

Original Article

A Study on Teachers' Perceptions toward the Use of AI as a Support Tool for Students with Learning Disabilities in Mumbai

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Manuscript ID: **Abstract**

JRD -2026-180312

ISSN: 2230-9578

Volume 18

Issue 3

Pp. 66-71

March- 2026

Submitted: 16 Feb. 2026

Revised: 26 Feb. 2026

Accepted: 11 Mar. 2026

Published: 31 Mar. 2026

Globally, artificial intelligence techniques are revolutionizing inclusive education; yet, in urban Indian environments, teacher perceptions are still poorly understood. The current study, "A Study on Teachers' Perceptions Toward the Use of AI as a Support Tool for Students with Learning Disabilities in Mumbai," aims to determine awareness levels and evaluate the effect of training on adoption readiness among Mumbai educators. The study's goal was to find out how teachers felt about AI technologies for helping students with learning difficulties. It was carried out in December 2025. A descriptive design was used in the study. A structured Google Form questionnaire with Likert-scale items in line with the goals was used to collect primary data. Frequency, percentage, and descriptive statistics were used to examine 55 valid replies from school and college teachers (67.3% female, 72.7% from higher education).

The findings showed moderate knowledge (58.2%) but substantial favorable attitudes (87.3% willing to employ AI tools), with major obstacles being infrastructure constraints (81.8%), training requirements (89.1%), and dependability issues (70.9%). Positive correlations between awareness-familiarity and training-readiness were confirmed by the rejection of both null hypotheses.

The study concludes that although Mumbai teachers are open to integrating AI for inclusive education, they still need resources and focused professional development. The results provide policymakers with practical advice on how to reduce perception gaps in order to successfully implement AI in Mumbai's diverse classrooms.

Keywords: AI tools, learning disabilities, teacher perceptions, Mumbai education, training barriers

Introduction

Artificial intelligence (AI) has become widespread in education globally, marking an era of new learning models that are heavily reliant on technology and innovation. AI enables personalized learning by modifying instructional materials according to the unique requirements of each student, which enhances student engagement and motivation levels. AI also promotes accessibility by delivering customized materials for students with diverse needs, thereby eliminating barriers associated with language differences, cognitive abilities, and physical impairments. According to Holmes et al. (2019), AI has the potential to promote inclusive education by providing all students with equal and quality educational opportunities, thereby addressing issues that traditional educational approaches may overlook. AI tools are further elaborated as support tools that play a pivotal role in students with learning difficulties. These tools are used more in students with learning disabilities and they consist of assistive technologies that such as text-to-speech, speech-to-text, interactive applications aimed to help meet the individual's learning needs including the ability to learn with dyslexia, dyscalculia, attention deficit, and others. The adaptive learning platforms designed to dynamically adjust the difficulty and presentation formats depends on the student's learning progress. The implementation of such technologies leads to improved accessibility in the field of special education that can further help address educational inequity and provide inclusive opportunities for learners exposed to challenges to achieve their academic potential. The usefulness of AI tools in classrooms is greatly influenced by teachers' attitudes, experiences, and willingness to adopt new technology, making them essential to the successful integration of AI in educational settings.



Quick Response Code:



Website:

<https://jrdrvb.org/>

DOI:

10.5281/zenodo.19232042



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How to cite this article:

Sheth, H., Gadhiya, V., & Chheda, D. (2026). A Study on Teachers' Perceptions toward the Use of AI as a Support Tool for Students with Learning Disabilities in Mumbai. *Journal of Research & Development*, 18(3), 66–71. <https://doi.org/10.5281/zenodo.19232042>

Teachers' opinions vary, ranging from optimism about AI's potential to support differentiated instruction to worries about the lack of training, ethical issues, and the validity of AI-driven assessments, according to research from publications like the International Journal of Educational Research and Evaluation (IJERE). Comprehending these viewpoints is essential since successful adoption of AI depends on teacher preparedness and professional development. Teachers' confidence in utilizing AI to effectively educate children with learning difficulties can be increased by addressing their concerns and offering sufficient support.

Literature Review

(Papalexandratou & Stathopoulou, 2024) The study emphasizes how artificial intelligence has the ability to improve learning outcomes for kids with learning difficulties by offering customized resources and approaches based on their specific requirements. It highlights how AI might enhance academic achievement and lessen learning-related difficulties, leading to more equal chances in learning environments.

