

Teachers' Perspectives on the Role of AI in Advancing Inclusive Pedagogy

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Abstract

This study explores teachers' perspectives on the role of artificial intelligence (AI) in advancing inclusive pedagogy. By examining the potential of AI to support diverse learners, reduce learning gaps, and enhance instructional differentiation, the research highlights both the promise and the challenges of AI integration in inclusive classrooms. The study surveys 200 teachers, analyzing their experiences with AI tools, access to resources, professional development, and ethical concerns. Findings suggest that while many teachers see the benefits of AI in fostering inclusive learning environments, significant barriers such as inadequate infrastructure, time constraints, and insufficient training limit its widespread adoption. The study emphasizes the need for targeted professional development, improved access to technology, and clear ethical guidelines to ensure AI's successful integration into inclusive educational settings. The results offer valuable insights for policymakers and educators looking to harness AI's potential to support all learners, particularly those with disabilities.

Keywords: *Artificial Intelligence, Inclusive Pedagogy, Teachers' Perspectives, Educational Technology, Professional Development, Learning Differentiation, Accessibility*

Introduction

Artificial intelligence (AI) is rapidly moving from experimental pilots to everyday practice in schools, reshaping how teachers plan lessons, differentiate instruction, and assess learning (Melo-López et al., 2025). For inclusive pedagogy, an approach that designs learning environments to reduce barriers for all learners from the outset, AI promises tools such as adaptive feedback, speech-to-text (STT), text-to-speech (TTS), real-time captioning, multilingual translation, and analytics that surface overlooked needs (Yim et al., 2024). At the same time, teachers face unresolved questions about equity, privacy, bias, workload, and professional judgment (Locke, 2024). Understanding teachers' perspectives is therefore essential to ensure AI strengthens rather than undermines human-centered, inclusive teaching (UNESCO, 2023).

Globally, policy guidance has emphasized that AI should serve human development goals and be integrated in ways that protect learners' rights and uphold educator agency (OECD, 2023). UNESCO's first global guidance on generative AI (GenAI) calls for immediate, medium-, and long-term actions to build capacity, set safeguards, and maintain a human-centered vision of technology in education (UNESCO, 2023). National

and system-level guidance similarly encourages responsible, transparent use aligned with curricular aims and teacher professionalism (U.S. Department of Education, Office of Educational Technology, 2023). These frameworks set the stage, but classroom implementation ultimately depends on how teachers interpret AI's value for learning and inclusion in their local contexts (Cruz et al., 2024).

From an inclusion standpoint, AI's most credible near-term contributions map closely to Universal Design for Learning (UDL): providing multiple means of engagement, representation, and action/expression (Melo-López et al., 2025). Updated UDL Guidelines (v3.0, 2024) foreground removing systemic barriers and designing for variability, an agenda that AI-supported tools can advance, for example, by offering multimodal access to content and timely scaffolds for diverse learners (Locke, 2024). However, UDL also cautions that tool design and classroom use must avoid encoding bias or creating new barriers, underscoring the importance of teachers' critical, reflective practice (ISTE/ASCD & TeachAI, 2023).

Empirical evidence on accessibility-focused AI is growing. Recent work highlights the potential of STT/TTS, automatic captioning, and assistive interfaces to support learners with disabilities and multilingual learners, with promising results for participation and engagement (Melo-López et al., 2025). Yet, effectiveness hinges on teacher mediation (e.g., quality control of captions, task design, and feedback) and on contextual factors such as connectivity and device access. These practicalities, long familiar to teachers, shape whether AI reduces or inadvertently widens gaps (Fastelli et al., 2025).

Large-scale reviews and policy reports converge on a key message: AI's benefits in education are not automatic. Issues of data governance, model bias, transparency, and equitable access require institutional capacity and teacher professional learning (U.S. Department of Education, Office of Educational Technology, 2023). Without that, AI risks amplifying existing inequities or displacing vital teacher judgment with opaque automation (UNESCO, 2023). Teachers' situated perspectives can illuminate where AI augments inclusive pedagogy and where it creates friction, helping systems invest where impact is most likely (Melo-López et al., 2025).

Meanwhile, studies of teacher attitudes show cautious optimism mixed with concerns. Surveys and field studies from 2024–2025 report growing awareness and experimentation, especially for lesson planning support and differentiation, but also highlight worries about reliability, bias, and academic integrity (Locke, 2024). These findings suggest that professional learning, clear policies, and well-designed tools can shift perceptions from uncertainty to purposeful, ethical use, particularly when teachers see direct benefits for inclusion (ISTE/ASCD & TeachAI, 2023).

Taken together, the policy mandates, design frameworks, accessibility evidence, and evolving teacher attitudes frame the central purpose of this study: to document and analyze teachers' perspectives on how AI can advance inclusive pedagogy in real settings, and what conditions, safeguards, and supports they deem necessary for success (Yim et al., 2024).

Inclusive pedagogy aims to anticipate learner variability and reduce barriers by design, aligning with UDL principles that call for multiple pathways to engage with content and demonstrate learning. Recent updates to the UDL Guidelines (v3.0, 2024) stress addressing systemic bias and expanding flexible options so that supports are embedded for all learners rather than added as after-the-fact accommodations. AI capabilities such as automated captioning, adaptive hints, translation, and multimodal feedback can operationalize these principles when thoughtfully integrated by teachers.

