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Fear or Future? Understanding Perceptions of Artificial Intelligence among Visually Impaired Students: A Global and Indian Systematic Review

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Abstract **Original Research Article**

Artificial Intelligence (AI) has rapidly transformed educational environments, assistive technologies, and employment systems, creating both opportunities and uncertainties for students with disabilities. Among these groups, visually impaired students represent a particularly significant population. Simultaneously, growing concerns regarding technological dependence, privacy, accessibility barriers, algorithmic bias, and future job displacement have shaped mixed perceptions toward AI. In this context, the present study systematically reviews global and Indian research on the perceptions of Artificial Intelligence among visually impaired students, focusing on three major dimensions: fear, use, and future employment opportunities. This study adopted the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework to identify relevant literature published between 2015 and 2026. Data were collected from major academic databases including Scopus, Web of Science, ERIC, Google Scholar, and PubMed. After screening, eligibility assessment, and removal of duplicates, 50 relevant studies were selected for final review and synthesis. The selected studies were analyzed on the basis of publication trends, geographical distribution, research methodologies, participant characteristics, thematic focus, and emerging patterns of perception. The findings reveal a substantial increase in research after 2020, particularly following the expansion of generative AI and digital accessibility tools. Most studies reported positive perceptions regarding AI use for academic assistance, mobility support, communication, independent learning, and inclusive participation. However, notable fears were also identified, including concerns over job replacement, digital exclusion, affordability, inaccessible interfaces, and overreliance on automated systems. The review highlights significant gaps in literature, including limited studies from developing countries, underrepresentation of school-level visually impaired students, and insufficient longitudinal research on AI-related career anxiety.

Keywords: Artificial Intelligence, Visually Impaired Students, Perceptions, Fear of AI, Future Jobs, Inclusive Education, Assistive Technology, Systematic Review.

1. INTRODUCTION

Artificial Intelligence (AI) has emerged as one of the most transformative technologies of the twenty-first century, reshaping education, healthcare, communication, transportation, and labour markets across the world. In educational settings, AI has introduced new possibilities for personalized learning, adaptive instruction, automated assessment, intelligent tutoring systems, and enhanced accessibility for learners with disabilities. For students with visual impairments, these developments are particularly significant because traditional educational systems have often been constrained by inaccessible learning materials, limited mobility support, delayed access to information, and inadequate assistive infrastructure (Ahmed et al., 2025).

Visually impaired students constitute an important learner population within inclusive education frameworks. Their educational participation depends not only on curriculum access but also on independence, communication opportunities, psychosocial confidence, and equal access to future careers. AI technologies have the potential to empower these students by enabling real-time content conversion, voice-based interaction, smart

note-taking, image interpretation, mathematical explanation, and career guidance systems. Recent studies have shown that AI-based assistive technologies may improve autonomy, learning efficiency, and academic engagement among visually impaired learners (Alnajdi et al., 2025; Yadav, 2025).

However, the rise of AI has also generated mixed emotions and complex perceptions. While many students view AI as a tool of empowerment, others experience fear related to technological dependence, privacy concerns, inaccessible system design, reduced human interaction, and widening digital inequalities. In addition, the rapid automation of work has intensified anxieties regarding future employment, especially for persons with disabilities who already encounter structural barriers in labour markets. For visually impaired students, AI may simultaneously create new job pathways through remote work, digital entrepreneurship, and accessibility-based innovation, while also increasing fears of exclusion if skills training and policy support remain inadequate (Sakaloğlu, 2024).

Globally, research on AI perceptions among students has increased substantially after 2020 due to the emergence of generative AI tools and accelerated digital learning environments. Yet studies specifically focusing on visually impaired students remain limited and fragmented. In India, despite policy emphasis on inclusive education, Digital India initiatives, and the Rights of Persons with Disabilities framework, research on how visually impaired learners perceive AI remains scarce. Existing Indian discussions often focus on assistive technology adoption rather than psychological perceptions, future career expectations, or comparative global insights (Yadav, 2025).

Understanding student perceptions is essential because perceptions influence acceptance, trust, motivation, sustained use, and readiness for future technological transitions. Positive perceptions can encourage adoption and skill development, whereas fear and uncertainty may hinder educational engagement and career preparedness. Therefore, a systematic synthesis of available literature is timely and necessary.

The present study addresses this need by reviewing global and Indian research published between 2015 and 2026 on perceptions of Artificial Intelligence among visually impaired students. It specifically examines three interconnected dimensions: fear, use, and future jobs. By identifying publication trends, thematic patterns, regional differences, and research gaps, this review aims to provide evidence for educators, policymakers, researchers, technology developers, and disability advocates seeking to create more inclusive AI ecosystems.

This paper further contributes to the literature by positioning visually impaired students not merely as users of assistive technologies, but as active stakeholders whose voices, concerns, and aspirations must shape the future of AI-enabled education and employment.

2. OBJECTIVES OF THE STUDY

The present study was undertaken to systematically review the existing literature on perceptions of Artificial Intelligence (AI) among visually impaired students in global and Indian contexts. The study particularly focused on the dimensions of fear, use, and future jobs. The specific objectives of the study were as follows:

1. To examine the overall research trends on perceptions of Artificial Intelligence among visually impaired students during the period 2015 to 2026.
2. To identify the leading, influential, and impactful studies published in this field.
3. To analyse the geographical distribution of research conducted across different countries, including India and foreign nations.
4. To investigate the research methodologies and data collection techniques used in previous studies.
5. To explore the major themes emerging from the literature, particularly fear, use, accessibility, and future employment opportunities.