(Sharif et al., 2025) Their study highlights the necessity of teacher preparation and addressing issues like resource limitations and ethical dilemmas. It also emphasizes the significance of AI in revolutionizing STEM education for kids with special needs. The results imply that AI can improve individualized learning experiences, but educators' roles are still crucial to this integration process.

(Mahalakshmi & K, 2025) The study highlights improved accessibility, engagement, and learning outcomes while showcasing the revolutionary potential of AI in creating adaptive learning solutions for students with disabilities. The results point to a promising path for inclusive education, which may be related to instructors' opinions of AI's efficacy, as AI systems considerably exceed conventional approaches in customizing educational experiences.

(Khan & Sujatha, 2025) The difficulties of integrating AI in special education are highlighted in this research, including societal stigma and lack of teacher preparation that may affect teachers' opinions. The study highlights how AI might improve learning results for children with special needs, and it suggests that instructors' perspectives may be crucial to using AI successfully in classrooms.

(Bhimavarapu, 2025) In order to predict student demographics and offer tailored suggestions for inclusive education, this paper focuses on using a Bi-Stacked Artificial Neural Network. The results highlight how AI-driven methods might improve institutional policies and support systems for kids with impairments, but they don't specifically address the opinions or experiences of teachers.

(Koranteng, 2025) This study emphasizes how AI and assistive technology (AT) can significantly improve learning results and access for students with disabilities. Teachers' opinions about AI's place in special education may be indirectly influenced by the review's emphasis on how well AI-powered tools can personalize learning experiences, increase academic engagement, and promote independence.

Gap of the study

While a number of national and international studies have examined AI applications for students with learning disabilities, concentrating on technical capabilities and general implementation challenges, very little research has looked at teachers' opinions of AI's value in this context, especially in regional urban settings like Mumbai. Few studies evaluate teachers' opinions about using AI as a teaching aid or pinpoint their particular perceived difficulties and worries about using it with pupils who have learning problems. Mumbai's multilingual environments, infrastructure constraints, different classrooms, and training gaps all provide distinctive dynamics that affect these impressions, but they are still little studied. By examining Mumbai teachers' opinions on AI's utility, adoption attitudes, and implementation obstacles, this study fills in these gaps and offers crucial information for instructional tactics that are appropriate for the local context.

Research Methodology

Objectives of the study

1. To identify the level of awareness and familiarity Mumbai teachers have with AI tools designed for learning disabilities support.
2. To assess the impact of training on teachers' readiness to adopt AI tools in their teaching practice.

Hypothesis of the Study

H01: There is no significant relationship between teachers' awareness of AI tools and their familiarity with AI tools designed to support students with learning disabilities.

H11: There is a significant positive relationship between teachers' awareness of AI tools and their familiarity with AI tools designed to support students with learning disabilities.

H02: Training has no significant effect on teachers' readiness to adopt AI tools to support students with learning disabilities in their teaching practice.

H12: Training has a significant positive effect on teachers' readiness to adopt AI tools to support students with learning disabilities in their teaching practice.

Significance of the study

This study is significant because it provides valuable information about how Mumbai instructors view AI tools as possibilities for helping children with learning impairments.

Understanding these impressions makes it simpler to identify the factors influencing teacher readiness, such as adoption hurdles, training needs, and awareness gaps.

The findings contribute to the corpus of current literature on AI in Indian education by highlighting the gap between teachers' enthusiasm to use innovative technology and real- world barriers like infrastructure constraints and inadequate training. It also aids teacher trainers, legislators, and school administrators in comprehending educators' perspectives on new educational technologies.

Future research on teacher attitudes, AI adoption tactics, and the changing role of technology in inclusive classrooms throughout urban India can also be guided by this study.

Data Collection and Methods

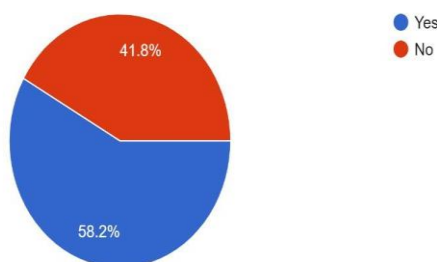
Primary data was gathered from 55 teachers from schools and colleges in Mumbai using a standardized Google Form questionnaire distributed online. The questionnaire included Likert- scale questions (1-5 scale) aligned with the study objectives: awareness and familiarity with AI tools for learning disabilities, and training impact on adoption readiness. Respondents comprised 67.3% female and 32.7% male teachers, with 72.7% from colleges/universities and 27.3% from schools. Data were analyzed using descriptive statistics including frequency, percentage distributions, and mean scores to identify patterns in teacher perceptions.