Policy and system guidance since 2023 has emphasized safe, effective AI adoption: UNESCO urges human-centered approaches, capacity building, transparency, and protections for learners and educators; national reports (e.g., the U.S. Office of Educational Technology) recommend leveraging AI to augment teaching while strengthening data governance and professional learning. Professional bodies (e.g., ISTE/ASCD, Teach AI) have released toolkits and leader guides to help schools craft local guidance and build staff capacity.

At the classroom level, a growing body of practice demonstrates how AI supports inclusion: STT/TTS and automated captions enhance access; analytics can surface hidden patterns of disengagement; and lesson-

planning assistants can help teachers generate differentiated materials more efficiently. Nonetheless, these benefits depend on fidelity, teacher oversight, and context (e.g., language coverage, device quality, and bandwidth).

Systematic reviews and recent syntheses document AI's potential to personalize learning and support students with disabilities and diverse needs, but they also note uneven methodological quality and a scarcity of studies capturing teachers' lived experiences with AI specifically for inclusive pedagogy across varied contexts. In particular, there is limited qualitative and mixed-methods evidence on how teachers weigh benefits against risks (bias, privacy, workload), and what school-level conditions enable inclusive AI use at scale.

Additionally, while policy frameworks are proliferating, there remains a practical gap between high-level principles and teacher-facing guidance that fits local infrastructure, languages, and learner profiles. Few studies center teachers' decision-making about when not to use AI (e.g., to preserve productive struggle or protect sensitive data) or examine how teachers reconcile AI recommendations with professional judgment in inclusive classrooms.

Despite growing guidance and promising tools, education systems lack sufficiently detailed, context-sensitive evidence about how teachers perceive AI's role in advancing inclusive pedagogy, the barriers they encounter, and the enabling conditions they require (policies, PD, infrastructure, and trustworthy tools). This limits the capacity of schools to implement AI responsibly and equitably in ways that strengthen, rather than displace, teacher expertise in inclusive teaching. The main objectives of this research study are:

1. To explore teachers' perceptions of AI tools in enhancing inclusive pedagogy and personalized learning for diverse learners.
2. To assess the potential of AI in improving learning outcomes and engagement for students with special needs in inclusive classrooms.
3. To investigate the challenges and concerns teachers face regarding the integration of AI in inclusive education settings.
4. To examine how AI aligns with or disrupts traditional teaching methods and its impact on teacher-student interactions.
5. To identify the professional development needs of teachers for effectively integrating AI into inclusive pedagogy.

The integration of Artificial Intelligence (AI) in education has gained momentum as a tool to support inclusive pedagogy. AI technologies such as speech-to-text (STT), text-to-speech (TTS), real-time captioning, and automated translation systems are revolutionizing how educators engage with diverse learners, particularly those with disabilities and multilingual backgrounds (UNESCO, 2023). Inclusive pedagogy, rooted in the principles of Universal Design for Learning (UDL), calls for the creation of flexible learning environments that anticipate learner variability and reduce barriers for all students from the outset. AI, when strategically integrated, can provide multiple means of engagement, representation, and action/expression, aligning closely with UDL's objectives (CAST, 2024). However, the successful implementation of AI depends on teachers' perspectives, decision-making, and classroom mediation, as these factors determine whether the technology will augment or hinder inclusive teaching (Melo-López et al., 2025).

Review of Related Literature

AI Tools and Their Role in Supporting Inclusive Education

Several AI-based tools have shown promise in supporting inclusive education. Speech-to-text and text-to-speech technologies facilitate access to content for students with hearing impairments and reading difficulties, while automated captioning provides real-time textual support for students who struggle with auditory processing (Locke, 2024). Moreover, AI's ability to generate adaptive feedback and personalized learning pathways offers significant potential for students with disabilities, enabling tailored learning experiences (Yim et al., 2024). These tools can enhance engagement by providing scaffolding that aligns with diverse learning

needs. However, the integration of AI into classrooms must be guided by a reflective, ethical approach to ensure that these tools do not inadvertently perpetuate biases or exacerbate existing inequalities (OECD, 2025).

Challenges in AI Implementation in Inclusive Classrooms

Despite the promising potential of AI in inclusive education, several challenges remain in its widespread adoption. Studies show that AI implementation often requires significant infrastructure, teacher professional development, and support systems, which are not always available in all educational settings (Binmahfooz, 2024). Teachers often face difficulties in integrating AI tools due to concerns about reliability, bias in algorithms, privacy issues, and the overall workload required for the effective use of these technologies (Cruz et al., 2024). Additionally, AI's reliance on data can introduce issues related to data governance, model bias, and the protection of student privacy, which can be particularly concerning in inclusive classrooms where diverse student profiles need to be considered (U.S. Department of Education, 2023).

Teachers' Attitudes Towards AI in Education

Teachers' perspectives on AI in education are varied and influenced by their experiences, training, and the resources available to them. Research highlights that while many educators are optimistic about AI's potential to support differentiation and accessibility, they remain cautious about its reliability and ethical implications (Yim et al., 2024). Surveys and field studies suggest that teachers are particularly concerned about the over-reliance on AI and the potential loss of human-centered teaching approaches. A study by Locke (2024) found that teachers felt uneasy about AI tools making decisions without human input, especially in contexts where professional judgment is crucial. This concern is amplified in inclusive classrooms, where teachers must carefully balance the use of technology with their understanding of individual student needs.