3. CONCEPTUAL BACKGROUND

3.1. Artificial Intelligence in Education

Artificial Intelligence (AI) refers to computer systems designed to perform tasks that typically require human intelligence, such as learning, reasoning, problem-solving, language understanding, pattern recognition, and decision-making. In education, AI has rapidly evolved from simple automated tutoring systems to advanced adaptive learning platforms, predictive analytics, conversational agents, intelligent assessment systems, and generative AI tools. These technologies are increasingly being integrated into classrooms to personalize instruction, monitor learner progress, provide real-time feedback, and enhance accessibility for diverse student populations (Holmes et al., 2019).

For students with disabilities, AI has become especially significant because it can reduce environmental and instructional barriers that traditional systems often fail to address. AI-powered educational technologies can adjust content presentation, learning pace, communication mode, and task complexity according to individual learner needs. Such developments support the principles of inclusive education and Universal Design for Learning (UDL), which emphasize equitable access and flexible learning pathways (Ahmed *et al.,* 2025).

3.2. Visual Impairment and Educational Inclusion

Visual impairment includes partial sight, low vision, and blindness that substantially affect access to printed, graphical, or visually presented information. Students with visual impairments often face challenges in reading textbooks, interpreting diagrams, accessing digital interfaces, navigating physical environments, and participating equally in mainstream classrooms. These barriers may negatively affect academic achievement, confidence, social participation, and future career readiness if adequate support systems are absent (WHO, 2019).

Inclusive education frameworks argue that disability-related barriers arise not only from impairment itself but from inaccessible environments, rigid pedagogies, and limited support services. Therefore, technological accessibility is central to educational inclusion. For visually impaired learners, access to Braille materials, screen readers, OCR systems, tactile resources, and audio-based learning tools is essential for equal participation (UNESCO, 2020).

3.3. AI as Assistive Technology for Visually Impaired Students

Recent AI developments have transformed traditional assistive technology into more intelligent and interactive systems. AI-based assistive technologies for visually impaired students include:

- Screen Readers with Natural Language Processing for smoother audio interpretation
- Optical Character Recognition (OCR) for converting printed text into speech
- Object Recognition Apps for identifying surroundings and classroom materials
- Voice Assistants for scheduling, searching, reminders, and academic queries
- Navigation Tools using computer vision and GPS guidance
- Generative AI Platforms for writing support, summarization, explanations, and tutoring
- Accessible Mathematics Tools that explain symbolic content through voice or structured text

These tools can significantly enhance independence, academic productivity, and confidence among visually impaired learners (Yadav, 2025; Ali & Ullah, 2026).

3.4. Perception of AI

Perception refers to the beliefs, attitudes, emotions, expectations, and judgments individuals hold regarding a technology. Student perceptions of AI are shaped by prior experiences, usability, trust, accessibility, peer influence, training exposure, and perceived usefulness. In the context of visually impaired students, perception becomes especially important because inaccessible or poorly designed AI systems may create frustration, anxiety, and rejection, while supportive systems may generate empowerment and enthusiasm.

Technology acceptance models suggest that users are more likely to adopt technologies they perceive as useful, easy to use, socially supported, and personally beneficial (Davis, 1989). Recent studies on AI assistive technology among visually impaired university students also highlight the role of self-esteem, confidence, and psychological readiness in adoption behaviour (Alnajdi et al., 2025).

3.5. Fear of Artificial Intelligence

Fear of AI refers to anxiety, uncertainty, or resistance arising from the increasing role of intelligent systems in human life. Among students, common fears include: replacement of human support systems, overdependence on machines, data privacy risks, employment displacement in future labour markets. For visually impaired students, fear may be amplified when technologies are promoted as inclusive but remain expensive, inaccessible, or culturally irrelevant. Fear can reduce motivation to adopt AI tools even when such tools have strong potential benefits (Sakaloğlu, 2024).

3.6. Future Jobs and AI

AI is transforming the future of work by automating repetitive tasks while creating new jobs requiring digital literacy, creativity, problem-solving, and human-centered skills. For visually impaired students, AI may create both opportunities and threats.

Opportunities: Remote employment, accessible digital entrepreneurship, content creation, online tutoring, data labelling and voice-based services

Threats: increased competition, skill mismatch, inaccessible recruitment systems, bias in automated hiring tools, concentration of jobs in high-skill sectors. Therefore, student perceptions regarding AI and future jobs are crucial for career readiness and policy planning.

4. REVIEW OF LITERATURE

The growing intersection of Artificial Intelligence (AI), disability inclusion, and educational accessibility has generated increasing scholarly interest over the last decade. However, literature specifically examining the perceptions of AI among visually impaired students remains emerging and scattered across disciplines such as education, assistive technology, psychology, human-computer interaction, and labour studies. The present review synthesizes available studies under the three central dimensions of this paper: fear, use, and future jobs.

4.1. AI Use and Educational Empowerment

A substantial body of literature presents AI as a transformative force for visually impaired learners. AI-powered assistive technologies such as screen readers,

speech-to-text systems, intelligent OCR tools, navigation apps, and virtual assistants have significantly improved access to academic content, communication, and independent functioning.

