

Artificial Intelligence, Language Access, and the Future of Communication for Non-Speaking Autistic Children

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Abstract

Communication is a fundamental human right and an essential determinant of health, education, and social inclusion. For many non-speaking autistic children, barriers to effective communication can significantly affect healthcare experiences, educational opportunities, emotional well-being, and participation in society. Recent advances in artificial intelligence (AI), natural language processing, and augmentative and alternative communication (AAC) technologies are transforming how non-speaking individuals express themselves and interact with caregivers, educators, and healthcare professionals.

AI-powered communication systems offer opportunities for personalized language support, adaptive vocabulary development, multilingual communication, predictive text generation, and context-aware interaction. These innovations have the potential to improve clinical communication, strengthen family engagement, and promote greater autonomy for autistic children. However, responsible implementation requires careful consideration of accessibility, affordability, cultural responsiveness, language diversity, privacy, ethical governance, and equitable access.

This article examines the evolving role of AI in supporting communication for non-speaking autistic children within healthcare and educational settings. It argues that AI should serve as an assistive partner that amplifies children's voices rather than replacing human relationships. The future of communication technologies must remain grounded in person-centered care, interdisciplinary collaboration, and the recognition that communication extends beyond spoken language to include dignity, autonomy, and meaningful participation.

Keywords

Artificial Intelligence; Autism; Augmentative and Alternative Communication; Language Access; Health Equity; Communication Disorders; Digital Health.

Introduction

Communication is one of humanity's most fundamental capacities. It enables relationships, supports learning, informs healthcare decisions, and allows individuals to express their needs, emotions, and identities.

For non-speaking autistic children, communication often occurs through gestures, facial expressions, behaviour, eye gaze, symbols, communication devices, or augmentative and alternative communication (AAC) systems rather than spoken language. These forms of communication are equally meaningful but frequently misunderstood or underestimated.

As artificial intelligence becomes increasingly integrated into healthcare and education, new opportunities are emerging to support communication in more personalized, responsive, and inclusive ways. AI-assisted technologies are transforming AAC systems by making them more adaptive to individual users, improving accessibility, and expanding opportunities for participation.

Rather than asking whether AI can replace human communication, the more important question is how technology can strengthen communication while preserving the child's individuality, autonomy, and right to be heard.

Communication as a human right

International human rights frameworks recognize communication as essential to participation, education, healthcare, and social inclusion.

When communication barriers prevent individuals from expressing pain, emotions, preferences, or healthcare concerns, the consequences extend beyond inconvenience. They affect autonomy, safety, and quality of life.

Healthcare professionals increasingly recognize that communication accessibility should be viewed as an essential component of patient-centered care rather than an optional accommodation.

For non-speaking autistic children, effective communication can improve diagnostic accuracy, reduce anxiety during clinical encounters, strengthen therapeutic relationships, and support shared decision-making with families.

Artificial intelligence and augmentative communication

Augmentative and Alternative Communication systems have transformed the lives of many non-speaking individuals.

Recent AI developments are further expanding their capabilities. Modern systems increasingly incorporate:

- adaptive vocabulary recommendations;

- predictive text generation;
- context-sensitive language suggestions;
- personalized communication patterns;
- voice customization;
- multimodal interaction using images, symbols, gestures, and text.

These technologies learn from users over time, allowing communication systems to become increasingly individualized.

Rather than requiring children to adapt to technology, AI offers the possibility of technology adapting to each child's communication style.

Personalized communication through AI

- Every autistic child communicates differently.
- Some prefer visual symbols.
- Others communicate through typing.
- Some rely on eye-tracking systems.
- Others combine multiple methods depending on context.

Artificial intelligence offers opportunities to personalize communication supports according to individual strengths, preferences, cognitive profiles, and developmental needs.

Future systems may assist healthcare professionals by recognizing communication patterns, anticipating vocabulary needs during medical appointments, and facilitating more effective interactions between clinicians and patients. Such personalization may reduce frustration while increasing independence and participation.

Multilingual communication and cultural inclusion

Communication technologies should not assume that every family speaks the same language. Millions of autistic children grow up in multilingual households where parents, grandparents, teachers, and healthcare providers communicate in different languages.

AI has the potential to support multilingual AAC systems capable of adapting vocabulary, symbols, and culturally appropriate expressions across languages.

As someone who has spent decades working in multilingual communication, I have witnessed how language access directly influences healthcare quality and patient trust. For families navigating both autism and linguistic diversity, culturally responsive communication tools can help reduce barriers, strengthen understanding, and support more equitable care.

Designing multilingual AI systems is therefore not simply a technical challenge, but an issue of inclusion and health equity.

Supporting families and caregivers

Communication technologies should support not only children but also those who care for them. Parents and caregivers often become experts in interpreting their children's unique communication styles. AI tools may assist by identifying emerging communication patterns, suggesting vocabulary expansion, tracking developmental progress, and facilitating communication across home, school, and healthcare settings.

Importantly, these technologies should strengthen family relationships rather than replace natural interaction. Technology should remain a bridge, not a substitute, for human connection.