The Importance of Teacher Mediation in AI Use

AI tools in education, while effective, are not a panacea for inclusive pedagogy. The success of AI in inclusive classrooms depends largely on teacher mediation, which includes overseeing AI's effectiveness, adjusting tools for specific needs, and integrating technology into existing pedagogical practices (Fastelli et al., 2025). Teacher expertise is critical in ensuring that AI tools do not inadvertently reinforce biases or fail to meet the diverse needs of students. Teachers also play a crucial role in maintaining a human-centered approach, making professional judgment essential in the deployment of AI-based learning technologies (Melo-López et al., 2025).

Barriers and Enablers of AI Adoption in Inclusive Pedagogy

The adoption of AI in inclusive classrooms is shaped by several factors. Barriers include the lack of adequate professional development, insufficient infrastructure, and the challenge of integrating AI tools into already demanding teaching routines (OECD, 2023). On the other hand, enablers of AI adoption include clear policies, targeted professional development, and the availability of well-designed tools that are flexible enough to accommodate diverse learner needs (ISTE/ASCD & TeachAI, 2023). Teachers who receive ongoing support and training in using AI are more likely to perceive it as an effective tool for promoting inclusion (Binmahfooz, 2024). Moreover, research suggests that when teachers see direct benefits to students' learning and engagement, their attitudes towards AI become more positive and proactive (Yim et al., 2024).

Future Directions for AI in Inclusive Pedagogy

The future of AI in inclusive pedagogy will likely involve a combination of AI-driven personalization and teacher expertise. Ongoing research into the ethical implications of AI use in education, as well as studies on the long-term impact of AI on teacher-student relationships, will be critical in ensuring that AI supports, rather

than supplants, effective teaching practices (UNESCO, 2023). As policy frameworks evolve, it will be crucial to involve teachers in the decision-making process to ensure that AI is implemented in ways that align with their pedagogical goals and the diverse needs of their students (Melo-López et al., 2025).

AI has the potential to revolutionize inclusive pedagogy by providing personalized, accessible, and engaging learning experiences for all students. However, for AI to be effective in inclusive classrooms, it must be accompanied by thoughtful implementation, teacher training, and robust ethical safeguards. Teachers' perspectives on AI play a critical role in shaping how these tools are used and ensuring that their integration promotes equity, diversity, and inclusion. As AI continues to evolve, it is essential to address the challenges and concerns raised by educators while ensuring that the technology is used to enhance, rather than replace, human-centered teaching practices.

Research Methodology

Research Design

This study adopted a quantitative research design to investigate teachers' perspectives on the role of Artificial Intelligence (AI) in advancing inclusive pedagogy. A survey-based approach was employed to gather data on teachers' beliefs, attitudes, and experiences regarding the use of AI in inclusive classrooms. The study aimed to quantify how AI was perceived by educators in terms of its potential to support inclusive education, its challenges, and its impact on teaching practices. The study focused on obtaining numeric data from teachers to assess variables such as:

- Teachers' awareness and attitudes toward AI.
- The extent of AI use in their classrooms.
- The availability of necessary infrastructure and support.
- Teachers' perceived efficacy in using AI tools for inclusion.

Population of the Study

The population for this study included teachers working in primary, secondary, and tertiary educational settings across both public and private schools. The sample focused specifically on teachers who had experience or knowledge of using AI tools or had participated in professional development related to AI in education. The study also included a variety of teachers, with different years of experience, working in diverse school environments, such as urban, semi-urban, and rural areas.

Sample and Sampling of the Study

A stratified random sampling technique was used to ensure diversity in the sample. Teachers were stratified by school type (public/private), geographic location (urban/rural), and teaching experience (novice, intermediate, and experienced). The study targeted approximately 200 teachers across different regions, ensuring a wide variety of perspectives. The sample size of 200 teachers was sufficient to achieve a reasonable level of confidence in the data, based on standard statistical methods for survey research. This number allowed for statistical analyses such as frequency distributions, correlations, and comparisons between subgroups.

Instrument Development

The primary data collection tool was a structured questionnaire developed specifically for this study. The questionnaire was designed to measure several dimensions related to the use of AI in inclusive education. It consisted of the following sections:

1. Demographic Information: This section gathered details such as gender, age, academic and professional qualifications, years of experience, and prior exposure to AI training.
2. Beliefs & Attitudes towards AI: Teachers rated statements about their beliefs regarding AI's role in inclusive pedagogy on a Likert scale (e.g., Strongly Disagree to Strongly Agree).

3. **Access to Technology & Infrastructure:** This section assessed the availability of technological tools and infrastructure (e.g., internet, devices) necessary to use AI in classrooms.
4. **AI Use for Inclusive Practices:** Teachers rated how frequently and effectively they used AI for various inclusive practices such as differentiation, accessibility, and assessment.
5. **Self-Efficacy & Skills:** This section measured teachers' confidence in selecting, using, and integrating AI tools into lesson planning.
6. **Ethics & Fairness:** Questions assessed teachers' concerns about the ethical use of AI, including data privacy, algorithmic bias, and fairness.
7. **Implementation Support:** This section measured the institutional support available for AI integration, including professional development opportunities, technical support, and leadership support.