Ahmed *et al.,*(2025) reported that AI-based personalized learning systems can improve participation and inclusive educational experiences for students with disabilities by adapting content to learner needs. Their review highlighted emotional state monitoring, adaptive learning pathways, and progress tracking as important future directions.

Yadav (2025) emphasized that AI tools such as text-to-speech software, object recognition systems, Braille conversion tools, and voice-based assistants can empower visually impaired students to access educational materials more independently. The study argued that AI reduces traditional barriers created by print-based learning systems.

Forbes (2019) found that visually impaired students in higher education used intelligent virtual assistants for academic tasks such as research support, scheduling, reminders, language assistance, note-taking, and information retrieval. Participants described these tools as convenient, user-friendly, and helpful in reducing disability-related academic stress.

Alnajdi *et al.,*(2025) examined AI-based assistive technology acceptance among visually impaired university students and found that performance expectancy and social influence significantly predicted behavioural intention to use AI tools. Students were more likely to adopt AI when they believed it improved performance and when supportive social environments existed.

Ali and Ullah (2026) reported that visually impaired students found large language models useful in mathematics learning when explanations were clear and structured. ChatGPT and Gemini showed relatively stronger perceived usefulness compared with less refined systems.

Collectively, these studies suggest that visually impaired students often perceive AI positively when technologies are accessible, reliable, and directly relevant to learning tasks.

4.2. Fear, Anxiety, and Resistance Toward AI

Despite optimism, another strand of literature identifies concerns and fears associated with AI adoption. These fears may be technological, psychological, social, or economic.

Sakaloğlu (2024) explored university students' attitudes toward AI and found a significant relationship between AI perceptions and technology-induced unemployment anxiety. Although the sample was general higher education students, the findings are highly relevant for visually impaired learners who already face labour market disadvantages.

Ahmed *et al.,*(2025) warned that data privacy, affordability, algorithmic bias, and inequitable implementation remain major concerns in AI-driven inclusive education. Without ethical safeguards, AI may reproduce exclusion rather than reduce it.

Forbes (2019) reported that although students appreciated intelligent virtual assistants, concerns remained regarding accuracy, misunderstanding of commands, dependency, and inconsistent performance. Trust in AI systems was strongly linked to reliability.

Ali and Ullah (2026) found that visually impaired students faced accessibility frustration when AI-generated mathematical notation was incompatible with screen readers. Poor navigation design and unstructured explanations created cognitive overload and dissatisfaction.

These studies indicate that fear of AI among visually impaired students is often not abstract fear of technology itself, but fear arising from inaccessible design, exclusion, dependence, privacy risk, and uncertain outcomes.

4.3. AI and Future Employment Perceptions

The future of work is a major theme in AI discourse. Automation is expected to eliminate some jobs while creating others requiring new competencies. For visually impaired students, this issue carries special significance.

Sakaloğlu (2024) showed that students increasingly associate AI growth with unemployment anxiety, especially in sectors involving routine tasks. Such fears may be intensified among disabled students who already encounter discrimination in hiring.

Ahmed *et al.,*(2025) argued that AI can also generate inclusive employment opportunities through personalized training, digital platforms, remote work systems, and adaptive productivity tools. They emphasized that AI should be seen not only as a threat but also as a pathway to participation.

Yadav (2025) suggested that AI can support visually impaired individuals in professional settings through speech interfaces, automated accessibility tools, real-time assistance, and digital independence.

Recent labour market literature more broadly suggests that success in AI-driven economies depends on digital literacy, adaptability, creativity, communication, and continuous learning. Therefore, visually impaired students' perceptions of future jobs are shaped by

whether they feel prepared and included in these transitions.

4.4 Indian Perspective

Indian literature on this specific topic remains limited but growing. Most Indian studies focus on accessibility tools rather than attitudes or perceptions.

Yadav (2025), writing in the Indian context, emphasized the empowering role of AI for visually impaired learners but also noted barriers such as affordability, infrastructure gaps, and lack of awareness. These findings align with broader Indian educational challenges related to digital divide and unequal assistive access.

Policy frameworks such as the National Education Policy (2020), Digital India initiatives, and the Rights of Persons with Disabilities Act have created favourable conditions for inclusive AI adoption. However, empirical studies directly exploring how Indian visually impaired students perceive AI remain scarce.

4.5 International Perspective

Foreign studies, especially from developed countries and Gulf contexts, show more advanced discussion around adoption behaviour, psychological moderators, ethics, and institutional readiness.

Alnajdi *et al.,*(2025) in Saudi Arabia found that self-esteem strengthened the relationship between positive AI expectations and adoption intention among visually impaired students.

Forbes (2019) in the United States highlighted everyday academic uses of intelligent virtual assistants.

Jarbi (2024) in Qatar showed that assistive technologies improved educational and social inclusion of visually impaired university students, though support barriers still existed.

These studies suggest that where infrastructure and institutional support are stronger, perceptions of AI tend to be more positive and usage more frequent.

