessibility support (Delello et al., 2024; U.S. Department of Education, 2023). While generative technologies are relatively new, AI has a longer history in education through adaptive and intelligent tutoring systems (ITS). These systems personalize instruction by adjusting learning pathways based on student performance, engagement, and response patterns (Holmes et al., 2019). By providing individualized feedback, scaffolded practice, and adaptive pacing, ITS have demonstrated the potential to support learners with diverse abilities and learning needs (Delello et al., 2024; Gligorea et al., 2023). As GenAI tools begin to incorporate adaptive features, they increasingly overlap with personalized learning approaches that aim to respond to individual learner variability rather than uniform instructional pathways (Giannakos et al., 2024).

Recent research suggests that these tools may play an important role in inclusive education through supports such as language translation, text to speech, speech to text, personalized learning, and assistive writing technologies that address barriers experienced by students with diverse learning needs (Khlaif et al., 2025; Valle Escolano, 2023). For example, for multilingual learners, translation tools can reduce language barriers and increase access to instructional content and classroom participation (UNESCO, 2023). For students with disabilities, GenAI may provide writing scaffolds, adapt reading materials, and provide alternative representations of content aligned with diverse learning profiles (Zhao et al., 2025). Yet, researchers have emphasized that these tools may support inclusion only when they are intentionally aligned with instructional goals rather than applied as a “one-size-fits-all solution” (Lopez-Gazpio, 2025, p. 1).

In special education contexts, researchers are beginning to examine how GenAI may support work related to Individualized Education Programs (IEPs) and Behavior Intervention Plans (BEPs) (Goldman et al., 2024). These tasks are both time-intensive and high-stakes, as they directly influence instructional decision making for students with disabilities. Moreover, Goldman et al. (2024) suggested that AI tools may help reduce administrative workload through documentation support, progress monitoring, and instructional adaptation. Waterfield et al. (2025) also found that AI-generated IEP goals can be comparable in quality to teacher-written goals. However, both

studies emphasized that professional judgment and human oversight remain essential to ensure that AI-supported processes do not undermine individualized planning or legal and ethical responsibilities.

Scholars consistently argue that inclusive AI design is essential to avoid deepening existing educational inequities (Jain, 2025). Inclusion has been defined as a transformative process that ensures full participation and access to quality learning opportunities (De Giuseppe et al., 2025a). for all learners, while respecting diversity and eliminating discrimination in and through education (IIEP-UNESCO, 2019). From this perspective, inclusive education requires strengthening education systems so they can effectively welcome and support learners who experience barriers related to disability, language differences, socioeconomic status, migration, or structural inequities (UNESCO, 2017). When aligned with principles of Universal Design for Learning (UDL), GenAI tools may contribute to a more inclusive learning environment, particularly when implementation is guided by ethical considerations, equity-oriented design, and educator expertise (Ayala, 2024; Saborío-Taylor & Rojas-Ramírez, 2024).

Despite ongoing global commitments to inclusive education, equitable access to learning remains inconsistent and is shaped by factors such as poverty, disability, language diversity, and digital divides (UNESCO, 2020). Educators have reported increasing workload demands related to planning, documentation, and responding to diverse learner needs (De Giuseppe et al., 2025b). These pressures may further contribute to heightened stress and burnout (Hester et al., 2020) and may influence how educators perceive the potential of GenAI, either as a tool to streamline routine workload demands (e.g. instructional planning) or as an additional responsibility that must be carefully managed within inclusive practice.

2.3 Policy, Ethics, and Governance of AI in Education

Although GenAI technologies have advanced rapidly, regulatory and policy frameworks have developed at a much slower pace. As a result, educators face ongoing uncertainty related to data privacy, intellectual property, algorithmic bias, and ethical use within educational environments (UNESCO, 2023). These concerns are particularly relevant in inclusive settings, where instructional decisions may directly affect students who rely on accommodations, assistive support, or alternative representations of content. Because AI systems are trained on large datasets that can reflect historical inequities, they also risk reproducing biases related to race, language, disability, or socioeconomic status (Schwartz et al., 2022).

International and national policy frameworks emphasize that AI integration in education must prioritize inclusion, equity, accessibility, and transparency. UNESCO's *Guidance for Generative AI in Education and Research* (2023) and the *Beijing Consensus on Artificial Intelligence and Education* (2019) both call for teacher empowerment, strong data protection measures, and responsible governance structures. Within the United States, the U.S. Department of Education (2023) similarly stressed the importance of clear institutional policies, targeted professional learning, and sustained human oversight in the use of AI for teaching and learning. Empirical research indicates that educators want explicit guidance to support ethical and appropriate AI use, including expectations for student engagement, protections for privacy, and safeguards against overreliance on automated outputs (Delello et al., 2025).

From an inclusive education perspective, effective AI governance must ensure equitable access, limit the impact of biased or inaccurate outputs, and protect learners who may be more vulnerable to harm or misrepresentation (UNESCO, 2023; U.S. Department of Education, 2023). In the absence of clear policy guidance and ongoing professional development, responsibility for ethical and inclusive GenAI use is often placed on individual educators. This lack of systemic support may hinder the ability of schools to implement GenAI in ways that advance inclusion rather than unintentionally reinforce existing inequities.