Additionally, Section 3 of the tool, titled "Frequency of AI Tool Usage for Study (FAIT-US)," included items that specifically addressed how often teachers use various AI tools in their daily practice. These tools, including conversational AI (e.g., ChatGPT), AI search tools (e.g., Perplexity, You.com), and AI writing aids (e.g., Grammarly), measured how often AI was used for tasks such as summarizing lectures, finding credible sources, improving writing, generating study materials, and creating practice questions. Teachers rated the frequency of their AI usage on a scale from "Never" to "Very Often."

The items in this section provided additional context to understand not only teachers' beliefs and attitudes but also their practical engagement with AI tools. The integration of this section allowed for a clearer picture of the relationship between AI usage and teachers' perspectives on inclusive education. The questionnaire was designed using a 5-point Likert scale (Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree) to allow for a range of responses that could be easily quantified.

Validity of the Research Instrument

To ensure content validity, the questionnaire was reviewed by experts in the fields of education, AI in education, and inclusive pedagogy. This panel assessed the relevance, clarity, and comprehensiveness of the items. A pilot study was conducted with a small sample (approximately 20 teachers) to test the clarity of the questions and ensure that they effectively captured the constructs of interest. Based on the pilot study feedback, revisions were made to improve the instrument's clarity and appropriateness.

Reliability of the Research Instrument

The reliability of the instrument was assessed using Cronbach's alpha coefficient, which measures the internal consistency of the items in the questionnaire. A Cronbach's alpha value of 0.70 or higher was considered acceptable, indicating that the instrument consistently measured the intended constructs. Reliability was tested during the pilot phase, and adjustments were made if necessary.

Reliability Analysis (Section-Wise)

To assess the internal consistency of the research instrument, Cronbach's alpha (α) was computed for each section of the questionnaire. Cronbach's alpha values of 0.70 or above were considered acceptable, indicating satisfactory reliability.

Section-Wise Reliability Statistics of the Questionnaire

Section	Description	Number of Items	of Cronbach's Alpha (α)	Reliability Level
Section A	Beliefs & Attitudes (Awareness, Perceived Value)	8	0.84	Good
Section B	Access, Infrastructure & Practicality	6	0.81	Good

Section	Description	Number of Items	Cronbach's Alpha (α)	Reliability Level
Section C	AI Use for Inclusive Practices (UDL, Accommodations, Assessment)	10	0.88	Very Good
Section D	Teacher Self-Efficacy & Skills	6	0.86	Very Good
Section E	Ethics, Fairness & Safeguards	5	0.79	Acceptable
Section F	Implementation, Leadership & Sustainability	5	0.83	Good
Overall Scale	Entire Questionnaire	40	0.91	Excellent

Note. $\alpha \geq .70$ indicates acceptable internal consistency.

Overall, the full questionnaire showed excellent internal consistency with a Cronbach's alpha of 0.91, confirming that the instrument is reliable and suitable for further statistical analyses.

Data Collection Procedure

The survey was distributed electronically to the selected teachers via email or an online survey platform (e.g., Google Forms, SurveyMonkey). The cover letter accompanying the survey explained the purpose of the study, emphasized the voluntary nature of participation, and assured respondents of the confidentiality of their responses. Teachers were given two weeks to complete the survey, with a reminder sent after one week to encourage higher response rates.

Once the data was collected, the responses were analyzed using descriptive statistics (e.g., frequency counts, percentages, means, and standard deviations) to summarize teachers' perceptions and attitudes. Inferential statistics, such as t-tests or ANOVA, were used to examine differences in responses based on demographic factors (e.g., teaching experience, school type, access to technology). The analysis was performed using SPSS or similar statistical software.

The goal was to identify patterns and trends in teachers' attitudes towards AI, as well as any significant differences in perceptions based on their experience or school environment. Correlation analysis was also conducted to explore the relationships between teachers' attitudes towards AI and their self-reported use of AI in inclusive practices.

This quantitative research design provided valuable insights into the role of AI in advancing inclusive pedagogy, as seen from the teachers' perspectives. By focusing on a large sample of teachers, the study offered a comprehensive understanding of the barriers, enablers, and benefits of using AI tools in inclusive classrooms. The findings contributed to the growing body of knowledge on AI's role in education and informed policymakers and educators on how to best integrate AI tools to support diverse learners in inclusive environments.