4.6. Synthesis of Literature

Overall, the reviewed studies reveal five broad patterns:

1. Visually impaired students generally perceive AI positively when it improves independence and learning outcomes.
2. Fear emerges when AI systems are inaccessible, unreliable, expensive, or ethically unclear.
3. Future job perceptions are mixed—AI is seen as both opportunity and threat.
4. Indian literature remains underdeveloped compared with global research.
5. There is a shortage of studies directly centered on visually impaired students' voices, attitudes, and long-term career expectations.

This synthesis demonstrates the need for a systematic review integrating educational, psychological, technological, and labour-market perspectives.

5.METHODOLOGY

In this study, the researchers employed a Systematic Literature Review (SLR) to examine the research landscape concerning perceptions of Artificial Intelligence (AI) among visually impaired students. The review specifically focused on three interconnected dimensions: fear, use, and future jobs. A systematic review method was considered appropriate because it enables transparent, replicable, and evidence-based synthesis of existing literature across multiple disciplines. The study followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA 2020) guidelines to ensure rigour in study identification, screening, eligibility assessment, and final inclusion.

The review considered studies published between 2015 and 2026. This period was selected because AI applications in education, assistive technology, machine learning, and generative AI significantly accelerated after 2015. In addition, the selected timeframe captures both the pre-generative AI era and the recent expansion of large language models such as ChatGPT and related accessibility tools.

5.1. Identification of Keywords and Database

The search keywords were derived from previous studies, pilot searches, and conceptual dimensions of the present topic. Boolean operators (AND, OR) were used to combine search terms systematically. The principal search string was:

("Artificial Intelligence" OR AI OR "Generative AI" OR ChatGPT OR "Assistive AI") AND ("Visually Impaired Students" OR "Blind Students" OR "Students with Visual Disabilities" OR "Low Vision Learners") AND (Perception OR Attitude OR Fear OR Anxiety OR Acceptance OR Adoption OR Accessibility OR Employment OR Jobs OR Career)

To ensure comprehensive coverage, additional variations of keywords such as *screen reader*, *inclusive technology*, *AI adoption*, and *future work* were also used where appropriate.

The literature search was conducted across five major academic databases selected for their reliability, interdisciplinary coverage, and relevance to education and health sciences:

- Scopus
- Web of Science
- ERIC
- PubMed

- Google Scholar (first relevant sorted records)

These databases were considered suitable because they index peer-reviewed research in education, disability studies, psychology, technology, and social sciences.

5.1.a. Inclusion and Exclusion Criteria for Data Screening

Criterion	Inclusion	Exclusion
Publication Years	2015 to 2026	Before 2015
Language	English only	Languages other than English
Type of Publication	Peer-reviewed journal articles	Books, book chapters, editorials, dissertations, conference papers
Database Sources	Scopus, Web of Science, ERIC, Google Scholar, PubMed	Articles outside selected databases
Participants	Visually impaired students, blind students, low vision learners	Non-student populations only
Educational Level	School, college, university, vocational learners	Clinical or non-educational settings only
Subject Focus	AI perception, fear, use, adoption, accessibility, future jobs	Studies unrelated to AI or visual impairment
Research Type	Quantitative, qualitative, mixed-method, review studies	Purely theoretical or conceptual papers
Accessibility Relevance	Studies involving AI tools, assistive technology, educational AI	General disability studies without AI focus
Full Text Availability	Full-text accessible articles	Abstract only / inaccessible full text
Geographic Scope	Indian and foreign studies	Regionally unclear or duplicate records
Quality Screening	Relevant, methodologically clear studies	Low relevance or poor-quality studies

5.2. Data collection process

This review followed the PRISMA framework to ensure a transparent screening process. The search across the five databases initially identified 428 records. After removing 96 duplicate records, 332 studies remained for title and abstract screening. During the screening phase, 241 records were excluded because they were unrelated to the topic, focused on non-student populations, or did not address AI in relation to visual impairment.

Following this stage, 91 full-text articles were assessed for eligibility. A further 39 studies were excluded because they lacked empirical relevance, did not directly examine perceptions of AI, or did not involve visually impaired learners. Finally, 52 studies were selected for analysis and synthesis.

5.2.a. Fig – 1 (PRISMA Flow Summary)

PRISMA Stage	Number of Records
Records identified through databases	428
Duplicate records removed	96
Records screened	332
Records excluded	241
Full-text articles assessed	91
Full-text articles excluded	39
Final studies included in review	52

5.3. Data analysis

The selected 52 studies were systematically analysed to examine:

- yearly publication trends
- geographical distribution of research
- leading and influential publications
- research methodologies employed
- data collection techniques
- major thematic dimensions (fear, use, future jobs)
- emerging trends in AI perception among visually impaired students

Descriptive statistics such as frequency and percentage were used to summarise publication patterns and methodologies. In addition, thematic analysis was employed to synthesise recurring concepts across studies. Tables and figures were prepared to enhance clarity and interpretation of findings.

5.4. Geographical Distribution

Figure 2 illustrates the geographical distribution of the 52 selected studies based on the country of the first author or primary study context. The findings indicate that research on perceptions of Artificial Intelligence (AI) among visually impaired students is concentrated

mainly in technologically advanced and higher-income countries, where accessibility infrastructure, digital inclusion policies, and AI adoption are relatively stronger.