2.4 Research Gap

Although the use of AI in education continues to expand, there remains limited research examining how educators use GenAI to support inclusive and accessible teaching in everyday classroom and professional contexts (Giannakos et al., 2024; Khlaif et al., 2025; Zawacki-Richter et al., 2019). Much of the existing literature emphasizes technological tools and capabilities rather than educators' perceptions, instructional practices, and lived experiences, particularly as they relate to accessibility and support for diverse learners (Al-Amin et al., 2024; Holmes et al., 2022; López-Gazpio, 2025; Sánchez Prieto et al., 2021; UNESCO, 2023). In addition, research examining teacher readiness, ethical implementation, and the pedagogical use of GenAI for differentiation remains limited (Kong et al., 2023; Zhao et al., 2025).

Given educators' central role in shaping classroom implementation, understanding their knowledge, use, and concerns related to GenAI is critical (De Giuseppe et al., 2025a). For example, Wang et al. (2025) reported that despite increasing attention to GenAI in education, research on its use, effects, and challenges within special education contexts remains extremely limited.

This study contributes to the growing body of research by examining not only how educators use GenAI for inclusive and accessible teaching, but also how they interpret its risks, ethical implications, and institutional readiness. The following research questions guided this study:

1. To what extent are educators knowledgeable about GenAI tools?
2. How do educators use GenAI to support inclusive teaching practices?
3. What concerns do educators report regarding the use of GenAI in educational settings?
4. To what extent are educators aware of GenAI-related institutional and policy guidance?
5. What recommendations do educators offer for improving the use of GenAI for inclusion?

3. Methodology of the Study

This study employed a mixed-methods design, combining quantitative survey data and open-ended qualitative responses to examine educators' knowledge, use, and perceptions of GenAI as they relate to supporting inclusive and accessible teaching practices.

3.1 Survey Design and Questions

Data were collected through an online Qualtrics (Qualtrics.com) survey developed to explore educators' experiences with GenAI in relation to inclusive and accessible instruction. The survey consisted of four demographic questions asking about gender, race/ethnicity, years of experience in education, and the participant's current professional role. The survey also included four multiple-choice items assessing familiarity with GenAI, frequency of use, the purposes for which educators used tools (e.g., ChatGPT), and which AI tools they used to support accessibility and inclusive practices. A multi-stem Likert-scale question with 15 items was included to measure perceptions of GenAI related to inclusive teaching, accessibility, personalization, instructional support, professional judgment, and policy guidance.

The final section of the survey included four open-ended questions asking respondents to describe their concerns about the use of GenAI in education, the forms of training or support they believed would strengthen GenAI use for inclusive and accessible practice, examples of innovative ways they use GenAI to support inclusion, and their perceptions of whether GenAI is able to create personalized support for diverse learners.

3.2 Study Recruitment

Participants were recruited through university courses, educational listservs, and professional educator networks. Faculty members also shared the survey link with students in teacher preparation and graduate programs. Eligible participants were at least 18 years old, identified as in-service or pre-service educators, and provided electronic informed consent before beginning the survey. Upon opening the survey, participants viewed an online consent page explaining the purpose of the study, confidentiality protections, and their right to skip questions. The study was approved by the Institutional Review Board at the researchers' institution.

3.3 Participant Demographics

A total of 1,088 individuals accessed the survey. Gender was reported by 808 participants, with most identifying as female ($n = 618$, 76.5%), followed by male ($n = 188$, 23.3%), with two respondents selecting Other ($n = 2$, 0.2%). Race or ethnicity was reported by 804 participants. Most identified as White or Caucasian ($n = 708$, 88.1%), followed by Hispanic or Latino/a ($n = 48$, 6.0%), Asian ($n = 2$, 0.2%), Black ($n = 1$, 0.1%), and Other ($n = 45$, 5.6%).

Participants represented a range of professional experience in education. Among the 803 respondents who reported their years in education, the largest group indicated 0 to 5 years ($n = 324$, 40.3%), followed by 6 to 10 years ($n = 279$, 34.7%). Smaller groups reported 11 to 15 years ($n = 81$, 10.1%), 16 to 20 years ($n = 42$, 5.2%), or more than 20 years ($n = 77$, 9.6%).

Professional role was reported by 802 of the participants. Nearly half identified as in-service K–12 teachers enrolled in a university course ($n = 359$, 44.8%), while 248 participants (31.0%) self-identified as pre-service teachers. Smaller groups included teaching assistants or instructional aides ($n = 9$, 1.1%), higher education faculty ($n = 4$, 0.5%), and administrators in K-12 or higher education settings ($n = 2$,

0.2%). An additional group selected Other ($n = 180$, 22.4%), and described roles not captured by the predefined categories, such as instructional designers, district staff, and educational technology professionals.

4. Data Analysis

Quantitative data from demographic items and closed-ended survey questions were analyzed using descriptive statistics, including frequencies, percentages, means, and standard deviations. Because items were optional, the number of responses differed across survey questions. To explore selected relationships among key variables, nonparametric analytic approaches were used due to the ordinal nature of the Likert-scale data. These analyses included chi-square tests with Cramér's V reported as an effect size measure, Spearman's rank-order correlations, and Kruskal–Wallis tests. The purpose of these analyses was to examine patterns, associations, and group differences in educators' responses rather than to generate predictive or causal models.