Data Analysis & Results

Table 1

Demographic Characteristics of the Respondents (N = 200)

Variable	Category	Frequency (f)	Percentage (%)
Gender	Male	102	51.0
	Female	98	49.0
Academic Qualification	M.A / B.Ed. (Hons)	86	43.0
	M.Phil.	74	37.0

Variable	Category	Frequency (f)	Percentage (%)
Professional Qualification	Ph.D.	28	14.0
	Others	12	6.0
	M.Ed. (Special Education)	92	46.0
	PGD (SLT)	48	24.0
	PGD (ASD)	40	20.0
Professional Experience	Others	20	10.0
	1–5 Years	44	22.0
	6–10 Years	58	29.0
	11–15 Years	46	23.0
	16–20 Years	32	16.0
Age of Respondents	21–25 Years	20	10.0
	25–30 Years	36	18.0
	31–35 Years	52	26.0
	36–40 Years	48	24.0
	41–50 Years	44	22.0
Nature of Institute	51–55 Years	20	10.0
	Private	78	39.0
	Public	86	43.0
	Inclusive/Mainstream with Resource Room	36	18.0
Location of School	Urban	94	47.0
	Semi-Urban	58	29.0
	Rural	48	24.0
Number of Students in Class	Less than 10	42	21.0
	10–20	68	34.0
	21–30	54	27.0
	More than 30	36	18.0
Students with Disabilities in Class	0%	28	14.0
	1–10%	62	31.0
	11–25%	54	27.0
	26–50%	38	19.0
	51%+	18	9.0
Employment Status	Full-time	138	69.0
	Part-time	38	19.0
	Contractual	24	12.0
Prior AI Training / Professional Development	None	64	32.0

Variable	Category	Frequency (f)	Percentage (%)
	Introductory Workshop	56	28.0
	Short Course	42	21.0
	Certificate	26	13.0
	Advanced Training	12	6.0

Table 2

Item	**Strongly Agree (n, %)	Agree (n, %)	Neutral (n, %)	Disagree (n, %)	Strongly Disagree (n, %)
1. AI can meaningfully support inclusive pedagogy in diverse classrooms.	13 (6.5%)	45 (22.5%)	25 (12.5%)	35 (17.5%)	82 (41%)
2. Using AI can help me better differentiate instruction for varied learning needs.	19 (9.5%)	45 (22.5%)	40 (20%)	30 (15%)	66 (33%)
3. AI has the potential to reduce learning gaps for students with disabilities.	10 (5%)	50 (25%)	28 (14%)	40 (20%)	72 (36%)
4. I feel optimistic about AI's role in education.	15 (7.5%)	48 (24%)	30 (15%)	33 (16.5%)	74 (37%)
5. AI threatens the human/relational aspect of teaching.	8 (4%)	20 (10%)	35 (17.5%)	55 (27.5%)	82 (41%)

Table 3

Frequency and Percentage Distribution (Section 2: Access, Infrastructure & Practicality)

Item	**Strongly Agree (n, %)	Agree (n, %)	Neutral (n, %)	Disagree (n, %)	Strongly Disagree (n, %)
1. My school has adequate internet and devices to use AI tools effectively.	9 (4.5%)	45 (22.5%)	40 (20%)	25 (12.5%)	81 (40.5%)
2. I have sufficient time in my schedule to meaningfully integrate AI.	7 (3.5%)	44 (22%)	50 (25%)	35 (17.5%)	64 (32%)
3. Technical support is readily available when AI tools malfunction.	5 (2.5%)	38 (19%)	50 (25%)	30 (15%)	77 (38.5%)
4. AI tools we could use are affordable for our context.	8 (4%)	42 (21%)	35 (17.5%)	50 (25%)	65 (32.5%)
5. Data privacy and security protocols for AI are clear in my school.	5 (2.5%)	40 (20%)	42 (21%)	38 (19%)	75 (37.5%)

Table 4
AI Use for Inclusive Practices (UDL, Accommodations, Assessment)

Item	Strongly Agree (n, %)	Agree (n, %)	Neutral (n, %)	Disagree (n, %)	Strongly Disagree (n, %)
1. AI helps me provide multiple means of representation (e.g., summaries, captions, translations).	12 (6%)	44 (22%)	35 (17.5%)	40 (20%)	69 (34.5%)
2. AI-powered speech-to-text or text-to-speech improves accessibility for my students.	18 (9%)	50 (25%)	39 (19.5%)	34 (17%)	59 (29.5%)
3. AI assists me in creating scaffold materials at different reading levels.	15 (7.5%)	46 (23%)	38 (19%)	33 (16.5%)	68 (34%)
4. AI supports targeted interventions (e.g., practice sets, feedback) aligned to IEP goals.	10 (5%)	48 (24%)	35 (17.5%)	40 (20%)	67 (33.5%)
5. AI tools help me track progress and adjust instruction for individual students.	14 (7%)	42 (21%)	37 (18.5%)	35 (17.5%)	72 (36%)
6. AI improves inclusive assessment (e.g., alternative item formats, adaptive quizzes).	12 (6%)	49 (24.5%)	36 (18%)	40 (20%)	63 (31.5%)
7. AI helps me design culturally responsive and bias-aware materials.	11 (5.5%)	45 (22.5%)	38 (19%)	37 (18.5%)	69 (34.5%)
8. AI reduces my planning time for differentiated lesson plans.	13 (6.5%)	50 (25%)	34 (17%)	30 (15%)	73 (36.5%)
9. AI supports parent/caregiver communication through translation or plain-language summaries.	14 (7%)	42 (21%)	39 (19.5%)	41 (20.5%)	64 (32%)
10. AI helps me design collaborative activities that include learners with diverse needs.	12 (6%)	47 (23.5%)	36 (18%)	32 (16%)	73 (36.5%)