Research Design

The study employed a descriptive research design to comprehensively understand Mumbai teachers' perceptions toward AI tools for students with learning disabilities. This quantitative approach, based on structured Likert-scale questionnaire data, effectively characterizes respondents' awareness levels, training barriers, and readiness to adopt AI in teaching practice, providing a clear foundation for interpreting the findings relative to the stated objectives.

Data interpretation and analysis

Are you aware of specific AI tools for learning disabilities?
55 responses



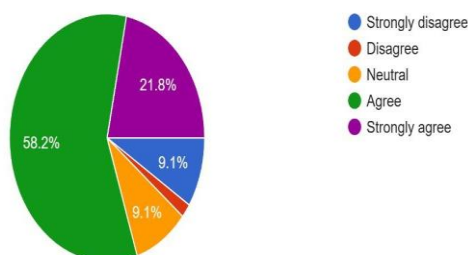
Are you aware of specific AI tools for learning disabilities? Analysis:

The results show that **58.2% of teachers are aware** of AI tools used to support students with learning disabilities, indicating a moderate level of awareness. However, **41.8% of respondents are not aware**, suggesting that knowledge about such tools is not yet widespread among all teachers.

Conclusion

While awareness of AI tools exists among a majority of teachers, a considerable gap remains. This highlights the need for increased awareness and orientation programs for educators.

Do you agree that AI tools that can support students with learning disabilities?
55 responses



Do you agree that AI tools can support students with learning disabilities?

Analysis:

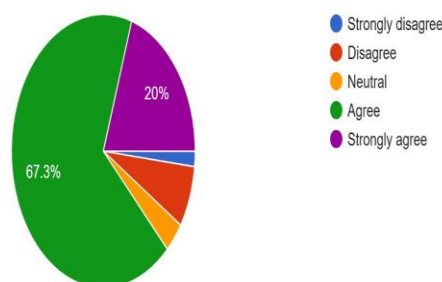
The findings indicate that a large majority of teachers hold a positive perception, with **58.2% agreeing** and **21.8% strongly agreeing** that AI tools can support students with learning disabilities. Only a small proportion expressed disagreement (**9.1% strongly disagree** and **1.8% disagree**), while **9.1% remained neutral**, indicating limited uncertainty among some respondents.

Conclusion

Overall, teachers show a strong positive attitude toward the use of AI tools for supporting students with learning disabilities. This reflects general acceptance of AI's potential role in inclusive education.

Do you agree that AI-based tools should be incorporated in your teaching to support students with learning disabilities?

55 responses



Do you agree that AI-based tools should be incorporated in your teaching to support students with learning disabilities?

Analysis:

The results show strong support for incorporating AI-based tools, with **67.3% of teachers agreeing** and **20% strongly agreeing** with their use in teaching. Only a small percentage expressed disagreement (**7.3% disagree** and **1.8% strongly disagree**), while **3.6% remained neutral**, indicating minimal hesitation among respondents.

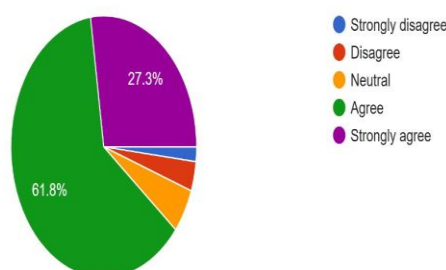
remained neutral, indicating minimal hesitation among respondents.

Conclusion:

The majority of teachers are willing to integrate AI-based tools into their teaching practices. This reflects a positive readiness among educators to adopt AI for supporting students with learning disabilities.

Do you agree that need training to use AI tools effectively for students with learning disabilities?

55 responses



Do you agree that you need training to use AI tools effectively for students with learning disabilities?