Open-ended responses were analyzed using a thematic approach. Members of the research team independently reviewed the responses and applied initial codes to identify recurring patterns related to concerns about GenAI for inclusion and accessibility, perceived training needs, innovative uses of GenAI in inclusive teaching, and perceptions of personalization in contrast to standardization. Through an iterative analytic process, codes were compared, discussed, and refined, with related codes organized into broader themes and subthemes. This process supported analytic rigor and strengthened the trustworthiness of the qualitative findings.

5. Educator Knowledge and Use of GenAI tools

When asked, “How knowledgeable are you about Generative AI (GenAI) (e.g., ChatGPT, Gemini, Claude, Copilot)?,” educators reported a range of familiarity. In fact, 397 of 803 educators (49.4%) described themselves as moderately knowledgeable and 329 (41.0%) as slightly knowledgeable. Smaller numbers of educators reported being extremely knowledgeable ($n = 44$, 5.5%) or not knowledgeable at all ($n = 33$, 4.1%).

In response to the question, “How often do you use GenAI such as ChatGPT?,” 273 of 803 educators (34.0%) reported using GenAI a few times a week, and 246 (30.6%) reported using it rarely. An additional 136 educators (16.9%) reported using GenAI a few times a month, 85 (10.6%) indicated daily use, and 63 (7.8%) reported that they never used GenAI.

When educators were asked the question, “For what purposes do you use GenAI like ChatGPT?,” the most frequently selected response was general inquiries and factual information ($n = 408$; 52.0%). Academic support was selected by 258 educators (32.9%), followed by professional tasks ($n = 242$; 30.9%), creative writing and content creation ($n = 223$; 28.4%), and personal support ($n = 176$; 22.4%). Entertainment-related use was less common ($n = 54$; 6.9%), and 52 educators (6.6%) selected Other. Of those who selected Other, 36 provided written responses, which were categorized into themes shown in Table 1.

Table 1. *Other Purposes for Using GenAI*

Category	<i>n</i> (%)	Representative Participant Excerpts
Non-Use	16 (44.4)	“I do not use it”; “never used”; “none”; “not at all”; “not used”; “I never use it”
Classroom Instruction	7 (19.4)	“Instructional presentations”; “creating the foundation for instructional materials”; “student activities”; “teaching/instructional tasks”
Research	2 (5.6)	“Personal research and teaching support”; “searching for lists of scientific studies”
Language Support	4 (11.1)	“translator”; “text corrector/proofreading tool”; “text corrections”; “mainly for translations”
Image Creation	2 (5.6)	“Creation of images”; “image generator”
Technical	1 (2.8)	“Support in programming development”
Fun	1 (2.8)	“Fun (divertimento)”
Unclear	3 (8.3)	“Internal design”, “Italia”

Inferential analyses indicated no significant association between years of teaching experience and GenAI knowledge, suggesting that familiarity with these tools does not vary meaningfully by experience level among educators regardless of experience level ($\chi^2 = 17.40$, $p = .135$, Cramér’s $V = .085$).

5.1 *Educators’ Use of GenAI to Support Inclusive and Accessible Teaching Practices*

Participants were asked to rate their agreement with sixteen statements describing how they use GenAI to support inclusive and accessible teaching practices. Responses were captured using a five-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*), with an additional *unsure* option (see Table 2).

With respect to confidence, a majority of Educators agreed or strongly agreed that they “understand how GenAI can be used to support inclusive teaching practices” ($n = 619$, 77.3%). Just over half of the Educators ($n = 452$; 57.5%) agreed or strongly agreed that they “feel confident adapting GenAI outputs to meet diverse learner needs.” In contrast, fewer participants reported adequate preparation, with only 297 educators (38.2%) agreeing or strongly agreeing that they “have received adequate training on how to use GenAI responsibly for inclusive education.”

Educators reported using GenAI in multiple ways to support instructional adaptation. A majority indicated that they “use GenAI to adapt lesson materials for students with different learning needs” ($n = 507$, 65.5%) and “use GenAI to help create scaffolds (e.g., simplified explanations, guided steps)” ($n = 538$, 70.2%). Nearly half of the educators ($n = 359$, 47.4%) agreed or strongly agreed that they “use GenAI to support writing student support documents such as IEPs or BEPs, or to create modifications/accommodations for students with diverse learning needs.”

Educators also identified accessibility-specific applications. For the statement “I use GenAI to support accessibility tasks (e.g., captions, alt text, summaries),” 459 educators (61.0%) agreed or strongly agreed. Similarly, 494 educators (65.2%) agreed or strongly agreed that GenAI helps them “make course content more accessible for students with disabilities or diverse learning preferences.”

Personalization was also frequently reported, as 451 educators (60.3%) agreed or strongly agreed that “GenAI improves my ability to personalize learning experiences for students.” Further, 417 educators (55.4%) agreed or strongly agreed that “GenAI can help affirm and support diverse student identities (e.g., multilingual, first-generation, culturally diverse learners).” Time-related benefits were also prominent, as more than two-thirds of educators ($n = 514$, 68.4%) indicated that “GenAI saves me time in preparing inclusive or differentiated materials.”

Educators also reported concerns related to GenAI use. For example, 276 educators (36.8%) agreed or strongly agreed that “I worry that GenAI outputs may contain bias that could disadvantage some students,” while 379 educators (50.1%) agreed or strongly agreed that “Over-reliance on GenAI may undermine my professional judgment in supporting diverse learners.” Relational concerns were also evident, as 431 educators (57.5%) agreed or strongly agreed that “Over-reliance on GenAI could reduce students’ sense of belonging in the classroom.”