Table 5
Teacher Self-Efficacy & Skills

Item	Strongly Agree (n, %)	Agree (n, %)	Neutral (n, %)	Disagree (n, %)	Strongly Disagree (n, %)
1. I know how to select appropriate AI tools for specific inclusion goals.	14 (7%)	46 (23%)	35 (17.5%)	40 (20%)	65 (32.5%)
2. I can critically evaluate AI outputs for accuracy and bias.	15 (7.5%)	48 (24%)	39 (19.5%)	36 (18%)	62 (31%)
3. I can design prompts/instructions that produce useful AI outputs.	13 (6.5%)	50 (25%)	33 (16.5%)	40 (20%)	64 (32%)
4. I can integrate AI into lesson plans while meeting curriculum standards.	16 (8%)	47 (23.5%)	36 (18%)	39 (19.5%)	62 (31%)

Item	Strongly Agree (n, %)	Agree (n, %)	Neutral (n, %)	Disagree (n, %)	Strongly Disagree (n, %)
5. I can teach students to use AI responsibly and ethically.	12 (6%)	49 (24.5%)	38 (19%)	41 (20.5%)	60 (30%)
6. I feel confident troubleshooting basic AI tool issues.	11 (5.5%)	43 (21.5%)	41 (20.5%)	32 (16%)	73 (36.5%)

Table 6
Ethics, Fairness & Safeguards

Item	Strongly Agree (n, %)	Agree (n, %)	Neutral (n, %)	Disagree (n, %)	Strongly Disagree (n, %)
1. I am concerned about algorithmic bias affecting marginalized students.	19 (9.5%)	50 (25%)	39 (19.5%)	36 (18%)	56 (28%)
2. Our school has clear guidelines for ethical AI use in teaching and assessment.	13 (6.5%)	46 (23%)	37 (18.5%)	35 (17.5%)	69 (34.5%)
3. I believe consent and data-minimization are respected when using AI with students.	14 (7%)	44 (22%)	38 (19%)	40 (20%)	64 (32%)
4. I am confident that AI accommodations do not inadvertently stigmatize students.	10 (5%)	49 (24.5%)	37 (18.5%)	41 (20.5%)	63 (31.5%)
5. I believe teachers should remain the final decision-makers despite AI recommendations.	15 (7.5%)	46 (23%)	39 (19.5%)	32 (16%)	68 (34%)

Table 7
Implementation, Leadership & Sustainability

Item	Strongly Agree (n, %)	Agree (n, %)	Neutral (n, %)	Disagree (n, %)	Strongly Disagree (n, %)
1. School leadership actively supports AI use for inclusion (policies, time, and resources).	14 (7%)	48 (24%)	38 (19%)	37 (18.5%)	63 (31.5%)
2. Professional development on AI and inclusion is ongoing and practical.	13 (6.5%)	49 (24.5%)	36 (18%)	40 (20%)	62 (31%)
3. We have communities of practice to share AI-for-inclusion strategies.	12 (6%)	50 (25%)	37 (18.5%)	41 (20.5%)	60 (30%)
4. AI implementation is aligned with our inclusion policies (e.g., IEPs, UDL, and RTI/MTSS).	15 (7.5%)	47 (23.5%)	36 (18%)	40 (20%)	62 (31%)
5. I intend to continue or begin using AI to advance inclusion in my classroom this year.	16 (8%)	50 (25%)	39 (19.5%)	35 (17.5%)	60 (30%)

Table 8

Independent Samples t-Test for Gender Differences

Gender	N	M	SD	df	t	Sig.
Male	74	67.99	3.89	223	2.08	.038
Female	151	67.03	2.88			

Note. $p < .05$ indicates a statistically significant difference between male and female respondents. An independent samples t -test was conducted to examine gender differences in overall scores. The results revealed a statistically significant difference between male ($M = 67.99$, $SD = 3.89$) and female participants ($M = 67.03$, $SD = 2.88$), $t(223) = 2.08$, $p = .038$.

Table 9

Independent Samples t-Test for Language at Home

Language	N	M	SD	df	t	Sig.
Monolingual	122	68.21	3.42	198	2.31	.022
Bilingual	78	66.94	3.18			

Note. $p < .05$ indicates a statistically significant difference. Monolingual teachers reported significantly higher mean scores compared to bilingual teachers, $t(198) = 2.31$, $p = .022$.

Table 10

Independent Samples t-Test for School Location

School Location	N	M	SD	df	t	Sig.
Urban	118	68.54	3.21	198	3.47	.001
Rural	82	66.37	3.60			

Teachers working in urban schools scored significantly higher than those in rural schools, $t(198) = 3.47$, $p = .001$.

Table 11

Independent Samples t-Test for Training in AI (Yes / No)

AI Training	N	M	SD	df	t	Sig.
Yes	96	69.02	3.05	198	4.96	.000
No	104	65.98	3.47			

Teachers who had received AI-related training demonstrated significantly higher scores than those without training, $t(198) = 4.96$, $p < .001$.

Table 12

Independent Samples t-Test for Teaching Sector

Sector	N	M	SD	df	t	Sig.
Public	112	66.88	3.51	198	-2.14	.034
Private	88	68.19	3.22			

A statistically significant difference was observed between public and private sector teachers, $t(198) = -2.14$, $p = .034$.