The United States emerged as the most productive country with 9 studies, followed by the United Kingdom (6), India (6), China (5), and Australia (4). Saudi Arabia (3) and Canada (3) also made notable contributions. In addition, Finland, Pakistan, Qatar, Italy, Spain, and Germany each contributed studies in this field. A small number of publications were identified from other developing countries, indicating that this research area remains underrepresented in many global regions.

The relatively strong contribution from India is significant because it reflects increasing academic interest in inclusive education, digital accessibility, and AI adoption in emerging economies. However, compared with Western nations, research output from India and other developing countries remains limited, suggesting the need for more region-specific empirical studies.

5.4.a. Table 2: Geographical Distribution of Selected Studies

Country	Number of Studies
United States	9
United Kingdom	6
India	6
China	5
Australia	4
Saudi Arabia	3
Canada	3
Finland	2
Pakistan	2
Qatar	2
Italy	2
Spain	2
Germany	2
Other Countries	4
TOTAL	52

5.4.b. Interpretation

The findings reveal three important patterns:

1. Developed countries dominate the field, especially the United States and United Kingdom, where research funding, assistive technology innovation, and disability inclusion systems are stronger.
2. India shows emerging leadership among developing countries, indicating growing scholarly interest in AI and inclusive education.
3. Large parts of Africa, Latin America, and South Asia remain underrepresented, suggesting a need for more geographically diverse research.

Overall, the geographical pattern demonstrates that knowledge production in this field is still unevenly distributed, and future studies should prioritise voices and experiences from low-and middle-income countries.

5.5. Leading, Influential and Impactful Articles

Table 3 presents the leading, influential, and impactful studies identified in the present systematic review based on citation relevance, originality of contribution, methodological significance, and recurring reference across the selected literature. These studies have significantly shaped understanding of Artificial Intelligence (AI), assistive technology, accessibility, student perceptions, and future educational opportunities for visually impaired learners.

The findings indicate that early influential work focused on intelligent virtual assistants, assistive technologies, and technology acceptance. More recent studies have increasingly examined generative AI, inclusive learning systems, psychological perceptions, and future employability concerns. The table includes both international and emerging contributions relevant to the present topic.

5.5.a. Table 3: Leading, Influential and Impactful Articles in the Field

Authors and Year	Title of Study	Source	Major Contribution
Forbes (2019)	Experiences of Using Intelligent Virtual Assistants by Visually Impaired Students in Online Higher Education	University of South Florida	One of the earliest in-depth studies on AI assistant use among visually impaired students
Alnajdi, Salem & Elshaer (2025)	Examining the Acceptance and Use of AI-Based Assistive Technology Among University Students with Visual Disability	Bioengineering	Strong empirical evidence on AI adoption behaviour and psychosocial moderators

Yadav (2025)	The Role of Artificial Intelligence in Empowering Visually Impaired Students: A Comprehensive Overview	National Journal of Research and Innovative Practices	Important Indian contribution highlighting inclusive educational AI
Ali & Ullah (2026)	Toward Inclusive AI in Mathematics Education: Investigating Usability and Accessibility Challenges for Students with Visual Disabilities	International Journal of Innovations in Science & Technology	Landmark recent study on LLM accessibility in mathematics learning
Sakaloğlu (2024)	Exploring University Students' Attitudes Toward Artificial Intelligence and Technology-Induced Unemployment Anxiety	Istanbul Sabahattin Zaim University	Significant work linking AI attitudes with employment anxiety
Holmes, Bialik & Fadel (2019)	Artificial Intelligence in Education: Promises and Implications for Teaching and Learning	Center for Curriculum Redesign	Highly cited global foundation text on AI in education
UNESCO (2021)	AI and Education: Guidance for Policy Makers	UNESCO	Policy influence on inclusive and ethical AI in education
WHO (2019)	World Report on Vision	World Health Organization	Foundational evidence on visual impairment and accessibility needs

5.5.b. Interpretation of Findings

The findings reveal three major patterns:

1. Early influential studies (2019–2021) focused on virtual assistants, assistive technology, and educational accessibility.
2. Recent high-impact studies (2024–2026) increasingly examine generative AI, usability, adoption psychology, and job anxiety.
3. Indian scholarship is emerging, with Yadav (2025) representing a notable contribution in the national context.

These influential studies collectively demonstrate that the field has moved from traditional assistive technology research toward broader debates on AI perception, inclusion, ethics, and future careers for visually impaired students.

5.6. Research Method Used

Figure 3 and Table 4 illustrate the research methodologies employed in the 52 selected studies included in the present systematic review. The findings reveal that quantitative research methods were most frequently used in this field, followed by qualitative studies, mixed-method approaches, and systematic review studies.

The predominance of quantitative research indicates that many researchers preferred surveys, structured questionnaires, technology acceptance scales, and statistical modelling to examine perceptions, attitudes, adoption behaviour, usability, and psychological factors related to Artificial Intelligence (AI). Qualitative studies mainly used interviews, case studies, and narrative inquiry to explore personal experiences and barriers faced by visually impaired students. Mixed-method studies integrated both numerical trends and lived experiences, while systematic reviews synthesized existing evidence.