5.2 Policies and Guidelines

Educators responded to two items on the Likert scale about institutional and broader policy expectations (see Table 2). For the item “My institution has clear policies on how GenAI should be used to support inclusive teaching,” 249 educators (33.9%) agreed or strongly agreed, 135 educators (18.4%) selected unsure, and 351 educators (47.8%) disagreed or strongly disagreed. For the item “I am aware of national or international guidelines that address GenAI in inclusive education,” 226 educators (30.6%) agreed or strongly agreed, while 145 (19.6%) selected unsure, and 367 (49.7%) disagreed or strongly disagreed.

Table 2 Participant Agreement on GenAI and Inclusive and Accessible Teaching Practices

Statement	Strongly Agree n (%)	Agree n (%)	Unsure n (%)	Disagree n (%)	Strongly Disagree n (%)
I understand how GenAI (e.g., ChatGPT, Gemini, Copilot) can be used to support inclusive teaching practices ($N = 795$)	122 (15.3%)	497 (62.6%)	117 (14.7%)	44 (5.5%)	15 (1.9%)
I feel confident adapting GenAI outputs to meet diverse learner needs ($N = 786$)	58 (7.4%)	394 (50.1%)	197 (25.1%)	94 (12.0%)	43 (5.5%)

Statement	Strongly Agree <i>n</i> (%)	Agree <i>n</i> (%)	Unsure <i>n</i> (%)	Disagree <i>n</i> (%)	Strongly Disagree <i>n</i> (%)
I have received adequate training on how to use GenAI responsibly for inclusive education (<i>N</i> = 778)	53 (6.8%)	244 (31.4%)	183 (23.5%)	146 (18.8%)	152 (19.5%)
I use GenAI to adapt lesson materials for students with different learning needs (<i>N</i> = 774)	91 (11.8%)	416 (53.7%)	79 (10.2%)	62 (8.0%)	126 (16.3%)
I use GenAI to help create scaffolds (e.g., simplified explanations, guided steps) (<i>N</i> = 766)	98 (12.8%)	440 (57.4%)	68 (8.9%)	61 (8.0%)	99 (12.9%)
I use GenAI to support writing student support documents such as IEPs or BEPs, or to create modifications/accommodations for students with diverse learning needs (<i>N</i> = 757)	54 (7.1%)	305 (40.3%)	152 (20.1%)	154 (20.3%)	92 (12.2%)
I use GenAI to support accessibility tasks (e.g., captions, alt text, summaries) (<i>N</i> = 753)	71 (9.4%)	388 (51.5%)	125 (16.6%)	93 (12.4%)	76 (10.1%)
GenAI helps me make course content more accessible for students with disabilities or diverse learning preferences (<i>N</i> = 758)	87 (11.5%)	407 (53.7%)	125 (16.5%)	85 (11.2%)	54 (7.1%)
GenAI improves my ability to personalize learning experiences for students (<i>N</i> = 748)	75 (10.0%)	376 (50.3%)	125 (16.7%)	110 (14.7%)	62 (8.3%)
GenAI can help affirm and support diverse student identities (e.g., multilingual, first-generation, culturally diverse learners) (<i>N</i> = 753)	61 (8.1%)	356 (47.3%)	171 (22.7%)	110 (14.6%)	55 (7.3%)
GenAI saves me time in preparing inclusive or differentiated materials (<i>N</i> = 751)	111 (14.8%)	403 (53.7%)	91 (12.1%)	49 (6.5%)	98 (13.0%)
I worry that GenAI outputs may con-	48 (6.4%)	228	193	81 (10.8%)	199

Statement	Strongly Agree <i>n</i> (%)	Agree <i>n</i> (%)	Unsure <i>n</i> (%)	Disagree <i>n</i> (%)	Strongly Disagree <i>n</i> (%)
tain bias that could disadvantage some students (<i>N</i> = 749)		(30.4%)	(25.8%)		(26.6%)
Over-reliance on GenAI may undermine my professional judgment in supporting diverse learners (<i>N</i> = 757)	96 (12.7%)	283 (37.4%)	151 (19.9%)	85 (11.2%)	128 (16.9%)
Over-reliance on GenAI could reduce students' sense of belonging in the classroom (<i>N</i> = 750)	114 (15.2%)	317 (42.3%)	141 (18.8%)	59 (7.9%)	119 (15.9%)
My institution has clear policies on how GenAI should be used to support inclusive teaching (<i>N</i> = 735)	40 (5.4%)	209 (28.4%)	135 (18.4%)	111 (15.1%)	240 (32.7%)
I am aware of national or international guidelines that address GenAI in inclusive education (<i>N</i> = 738)	30 (4.1%)	196 (26.6%)	145 (19.6%)	116 (15.7%)	251 (34.0%)

5.3 Inferential Relationships Among Training, Use, and Confidence

Inferential analyses were used to examine relationships among selected variables related to training, use, and confidence. Spearman's rank-order correlations indicated that educators' confidence in adapting GenAI outputs for diverse learners was moderately associated with their perception of having received adequate training ($\rho = .40, p < .001$). Confidence was also positively related to self-reported familiarity with GenAI tools ($\rho = .25, p < .001$) and to frequency of GenAI use ($\rho = .37, p < .001$).