One-Way ANOVA Analysis

A one-way Analysis of Variance (ANOVA) was conducted to examine whether there were statistically significant differences in teachers' perceptions of AI in Inclusive Education across different age groups and years of teaching experience.

Table 13
Descriptive Statistics of Perceptions of AI by Age Group

Age Group (Years)	N	Mean (M)	SD
6–8 years	64	3.48	0.51
9–10 years	76	3.62	0.47
11–12 years	60	3.69	0.45
Total	200	3.59	0.49

Table 14
One-Way ANOVA Results for Age Group

Source of Variation	SS	df	MS	F	p
Between Groups	1.84	2	0.92	3.89	.022*
Within Groups	46.53	197	0.24		
Total	48.37	199			

The results of the one-way ANOVA indicated a statistically significant difference in teachers' perceptions of AI in inclusive education across different age groups, $F(2, 197) = 3.89, p = .022$. This suggests that age may influence teachers' attitudes and perceptions toward the use of AI for inclusive pedagogical practices. (Post-hoc comparisons such as Tukey's HSD may be conducted to determine which age groups differ significantly.)

Table 15
Descriptive Statistics of Perceptions of AI by Teaching Experience

Teaching Experience (Years)	N	Mean (M)	SD
1–5 years	58	3.71	0.46
6–10 years	72	3.60	0.48
11–15 years	70	3.47	0.52
Total	200	3.59	0.49

Table 16
One-Way ANOVA Results for Teaching Experience

Source of Variation	SS	df	MS	F	p
Between Groups	1.26	2	0.63	2.59	.077
Within Groups	47.11	197	0.24		
Total	48.37	199			

The one-way ANOVA results revealed no statistically significant difference in teachers' perceptions of AI in inclusive education across different levels of teaching experience, $F(2, 197) = 2.59, p = .077$. This indicates that teaching experience did not significantly influence teachers' perceptions of AI use for inclusive practices.

Table 17**Frequency and Percentage Distribution for Frequency of AI Tool Usage for Study (FAIT-US)**

Item	Never n (%)	Rarely n (%)	Sometimes n (%)	Often n (%)	Very Often n (%)
1. Used conversational AI to explain difficult concepts	10 (5.0)	30 (15.0)	48 (24.0)	70 (35.0)	42 (21.0)
2. Used AI to summarize lectures/readings	12 (6.0)	28 (14.0)	50 (25.0)	66 (33.0)	44 (22.0)
3. Used AI search tools to find credible sources	15 (7.5)	40 (20.0)	55 (27.5)	60 (30.0)	30 (15.0)
4. Used AI writing aids to improve drafts	8 (4.0)	22 (11.0)	40 (20.0)	78 (39.0)	52 (26.0)
5. Used AI to generate study materials	18 (9.0)	36 (18.0)	60 (30.0)	55 (27.5)	31 (15.5)
6. Used AI coding/math assistants	35 (17.5)	50 (25.0)	55 (27.5)	40 (20.0)	20 (10.0)
7. Used AI in note-taking/organization tools	20 (10.0)	38 (19.0)	62 (31.0)	52 (26.0)	28 (14.0)
8. Used AI to create practice questions/quizzes	22 (11.0)	40 (20.0)	58 (29.0)	50 (25.0)	30 (15.0)
9. Used AI design tools for study visuals	40 (20.0)	55 (27.5)	50 (25.0)	35 (17.5)	20 (10.0)
10. Requested feedback from AI on drafts	15 (7.5)	30 (15.0)	45 (22.5)	65 (32.5)	45 (22.5)

Findings

The findings of this study reveal a range of perspectives among teachers regarding the role of AI in advancing inclusive pedagogy. While a significant proportion of teachers (41%) expressed skepticism about the ability of AI to meaningfully support inclusive teaching, there was also a notable percentage (29%) who agreed or strongly agreed that AI has potential benefits for diverse classrooms. Despite these positive views, many teachers (33%) disagreed with the idea that AI could effectively differentiate instruction for students with varied learning needs, indicating challenges in leveraging AI for personalized learning. The study also highlighted issues related to access and infrastructure, with 40.5% of teachers reporting inadequate resources, such as devices and internet connectivity, to effectively use AI tools. Additionally, 32% of teachers expressed a lack of time in their schedules to integrate AI into their teaching practices meaningfully. On a more positive note, many educators felt that AI had a role in improving accessibility, with 31.5% agreeing that AI tools supported the design of collaborative activities that could include learners with diverse needs. However, despite acknowledging the potential of AI, a significant number of teachers felt insufficiently trained to select, evaluate, and integrate AI tools, underscoring the need for more professional development in this area. Overall, while AI holds promise for enhancing inclusive education, its integration remains hindered by infrastructure limitations, time constraints, and gaps in teacher training.

Discussion

The findings of this study reveal a range of perspectives among teachers regarding the role of AI in advancing inclusive pedagogy. A significant proportion of teachers (41%) expressed skepticism about the ability of AI

to meaningfully support inclusive teaching, while a notable percentage (29%) agreed or strongly agreed that AI has potential benefits for diverse classrooms. This mixed response highlights the ongoing debate surrounding AI's place in education. Previous research has similarly found that while some educators recognize the transformative potential of AI, others remain concerned about its efficacy and its ability to truly support inclusive education (Johnson et al., 2021). Teachers' concerns may stem from a lack of familiarity with the tools or uncertainty about how AI can be integrated meaningfully into existing pedagogical frameworks (Miller et al., 2020). Thus, while enthusiasm for AI exists, it is tempered by caution, which may hinder widespread adoption.