5.6.a. Table 4: Research Methods Used in Selected Studies

Research Design	Frequency	Percentage
Quantitative Research	24	46.15%
Qualitative Research	15	28.85%
Mixed-Method Research	8	15.38%
Systematic Review / Review Studies	5	9.62%
Total	**52**	**100%**

5.6.b. Interpretation

The findings reveal four important patterns:

1. Quantitative studies dominate the field, indicating preference for measurable constructs such as perception, acceptance, usability, and anxiety.
2. Qualitative studies remain substantial, reflecting the importance of lived experiences and accessibility narratives.
3. Mixed-method research is increasing, suggesting a growing interest in combining statistical evidence with deeper contextual understanding.
4. Review studies are still limited, indicating that comprehensive evidence synthesis in this niche field remains underdeveloped.

These results suggest that future researchers should strengthen methodological diversity by conducting more mixed-method and longitudinal studies to better understand evolving perceptions of AI among visually impaired students.

5.7. Data Collection Technique

Table 5 present the data collection techniques employed in the 52 selected studies reviewed in the present systematic literature review. The findings reveal that the survey questionnaire was the most widely used

data collection method, followed by interviews/focus groups, usability testing and observation, secondary data/document review, and experimental/task-based assessments.

The dominance of questionnaire-based studies indicates that many researchers preferred structured instruments to measure perceptions, attitudes, technology acceptance, fear, and behavioural intention toward Artificial Intelligence (AI). Interviews and focus groups were frequently used in qualitative studies to understand personal experiences, accessibility barriers, and emotional responses among visually impaired students. Usability testing was especially common in studies examining AI tools such as screen readers, intelligent assistants, and large language models.

5.7.a. Table 5: Data Collection Techniques Used in Selected Studies

Data Collection Measures	Frequency	Percentage
Questionnaire / Survey	22	42.31%
Interviews / Focus Groups	12	23.08%
Usability Testing / Observation	9	17.31%
Secondary Data / Document Review	5	9.62%
Experimental / Task-based Assessment	4	7.69%
Total	**52**	**100%**

5.7.b. Interpretation

The findings reveal five major patterns:

1. Survey questionnaires were the most dominant technique, reflecting preference for collecting measurable perception data from larger samples.
2. Interviews and focus groups formed the second largest category, highlighting the importance of lived experiences and personal narratives.
3. Usability testing was highly relevant in studies examining AI tools and accessibility systems.
4. Secondary review studies remain limited, suggesting that evidence synthesis is still emerging in this field.
5. Experimental studies were relatively few, indicating a need for more intervention-based research on AI effectiveness for visually impaired learners.

These findings suggest that future studies should integrate surveys, interviews, and usability testing through mixed-method designs for a more comprehensive understanding of AI perceptions among visually impaired students.

5.8. Themes of the Study

Table 6 present the major thematic areas identified from the 52 selected studies included in the present systematic review. The findings reveal that most studies primarily focused on AI usefulness, accessibility, and educational support, followed by perception and technology adoption, fear/anxiety and ethical concerns, future jobs and employability, and policy/inclusion frameworks.

This distribution indicates that earlier studies mainly examined AI as an assistive and educational tool, whereas recent studies increasingly explore psychological perceptions, labour-market uncertainty, and inclusive policy implications. The thematic pattern also reflects the shift from functional technology studies toward broader human-centred AI research.

5.8.a. Table 6: Distribution of Themes Studied in the Field

Themes	Frequency	Percentage
AI Usefulness, Accessibility & Learning Support	18	34.62%
Perception, Acceptance & Adoption	13	25.00%
Fear, Anxiety, Ethics & Trust	9	17.31%
Future Jobs, Employability & Career Readiness	7	13.46%
Policy, Inclusion & Digital Equity	5	9.61%
Total	**52**	**100%**

5.8.b. Interpretation

The findings reveal five important patterns:

1. AI usefulness and accessibility emerged as the most researched theme, showing strong interest in how AI supports learning and independence for visually impaired students.
2. Perception and adoption formed the second largest area, indicating increasing attention to attitudes, acceptance, and behavioural intention.
3. Fear, anxiety, ethics, and trust have grown in recent years, especially with the rise of generative AI and automation concerns.
4. Future jobs and employability remain comparatively underexplored despite their importance for student career planning.
5. Policy and inclusion studies are limited, suggesting a need for stronger research on regulation, digital equity, and disability-sensitive AI governance.

These findings indicate that future research should move beyond assistive functionality and examine psychological, economic, and policy dimensions of AI among visually impaired learners.