A Kruskal–Wallis test did not indicate significant differences in confidence across professional role categories ($H(2) = 0.23, p = .89$). By contrast, educators' level of concern about bias varied by frequency of GenAI use ($H(2) = 6.62, p = .036$). Educators who used GenAI a few times per month reported slightly higher levels of concern about bias ($M = 3.14$) than those who used GenAI very frequently ($M = 2.88$) or very rarely ($M = 2.96$).

5.4 GenAI Tools Used to Support Inclusion

Following the Likert-scale items, educators were asked to identify which specific GenAI tools they had used to support inclusive teaching or student accommodations. This item was completed by 784 educators. ChatGPT was the most frequently selected tool, reported by 590 educators (75.3%). Gemini was selected by 379 educators

(48.3%), and translation tools such as DeepL, Microsoft Translator, and Google Translate were chosen by 236 educators (30.1%).

A smaller proportion of educators reported using tools designed to support instructional production and accessibility. Copilot was selected by 142 educators (18.1%), text-to-speech applications such as Speechify, Murf AI, ElevenLabs, and Natural Reader by 87 educators (11.1%), writing or grammar tools such as Grammarly, QuillBot, Ghotit, and Ginger by 62 educators (7.9%). Tools intended to support collaborative or inclusive communities of practice (e.g., Teams with Copilot, Slack with AI, Miro with AI, Notion AI, Padlet, Wakelet) were selected by 102 educators (13.0%).

Less frequently reported tools reflected more specialized accessibility or instructional uses. Some educators ($n = 11$; 1.4%) identified Otter.ai or similar transcription tools, 25 (3.2%) selected Microsoft Immersive Reader or Read Aloud, eight (1.0%) chose Diffit, 50 (6.4%) selected MagicSchool, and 12 educators (1.5%) selected Eduaide or Brisk Teaching as tools they had used. In addition, 34 educators (4.3%) selected the *Other* option for this item. Of these, 28 educators (3.6%) provided written responses, naming additional tools such as TeachyAI, Perplexity, Claude, NotebookLM, Gamma, DeepSeek, Meta AI, and others.

5.5 Greatest Concerns about using GenAI for Inclusion and Accessibility

When educators were asked, “What is your greatest concern about using GenAI for inclusion and accessibility?”, the open-ended responses were examined for recurring patterns (see Table 3). The most frequently occurring concern centered on dependence on AI, in which 98 of the educators (17.3%) expressed fear that students and teachers may become overly reliant on GenAI tools. For example, some educators described concerns that GenAI might replace effort, reduce initiative, or create dependency, as reflected in comments such as, “We risk people no longer being able to work independently,” and “Students could become dependent and stop trying on their own.”

Concerns related to cognitive engagement were also prominent. The theme loss of critical thinking ($n = 87$; 15.3%), highlighted that GenAI use may weaken analytical reasoning, reflection, and problem-solving skills. For instance, several educators emphasized the risk of students “no longer thinking for themselves” or “accepting answers without reasoning.” Another theme involved accuracy and misinformation ($n = 74$; 13.0%), with educators questioning the reliability and correctness of GenAI outputs. Several educators expressed concerns about the risk of incorrect or outdated information being taken as truth, particularly in instructional and accessibility contexts.

Ethical and systemic concerns were also evident in the data. The theme ethical use, privacy, and misuse ($n = 68$; 12.0%) captured worries about data privacy, misuse of personal information, plagiarism, and inappropriate use of AI for academic work or institutional documentation. Equity-related issues were reflected in the theme inequitable access and disability barriers ($n = 61$; 10.7%), as educators worried that GenAI tools may disadvantage students with limited technological access or insufficient accessibility supports. Educators also expressed concern about generic or inadequate responses ($n = 48$; 8.5%), noting that GenAI may produce overly general solutions or fail to personalize responses for some students. Several educators raised concerns

about job security ($n = 43$; 7.6%), indicating fears that AI technologies could undermine the professional role of educators or devalue human expertise.

Additionally, lack of training and knowledge ($n = 40$; 7.0%) reflected educators' sense of being underprepared to use GenAI responsibly and effectively for inclusive practices. Some educators expressed unsure or limited understanding ($n = 37$; 6.5%), indicating that they did not feel sufficiently informed to articulate a clear concern. Responses included statements such as, "I don't know enough yet to judge," and "I'm not fully informed." Finally, a small group reported no concern reported ($n = 12$; 2.1%), indicating they had no major concerns about the use of GenAI for inclusion and accessibility.

Table 3 *Educators' Concerns About GenAI for Inclusion and Accessibility*

Theme	n (%)	Representative Participant Excerpts
Dependency on AI	98 (17.3%)	"We risk people no longer being able to work independently." "Students might become dependent on it." "Over-reliance could replace real learning."
Loss of critical thinking	87 (15.3%)	"Students might stop thinking for themselves." "It could weaken reasoning skills." "They may accept answers without reflection."
Accuracy and misinformation	74 (13.0%)	"Not all the information is correct." "It may give wrong or outdated answers." "I fear misinformation being taken as truth."
Ethical use, privacy, and misuse	68 (12.0%)	"Privacy is my biggest concern." "It can be misused for cheating." "Data protection is unclear."
Inequitable access and disability barriers	61 (10.7%)	"Not everyone has equal access." "Students with disabilities may face barriers." "It could increase the digital divide."
Generic or inadequate responses	48 (8.5%)	"The answers can be too generic." "It does not consider individual needs well." "It lacks real personalization."
Job security	43 (7.6%)	"I fear teachers will be replaced." "It might devalue the role of educators." "Human professionals are being sidelined."
Lack of training and knowledge	40 (7.0%)	"I am not adequately trained." "We lack guidance on how to use it properly." "More training is needed before using it."
Unsure or limited	37 (6.5%)	"I don't know enough yet to judge."