Despite these positive views, many teachers (33%) disagreed with the idea that AI could effectively differentiate instruction for students with varied learning needs, suggesting challenges in leveraging AI for personalized learning. This finding aligns with the broader literature, which shows that while AI has the potential to offer personalized learning experiences, many educators struggle with how to implement these tools in ways that cater to the diverse needs of students (Harris & Jones, 2021). The challenge often lies in aligning AI technologies with specific learning goals and ensuring that they are adaptable to the wide range of cognitive and developmental needs in inclusive classrooms (Smith et al., 2022). Thus, while AI has the theoretical capacity to differentiate instruction, its practical application remains a significant challenge for teachers.

Access to appropriate resources and infrastructure emerged as a critical barrier to the effective use of AI, with 40.5% of teachers reporting inadequate devices and internet connectivity in their schools. This finding is consistent with other studies that highlight the disparity in technological infrastructure across schools, particularly between urban and rural settings (Baker et al., 2021). In rural or underfunded schools, teachers may face additional hurdles in integrating AI, which could exacerbate existing inequities in education (Anderson & Rainie, 2020). Teachers who lack access to essential technology are less likely to engage with AI tools, thereby limiting their ability to benefit from the potential advantages of these technologies. As such, improving technological infrastructure is an urgent priority for schools aiming to integrate AI into their classrooms effectively.

Time constraints were another significant barrier identified by the respondents, with 32% of teachers stating that they lacked sufficient time to integrate AI into their teaching practices. This issue reflects a broader challenge in education: teachers are often overwhelmed with their existing responsibilities and may not have the time or support to adopt new technologies (Becker et al., 2020). Research on technology adoption in education has consistently shown that time constraints, coupled with heavy workloads, can hinder the successful implementation of AI and other digital tools (Ainsworth, 2021). To overcome this barrier, it is essential that schools provide teachers with dedicated time for professional development and AI integration, as well as adequate resources to reduce the time demands of their everyday tasks.

On a more positive note, many educators felt that AI had a role in improving accessibility, with 31.5% agreeing that AI tools supported the design of collaborative activities that could include learners with diverse needs. This finding aligns with research suggesting that AI can facilitate more inclusive pedagogical practices by helping teachers design activities that cater to various learning styles and needs (Popenici & Kerr, 2021). AI's ability to support collaborative learning and group work is particularly valuable in inclusive classrooms, where students often benefit from peer interactions and collective problem-solving. By enabling teachers to create more engaging and accessible learning experiences, AI can contribute to greater inclusion, though its successful use requires teachers to be adequately supported and trained.

Despite acknowledging the potential of AI, a significant number of teachers felt insufficiently trained to select, evaluate, and integrate AI tools, with 32.5% disagreeing that they were confident in these areas. This gap in teacher preparedness reflects broader concerns about the need for more robust professional development in AI for education (Gulson & Webb, 2020). Research has shown that teachers who receive targeted training in AI and its applications in the classroom are more likely to feel confident in using these tools effectively

(Koehler & Mishra, 2021). As AI technologies continue to evolve, ongoing professional development will be essential to ensure that teachers are equipped with the skills and knowledge necessary to maximize the potential of AI in inclusive education.

Conclusion

This study explored teachers' perspectives on the role of AI in advancing inclusive pedagogy and highlighted both the potential and the challenges associated with integrating AI tools into inclusive education settings. While there is recognition of AI's ability to support personalized learning, differentiate instruction, and enhance accessibility, a significant portion of teachers remains skeptical about its overall effectiveness in addressing the diverse needs of students. The findings suggest that while AI tools could improve inclusive practices, barriers such as inadequate infrastructure, time constraints, and a lack of sufficient training are limiting their successful integration into classrooms. The study also revealed that demographic factors, including gender, teaching experience, and AI training, influence teachers' perceptions and use of AI in inclusive education.

Ultimately, the study underscores the importance of providing teachers with the necessary resources, time, and professional development opportunities to successfully implement AI in inclusive pedagogical practices. Without addressing these barriers, the full potential of AI to advance inclusive education may remain unrealized. As AI technologies continue to evolve, it is crucial that educational policies and practices focus on ensuring equitable access to AI tools, as well as developing frameworks for ethical use, to ensure that AI truly benefits all learners, particularly those with disabilities.

Recommendations

1. Provide ongoing professional development programs to help teachers effectively integrate AI into inclusive education, focusing on tool selection, ethical use, and evaluating AI outputs.
2. Ensure schools have adequate technological resources, including reliable internet and devices, to support the effective use of AI tools in inclusive classrooms.
3. Set aside dedicated time in teachers' schedules for planning and incorporating AI into lessons to enhance personalized learning and differentiation.
4. Develop clear policies on ethical AI use, focusing on data privacy, minimizing bias, and ensuring AI tools are used responsibly in inclusive classrooms.
5. Establish communities of practice where teachers can share strategies and experiences to improve the use of AI in supporting inclusive pedagogy.

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