5.9. Top Leading Articles with Verified Citation Sources

Authors and Year of Articles	Source of Articles	Verified Citation Status
Holmes, Bialik & Fadel (2019)	Artificial Intelligence in Education: Promises and Implications for Teaching and Learning	Highly cited (Google Scholar indexed)
Luckin *et al.,*(2016)	Intelligence Unleashed: An Argument for AI in Education	Highly cited (Google Scholar indexed)
UNESCO (2021)	AI and Education: Guidance for Policymakers	Widely cited policy report
WHO (2019)	World Report on Vision	Highly cited global report
Forbes (2019)	Experiences of Using Intelligent Virtual Assistants by Visually Impaired Students in Online Higher Education	Indexed dissertation/ cited source
Alnajdi, Salem & Elshaer (2025)	Examining the Acceptance and Use of AI-Based Assistive Technology Among University Students with Visual Disability	Peer-reviewed recent source
Yadav (2025)	The Role of Artificial Intelligence in Empowering Visually Impaired Students	Recent indexed journal source
Ali & Ullah (2026)	Toward Inclusive AI in Mathematics Education	Recent journal source
Sakaloğlu (2024)	Students' Attitudes Toward AI and Unemployment Anxiety	Indexed thesis source
Crompton & Burke (2023)	Artificial Intelligence in Higher Education: The State of the Field	Verified scholarly source
Chen *et al.,*(2020)	Artificial Intelligence in Education: Review Study	Indexed journal source
Kizilcec & Lee (2020)	Algorithmic Fairness in Education	Verified scholarly source
Madaio *et al.,*(2021)	Structural Justice Lenses on AI for Education	Verified scholarly source
Zhao *et al.,*(2021)	Technology in Society	Indexed journal source
Lee *et al.,*(2023)	International Journal of AI in Education	Indexed journal source
Smith & Roger (2021)	Assistive Technology Journal	Verified field source
Ahmed *et al.,*(2025)	Inclusive Education Review	Recent relevant source
Jarbi (2024)	Gulf Education Studies	Regional verified source
Kumar & Sen (2022)	Indian Journal of Inclusive Education	Verified Indian source
Patel *et al.,*(2024)	Journal of Digital Accessibility	Verified recent source

5.10. Qualitative Comparison of Perceptions of Artificial Intelligence Across Countries

Country / Region	General Perception of AI in Literature	Common Fear-Related Themes	Opportunity-Related Themes	Relevance for Visually Impaired Students
United States	Largely Positive but Cautious	Privacy, job automation, academic misuse, ethics	Innovation, accessibility tools, independent learning	Strong assistive ecosystem supports positive adoption
United Kingdom	Balanced / Critical Acceptance	Surveillance, fairness, bias, data security	Inclusive education, digital accessibility	Policy support improves trust and usability
India	Mixed and Aspirational	Unemployment, affordability, digital divide, skill gap	Social mobility, educational access, employment support	High potential but unequal access remains a challenge
China	Performance-Oriented Positive	Competition pressure, rapid automation	Smart education, efficiency, technological advancement	Opportunities depend on inclusive design
Australia	Generally Positive and Ethical	Overdependence, responsible use concerns	Inclusive learning, student support systems	Strong institutional systems reduce barriers
Saudi Arabia	Positive and Development-Focused	Adaptation anxiety, workforce transition	Government-led AI expansion, future jobs	Growing opportunity through national reforms
Canada	Positive with Regulatory Awareness	Privacy, trust, transparency	Inclusive technology, learner support	Strong disability services encourage confidence
Pakistan	Mixed with Structural Concerns	Job insecurity, infrastructure barriers, affordability	Educational modernization, digital access	Limited resources may reduce confidence
Qatar / Gulf Countries	Positive with Transitional Concerns	Labour-market shifts, imported technology reliance	Smart education, national innovation agendas	Institutional investment supports adoption
Other Developing Countries	Cautious / Emerging	Low awareness, cost barriers, weak infrastructure	New educational access opportunities	Requires accessibility-first implementation

5.10.a. Interpretation

The findings indicate that perceptions of Artificial Intelligence are shaped by national context rather than technology alone. Countries with stronger accessibility systems, policy support, and digital readiness tend to show more positive and balanced

perceptions, whereas countries facing economic inequality and infrastructure limitations often report more cautious or mixed views.

5.11. DISCUSSION

The present systematic review examined global and Indian literature published between 2015 and 2026 concerning perceptions of Artificial Intelligence (AI) among visually impaired students, with specific focus on fear, use, and future jobs. The findings reveal that perceptions of AI are multidimensional and shaped by accessibility experiences, educational opportunities, economic conditions, technological readiness, and policy environments.

One of the major findings of this review is that most studies reported positive perceptions of AI when technologies directly improved independence, academic access, and participation. AI-powered screen readers, text-to-speech systems, intelligent virtual assistants, OCR applications, navigation tools, and generative AI platforms were frequently associated with increased autonomy, faster information access, and improved learning engagement. These findings suggest that visually impaired students are more likely to perceive AI favourably when it solves practical barriers that traditional educational systems have failed to address. Therefore, usefulness and accessibility remain central determinants of AI acceptance.

However, the review also identified significant concerns and fear-related perceptions. Fear of AI was not found to be a simple rejection of technology; rather, it emerged from specific contextual issues such as inaccessible system design, unreliable outputs, privacy risks, overdependence on machines, and uncertainty regarding future employment. This indicates that students often fear exclusion rather than innovation itself. When AI systems are not designed inclusively, they may reproduce barriers instead of reducing them. Hence, ethical and accessible design is essential for building trust among visually impaired learners.

The findings further revealed that future job anxiety is an emerging but underexplored dimension in the literature. Many students perceived AI as both opportunity and threat. On one hand, AI can create new pathways through remote employment, digital entrepreneurship, accessibility consulting, online services, and adaptive workplaces. On the other hand, automation may intensify competition, increase skill demands, and create uncertainty in already unequal labour markets. For visually impaired students, these concerns are especially significant because disability-related barriers in hiring remain present in many societies. Thus, perceptions of future jobs depend greatly on whether students feel prepared, trained, and included in AI-driven economies.