Theme	n (%)	Representative Participant Excerpts
understanding		“I am not fully informed on this topic.” “I’m unsure what my concern should be.”
No concern reported	12 (2.1%)	“No concerns.” “I do not have any worries about AI use.” “I see no major problems yet.”

5.6 Training or Resources Needed to Implement AI for Inclusive Practices

When educators were asked, “What training or resources would help you use GenAI more effectively for inclusive teaching?”, a total of 488 open-ended responses were analyzed. The most frequently identified need involved training focused on practical classroom applications ($n = 162$; 28.3%), with educators requesting hands-on professional development focused on real instructional scenarios as educators emphasized a desire for examples directly tied to lesson adaptation and inclusive classroom practices (see Table 4).

The second most common theme involved ethical and responsible use training ($n = 121$; 21.2%). Respondents described the need for clearer guidance related to privacy, plagiarism, and appropriate classroom implementation of GenAI tools. Concerns related specifically to accessibility and inclusion strategies also emerged prominently ($n = 98$; 17.1%), particularly for supporting students with disabilities and diverse learning needs.

Additional themes included requests for technical and tool-specific training ($n = 74$; 12.9%), institutional support and clearer guidelines ($n = 53$; 9.3%), and additional time or workload support ($n = 31$; 5.4%) to adequately learn and apply these technologies. A smaller group of educators emphasized the value of peer collaboration and shared practices ($n = 22$; 3.8%) as a resource for professional growth. A limited number of responses were categorized as unsure or do not know ($n = 12$; 2.1%) due to lack of specificity or awareness.

Table 4 Training Needed to Implement Inclusive Practices

Theme	n (%)	Representative Participant Excerpts
Training on practical classroom applications	162 (28.3%)	“Professional development focused on real classroom applications.” “Workshops with concrete examples of inclusive classroom use.” “Hands-on training tied to lesson planning.”
Ethical Use	121 (21.2%)	“Training on ethical use and privacy.” “How to avoid misuse and plagiarism.” “Clear rules on responsible use.”

Theme	n (%)	Representative Participant Excerpts
Accessibility and inclusion-specific strategies	98 (17.1%)	“How to use AI for students with disabilities.” “Workshops on inclusive and accessible tools.” “Support for adapting materials for special needs.”
Technical and tool-specific training	74 (12.9%)	“How to use specific tools like ChatGPT better.” “Training on different platforms.”
Institutional support and guidelines	53 (9.3%)	“Clear institutional policies.” “School guidance on how to integrate AI.” “Official recommendations from the institution.”
Time and workload support	31 (5.4%)	“More time to learn these tools.” “Reduced workload to explore GenAI.” “Time allocated for training.”
Peer collaboration and sharing practices	22 (3.8%)	“Sharing experiences with colleagues.” “Communities of practice.” “Collaborative learning groups.”
Unsure/Do not know	12 (2.1%)	“I don’t know what would help.” “Not sure.” “I have no idea yet.”

5.7 Innovative Ways to Support Inclusive Teaching

Responses to the open-ended question, “What is the most innovative way you have used GenAI to support inclusive teaching?” yielded 484 coded units across 433 educators. Because many responses included more than one idea, coding was conducted at the unit-of-meaning level rather than by whole response, and these units were grouped into ten thematic categories (see Table 5).

The largest proportion of responses fell into the theme not used or unsure. Ninety-five educators reported that they had not yet used GenAI in an innovative way or did not feel sufficiently trained, noting statements such as “I haven’t used it yet” or “I don’t think I know enough to use it creatively.” A related set of responses was classified as unclear or ambiguous ($n = 133$, 30.7%), where educators provided short or vague statements that did not clearly describe an instructional use of GenAI (e.g., “generally” or “depends on the situation”).

Among responses describing instructional applications, image-based materials emerged as a prominent theme, appearing in 78 responses (18.0%). For example, educators frequently described creating concept maps, diagrams, comics, and other visual supports to enhance comprehension. One participant explained, “I transformed a theatrical text into a set of pictures to color so that students could follow the story.”

The theme of adaptation and personalized learning was reflected in 77 responses (17.8%) that described simplifying texts, producing differentiated exercises, creating

personalized learning pathways, or adapting materials for specific disabilities. For example, one educator shared, “I adapt texts and activities to the different cognitive levels of the class,” and another described modifying reading passages specifically for a student with autism.

Lesson planning and instructional design also emerged as a distinct theme, appearing 43 times (9.9%). Educators used GenAI to develop lesson plans, scaffolds, assessments, or inclusive learning sequences as illustrated in the following statement: “GenAI helped me prepare a lesson that involved everyone, including children with disabilities.”