Analysis:

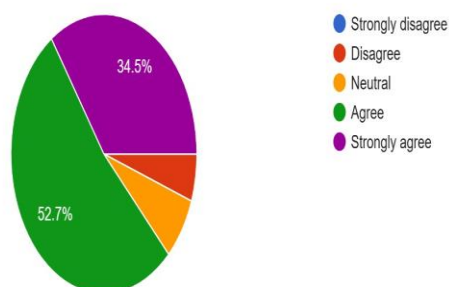
The results indicate that most teachers recognize the importance of training, with **61.8% agreeing** and **27.3% strongly agreeing**. Only a small fraction expressed disagreement (**1.8% strongly disagree** and **3.6% disagree**), while **5.5% remained neutral**, showing that nearly all respondents see training as essential for effective AI use.

Conclusion:

Teachers clearly acknowledge the need for training to use AI tools effectively. Providing structured training programs will be crucial for successful adoption in classrooms.

Do you agree a lack of training would make it difficult for teachers to use AI tools effectively?

55 responses



Do you agree that a lack of training would make it difficult for teachers to use AI tools effectively?

Analysis:

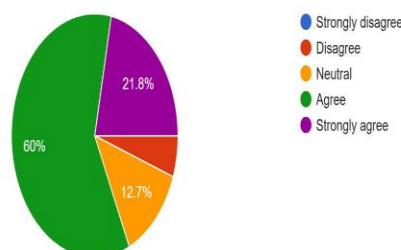
The findings show that most teachers consider training essential, with **52.7% agreeing** and **34.5% strongly agreeing** that lack of training hinders effective use of AI tools. Only **5.5% disagreed**, and **7.3% remained neutral**, indicating that nearly all educators recognize training as a critical factor for successful AI integration.

Conclusion:

Teachers overwhelmingly perceive insufficient training as a barrier to using AI tools effectively. This emphasizes the need for structured training programs to support educators in adopting AI.

Do you agree limited technological resources in educational institutions may prevent effective use of AI tools?

55 responses



Do you agree that limited technological resources in educational institutions may prevent effective use of AI tools?

Analysis:

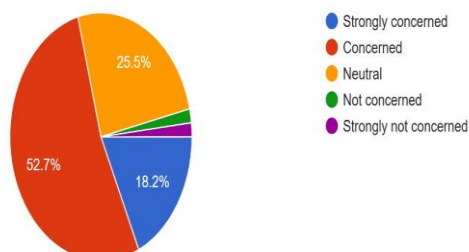
The findings show that the majority of teachers perceive technological limitations as a barrier, with **60% agreeing** and **21.8% strongly agreeing**. Only **5.5% disagreed**, while **12.7% remained neutral**, indicating that most educators recognize infrastructure as a significant factor affecting AI adoption.

Conclusion:

Limited technological resources are viewed as a key obstacle to effective AI use in classrooms. Addressing these constraints is essential to enable successful integration of AI tools.

Are you concerned about the reliability or accuracy of AI tools when used with students with learning disabilities?

55 responses



Are you concerned about the reliability or accuracy of AI tools when used with students with learning disabilities?

Analysis:

The results indicate that a majority of teachers are concerned about AI reliability, with **52.7% expressing concern** and **18.2% strongly concerned**. A smaller portion remained neutral (25.5%), while only 3.6% reported no concern, highlighting that reliability is a significant consideration for educators when using AI tools.

Conclusion

Most teachers have reservations about the accuracy and reliability of AI tools. Addressing these concerns is crucial for fostering trust and effective adoption in classroom

Limitations of the Study

1. The study was based on responses from 55 participants from Mumbai schools and colleges, which may not fully represent the broader teacher population or diverse educational settings.
2. Most respondents belong to urban Mumbai institutions, limiting the generalizability of results to rural teachers or other Indian regions with different infrastructure and cultural contexts.

Conclusion

The results of the survey show that Mumbai instructors have a moderate awareness of AI tools for learning impairments (58.2%), along with strong positive perceptions (80% agreement on value) and a high desire to embrace (87.3%). This shows that instructors are aware of how AI can promote inclusive education, especially when it comes to customized assistive technologies. Significant obstacles still exist, though, with 89.1% recognizing the need for training, 87.2% seeing a lack of training as a barrier, 81.8% pointing to infrastructure constraints, and 70.9% voicing reliability concerns. These opinions draw attention to the disconnect between practical preparedness and enthusiasm for integrating AI. Overall, the findings support both alternative hypotheses and show that awareness-familiarity and training-readiness are positively correlated. Teachers in Mumbai are open to using AI, but they need assurances about reliability, budget allocation, and focused professional development. In order to integrate AI into inclusive education in India in the future, it will be necessary to remove these perception-based obstacles through institutional and regulatory assistance.

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