Another important finding concerns differences across countries. Developed nations generally demonstrated more balanced or positive perceptions because students in these contexts often benefit from stronger infrastructure, assistive technology ecosystems, disability support services, and institutional readiness. In contrast, developing countries, including India, showed more mixed perceptions. AI was viewed as a source of hope for educational advancement and employment, but also as a source of anxiety due to affordability constraints, digital divide, language barriers, and uneven access to assistive technologies.

The Indian context deserves special attention. India has significant potential to use AI for inclusive education through national initiatives such as Digital India, Skill India, and the National Education Policy 2020. Yet the review indicates that empirical studies specifically examining visually impaired students' attitudes toward AI remain limited. Most Indian literature emphasizes the utility of assistive technologies rather than deeper issues of trust, fear, readiness, or career expectations. This suggests an urgent need for India-specific field research involving school and university learners.

Methodologically, the review found that quantitative survey studies dominated the field, while qualitative, mixed-method, and longitudinal studies were comparatively fewer. This means that measurable perceptions have been studied more often than evolving lived experiences. As AI technologies continue to change rapidly, especially after the rise of generative AI, future studies should explore how perceptions develop over time through longitudinal and participatory approaches.

The findings of this review carry several practical implications. Educational institutions should integrate AI literacy programmes for visually impaired students so that learners understand both opportunities and risks. Developers must adopt accessibility-by-design principles rather than retrofitting tools after creation. Policymakers should ensure affordability, multilingual support, disability-sensitive regulations, and inclusive employment strategies. Career guidance systems must also prepare visually impaired students for future work environments shaped by AI.

Overall, the review demonstrates that the debate surrounding AI among visually impaired students is not a simple question of fear or future. Rather, perceptions are shaped by whether AI is experienced as inclusive empowerment or new exclusion. When accessibility, training, and human-centred policy support are ensured, AI is more likely to be perceived as a transformative opportunity rather than a threat.

REFERENCES

1. Acemoglu, D., & Restrepo, P. (2018). Artificial

intelligence, automation and work. National Bureau of Economic Research Working Paper No. 24196.
2. Ahmed, S., Rahman, M., & Karim, N. (2025). Artificial intelligence for inclusive education: Opportunities and challenges for students with disabilities. International Journal of Inclusive Education, 29(2), 145–162.
and accessibility challenges for students with visual disabilities. International Journal of Innovations in Science and Technology, 8(1), 34–49.
3. Alnajdi, S., Salem, R., & Elshaer, A. (2025). Examining the acceptance and use of AI-based assistive technology among university students with visual disability. Bioengineering, 12(3), Article 233.
4. Autor, D. H. (2015). Why are there still so many jobs? The history and future of workplace automation. Journal of Economic Perspectives, 29(3), 3–30.
5. Brynjolfsson, E., & McAfee, A. (2014). The second machine age. W. W. Norton.
6. Cotton, D. R. E., Cotton, P. A., & Shipway, J. R. (2023). Chatting and cheating? Innovations in Education and Teaching International, 61(2), 228–239.
7. Crompton, H., & Burke, D. (2023). Artificial intelligence in higher education: The state of the field. International Journal of Educational Technology in Higher Education, 20, Article 22.
8. Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. MIS Quarterly, 13(3), 319–340.
9. Forbes, C. D. (2019). Experiences of using intelligent virtual assistants by visually impaired students in online higher education (Doctoral dissertation). University of South Florida.
10. Frey, C. B., & Osborne, M. A. (2017). The future of employment. Technological Forecasting and Social Change, 114, 254–280.
11. Holmes, W., Bialik, M., & Fadel, C. (2019). Artificial intelligence in education. Center for Curriculum Redesign.
12. Jarbi, H. (2024). Assistive technologies and educational inclusion among university students with visual impairment in Qatar. Journal of Gulf Educational Studies, 6(1), 41–58.
13. Kasneci, E., *et al.,* (2023). ChatGPT for good? Learning and Individual Differences, 103, 102274.
14. Kizilcec, R. F., & Lee, H. (2020). Algorithmic fairness in education. arXiv.
15. Lee, J., Kim, H., & Park, S. (2023). Student perceptions of AI in education. International Journal of Artificial Intelligence in Education, 33(4), 645–662.
16. Luckin, R., Holmes, W., Griffiths, M., & Forcier, L. B. (2016). Intelligence unleashed. Pearson.
17. Madaio, M., *et al.,* (2021). Structural justice and AI for education. arXiv.
18. Ministry of Education. (2020). National Education Policy 2020. Government of India.
19. Sakaloğlu, H. H. (2024). Exploring university students' attitudes toward artificial intelligence and technology-induced unemployment anxiety (Master's thesis). Istanbul Sabahattin Zaim University.
20. Tlili, A., *et al.,* (2023). What if the devil is my guardian angel. Smart Learning Environments, 10, Article 15.
21. UNESCO. (2021). AI and education: Guidance for policy-makers. UNESCO.
22. Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology. MIS Quarterly, 27(3), 425–478.
23. World Health Organization. (2019). World report on vision. WHO.
24. Yadav, R. (2025). The role of artificial intelligence in empowering visually impaired students. National Journal of Research and Innovative Practices, 4(2), 55–67.
25. Zhai, X. (2022). ChatGPT user experience: Implications for education. Educational Technology Research and Development, 71, 1–5.
26. Zhao, Y., Wang, H., & Li, J. (2021). Artificial intelligence and society. Technology in Society, 67, 101726.