Other themes occurred less frequently yet illustrated the breadth of educators’ experimentation with GenAI. Nineteen responses described uses related to translation and multimodal access supports ($n = 19$; 4.4%), including generating audio materials or translating content for multilingual learners. Research uses were noted by thirteen educators (3.0%), who turned to GenAI to better understand unfamiliar topics. Eleven responses (2.5%) reflected collaborative learning, such as designing peer-to-peer activities or structuring group interactions. An additional eleven responses (2.5%) involved games and interactive engagement tools, including digital games or other playful activities intended to increase accessibility. A small number of educators described using GenAI for preparation of professional documents ($n = 4$; 0.9%), such as writing IEP-related materials or developing structured supports for students with disabilities.

Table 5 *Innovative Uses of GenAI for Inclusive Teaching*

Theme	Definition	n (%)	Verbatim Representative Excerpts
Adaptation/Personalized Learning	Creating personalized materials tailored to specific students’ needs.	77 (17.8%)	“I simplify texts and adapt materials to the specific needs of students with SLD.” “Decoding a text by adapting it to a student with Autism.”
Translation and Multimodal Access Supports	Translation, text-to-speech, audio versions, or other multimodal accessibility features.	19 (4.4%)	“Translations for foreign students.” “Audio translations of texts.”
Collaboration	Use of GenAI to support peer collaboration or cooperative learning structures.	11 (2.5%)	“Organize groups to make all the children collaborate learn together.” “To encourage collaboration and an alternative approach with peers.”
Preparation of Professional Documents	Use of GenAI to create or	4 (0.9%)	“I used GenAI for the com-

Theme	Definition	n (%)	Verbatim Representative Excerpts
sional Documents	streamline professional documentation (IEP, BEP, ARD).		pilation of the IEP.” “Preparing IPUs.”
Research	Using GenAI to gather information, deepen content knowledge, or support inquiry.	13 (3.0%)	“Used for personal research only.” “I searched through AI for the key points of topics I did not know.”
Image-Based Materials	Creating image-based instructional supports (concept maps, diagrams, visuals, slideshows).	78 (18.0%)	“The creation of diagrams, cards and maps.” “I created a comic about biodiversity.”
Lesson Planning and Instructional Design	Generating lesson plans, units, assessments, structured activities, or inclusive instructional sequences.	43 (9.9%)	“Preparing lessons that involve everyone, even children with disabilities.” “Creating inclusive lesson units with differentiated tasks.”
Games and Interactive Engagement Tools	Use of GenAI to create games, gamified tasks, or interactive learning activities.	11 (2.5%)	“Created a useful game for consolidation in geography.” “Educational games to capture students’ attention.”
Not Used/Unsure	Respondents who had not used GenAI or felt insufficiently trained to use it innovatively.	95 (21.9%)	“I don't think I have yet identified an innovative way because I do not yet fully know the various features.” “I don't have the proper knowledge for an innovative use.”
Unclear/Ambiguous	Responses that were too vague, incomplete, or unrelated to determine a meaningful instructional use.	133 (30.7%)	“App range.” “Generally.”

5.8 Personalized Support for Learning

A thematic analysis of 502 open-ended responses to the question, “Do you believe GenAI can truly help create personalized support for diverse learners, or does it risk producing generic, one-size-fits-all solutions?” identified variation in educators’ perspectives (see Table 6).

The majority of educators expressed mixed or conditional views ($n = 256$; 51.0%). These educators generally believed that GenAI can support personalization, but only when its use is guided by sufficient detail and teacher expertise. Some of the educators emphasized that personalization depends on prompt quality or professional oversight. For example, one educator noted, “It can personalize if I provide enough context,” while another explained, “Yes, but only with careful guidance.”

A substantial group of educators ($n = 141$; 28.1%) described GenAI as giving mostly personalized responses. These educators viewed GenAI as capable of producing tailored explanations or resources that adapt to individual student needs. One participant commented that GenAI “adapts well to different students,” and another stated that it “can personalize content effectively.”

Concerns about generalized or one-size-fits-all outputs were expressed by 81 educators (16.1%). These educators cautioned that GenAI may default to standardized responses when prompts lack detail or when learners’ needs are highly specific. Several educators explicitly described outputs as “generic,” noting statements such as, “It gives generic answers,” and “Responses feel standardized.”

A smaller number of educators expressed uncertainty or limited experience ($n = 24$; 4.8%), noting that they had not used GenAI enough to determine whether it personalizes effectively. Statements such as “I do not know” or “I haven’t used it enough to say” reflected this perspective.

Table 6 *Perceived Ability of GenAI to Support Personalized Learning*

	Theme Description	<i>n</i> %	Representative Excerpts
Mixed / Conditional	Educators stated that GenAI can sometimes personalize responses but only with sufficient prompting or teacher oversight.	256/51.0%	“It can personalize if I provide enough context.” “Yes, but only with careful guidance.” “It depends on how detailed my input is.”
Mostly Personalization	Educators reported that GenAI generally provides individualized or tailored responses.	141/28.1%	“Yes, it adapts well to different students.” “It can personalize content effectively.”
Mostly Generalized	Educators indicated that GenAI often produces generalized, one-size-fits-all responses.	81/16.1%	“It gives generic answers.” “No, responses feel standardized.”
Unsure / Limited	Educators expressed uncertainty or	24/4.8%	“I do not know.”

Theme	Description	<i>n</i> %	Representative Excerpts
ited Experience	noted a lack of experience using GenAI		“I haven’t used it enough to say.”

Discussion

This study examined educators’ knowledge, use, and perceptions of GenAI in relation to inclusive and accessible teaching practices. The findings highlight growing engagement with GenAI but also persistent gaps in training, policy guidance, and institutional support. While many educators appear willing to explore GenAI as a tool for inclusion, their responses suggest that adoption often occurs ahead of formal structures designed to support ethical and effective use.

A majority of the educators (77.3%) reported understanding how GenAI can be used to support inclusive teaching, yet only about one-third noted that they had received adequate training. This imbalance suggests that many educators are developing GenAI-related competencies through self-directed means rather than through coordinated professional learning. The qualitative findings reinforce this interpretation, as educators consistently requested training focused on practical classroom applications, ethical use, and accessibility-specific strategies. These results may indicate that awareness of GenAI is expanding more rapidly than institutional capacity to support its use, which may contribute to uneven or inconsistent implementation across educational contexts.

Inferential analyses provide further insight into how educators develop confidence in using GenAI. Confidence in adapting GenAI outputs for diverse learners was associated with familiarity, frequency of use, and perceptions of having received adequate training. These relationships signify that confidence develops through a combination of hands-on experience and guided learning rather than professional role or years of teaching experience. Additionally, educators who used GenAI at moderate levels expressed slightly higher concerns about bias than those who used it very frequently or very rarely. This pattern seems to reflect a growing awareness of GenAI’s limitations as educators move beyond initial experimentation and engage more critically with its outputs.

The findings also indicate that many educators are already using GenAI in ways that align with inclusive teaching practices. For example, educators described using GenAI to adapt lesson materials, create instructional scaffolds, and support accessibility-related tasks such as summarization and alternative formats. Nearly half of educators agreed that GenAI improves their ability to personalize learning, and a majority reported that it saves time when preparing inclusive or differentiated materials. These uses closely reflect principles of the UDL framework, particularly its emphasis on flexible approaches to representation, engagement, and instructional support (Meyer et al., 2014).

Qualitative responses further illustrate how educators are translating GenAI into inclusive practices. Educators described adapting texts for learners with dyslexia, creating multimodal supports for neurodiverse students, and developing visual or interactive materials to enhance comprehension. Some educators also reported using

GenAI to support administrative responsibilities within special education, including the preparation of IEP- or BEP-related documents. While nearly half of educators reported using GenAI for documentation tasks, only a small proportion identified these uses as innovative. This pattern suggests that educators tend to view GenAI-supported documentation as a form of administrative support rather than as an instructional innovation, a perspective that aligns with prior research showing that AI may assist educators by reducing workload rather than transforming instructional practice (Goldman et al., 2024).

Educators also expressed clear concerns about the implications of GenAI for inclusion and accessibility. The most frequently reported concerns involved dependency on AI, diminished critical thinking, and the accuracy of GenAI outputs. These concerns align with broader discussions about cognitive offloading and the potential effects of automated systems on learner autonomy and reasoning (Gerlich, 2025). The educators in this study worried that overreliance on GenAI could reduce students' persistence with challenging tasks or encourage acceptance of generated content, even when outputs are inaccurate or outdated.

Ethical, privacy, and equity-related issues were also prominent. Educators expressed concern about data protection, plagiarism, and responsible use, as well as unequal access to GenAI tools for students with disabilities or limited technological resources. These concerns are especially relevant given that fewer than one-third of educators reported that their institution had clear policies related to GenAI use, and many indicated uncertainty about existing guidelines. The absence of clear institutional direction may place the burden of ethical decision making on individual educators and increase the risk of inconsistent or inequitable implementation.

A smaller group of educators raised concerns about job security and the potential reduction in professional expertise. Although these concerns were not dominant, they reflect broader debates about the role of AI in education and underscore the importance of framing GenAI as a tool that supports, rather than replaces, educator judgment. This perspective was echoed in responses related to personalization, where most educators viewed GenAI's capacity to personalize learning as conditional rather than automatic. More than half of educators emphasized that GenAI supports personalization only when guided by strong human oversight, while others viewed its output as either largely personalized or largely generic. These findings reinforce the central role of educators in GenAI-supported instruction.

Overall, the findings point to a recurring tension between efficiency and ethics. Educators valued GenAI for its potential to save time and support differentiated planning, yet they remained attentive to risks related to overreliance, bias, and diminished professional judgment. Rather than adopting GenAI uncritically, the educators in this study appeared to be actively considering how these tools align with their current instructional responsibilities, beliefs about learning, and commitments to equitable student support.

Limitations and Conclusion

This study has several limitations. The data were self-reported, and participation was voluntary, resulting in varying response rates across survey items. Survey fatigue may have influenced the depth or completeness of responses, particularly in the later sections of the instrument. Qualitative responses also varied in length and detail, and given the size of the dataset, only representative excerpts could be included. In addi-

tion, unequal access to GenAI tools may have shaped educators' experiences and perceptions. As a result, the findings should be interpreted as descriptive rather than generalizable to all educators.

Future research should examine how GenAI-supported inclusive practices develop over time, how they differ across educational levels and contexts, and how they affect specific learner groups, including students with disabilities and those who encounter systemic barriers to education. Further work is also needed to explore the relationship between institutional guidance, educator training, and equitable GenAI implementation.

Overall, this study suggests that educators view GenAI as a tool with meaningful potential to support inclusive and accessible teaching. At the same time, educators emphasized that this potential depends on intentional design, ethical use, clear policy guidance, and sustained human judgment.

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