Clinical applications in healthcare

Healthcare environments can be particularly stressful for non-speaking autistic children. Pain, unfamiliar surroundings, sensory sensitivities, and communication barriers may complicate clinical assessment.

AI-supported communication systems may improve healthcare by enabling children to:

- describe symptoms;
- communicate pain intensity;
- express emotional states;
- ask questions;
- participate in treatment decisions appropriate to their developmental level.

Improved communication may also reduce diagnostic uncertainty and strengthen patient safety. However, clinical implementation requires rigorous validation and interdisciplinary collaboration among healthcare professionals, speech-language pathologists, psychologists, educators, and technology developers.

Ethical considerations

As AI becomes more integrated into communication technologies, ethical questions become increasingly important.

Responsible implementation requires attention to:

- protection of children's privacy and personal data;
- transparency regarding AI-assisted recommendations;
- equitable access regardless of socioeconomic status;
- culturally responsive system design;
- accessibility for diverse communication profiles;
- continued human oversight in healthcare decision-making.

Technology should never diminish the individuality of autistic children or reduce communication to algorithmic predictions. Each child's voice remains unique.

Building inclusive AI

Inclusive innovation begins with inclusive design. Developers should involve autistic individuals, families,

clinicians, educators, and disability advocates throughout the design process.

Co-design ensures that technologies reflect lived experience rather than assumptions. Equally important is representation within AI training datasets. Systems developed primarily using limited populations may not perform equally well across different cultures, languages, ages, or communication styles.

Equity should therefore guide every stage of development. The Future of Human-Centered Communication. Artificial intelligence offers remarkable opportunities. Yet communication has always been more than words. It includes emotion, trust, relationships and belonging.

Technology can assist communication, but it can never replace empathy, patience, or meaningful human interaction. Healthcare professionals, educators, and families will continue to play indispensable roles in helping children develop confidence, agency, and authentic self-expression. The future lies not in choosing between technology and humanity but in integrating both thoughtfully.

Conclusion

Artificial intelligence is reshaping the future of communication for non-speaking autistic children by expanding opportunities for expression, participation, and inclusion. When developed responsibly, AI-assisted communication technologies can improve healthcare interactions, strengthen educational outcomes, support families, and promote greater independence.

However, innovation must remain guided by ethical principles, cultural responsiveness, interdisciplinary collaboration, and equitable access. Communication is more than the transmission of information, it is also the foundation of dignity, autonomy, and human connection.

As healthcare enters an increasingly digital era, success should not be measured solely by technological sophistication, but by whether every child, regardless of how they communicate, is empowered to be heard, understood, and respected. Giving every child a voice is not simply a technological achievement. But also, a commitment to a more inclusive, compassionate, and equitable future.

Suggested References (APA 7th Edition)

1. American Speech-Language-Hearing Association (ASHA). Practice Portal: Augmentative and Alternative Communication.
2. World Health Organization. Global Report on Health Equity for Persons with Disabilities.
3. UNESCO. Global Education Monitoring Reports (inclusive education and multilingual learning).
4. Topol, E. (2019). Deep Medicine: How Artificial Intelligence Can Make Healthcare Human Again.
5. Recent peer-reviewed articles from Autism, Journal of Autism and Developmental Disorders, The Lancet Digital Health, Nature Digital Medicine, and NPJ Digital Medicine on AI-supported AAC, autism, digital health, and inclusive communication.

Biography

Beatrice de Salles is a global affairs and cultural diplomacy specialist, multilingual interpreter, educator, and international journalist with more than three decades of experience advancing intercultural

communication, language access, and global cooperation. She has worked across more than 65 countries, collaborating with universities, international organizations, and multidisciplinary networks to promote inclusive leadership, cultural understanding, and equitable access to education and public services.

Fluent in nine languages and a professional interpreter working in four official languages, Beatrice has extensive experience facilitating communication in multicultural and multilingual environments. Her work explores the intersection of language, healthcare communication, cultural competence, artificial intelligence, and social inclusion, with a particular interest in how emerging technologies can strengthen patient-centered care while preserving equity and human dignity. She serves in leadership and advisory roles with several international organizations and is committed to advancing interdisciplinary dialogue that bridges global health, education, cultural diplomacy, and sustainable development.

References

1. Schlosser RW, Wendt O. (2008) Effects of Augmentative and Alternative Communication Intervention on Speech Production in Children with Autism: A Systematic Review. *Am J Speech Lang Pathol.* 17(3):212-230.
2. Ganz JB, Earles-Vollrath TL, Heath AK, Parker RI, Rispoli MJ, Duran JB. (2012) A Meta-analysis of Single Case Research Studies on Aided Augmentative and Alternative Communication Systems With Individuals With Autism Spectrum Disorders. *J Autism Dev Disord.* 42(1):60-74.
3. Kasari C, Kaiser A, Goods K, Nietfeld J, Mathy P, Landa R, Murphy S, Almirall D. (2014) Communication Interventions for Minimally Verbal Children with Autism: A Sequential Multiple Assignment Randomized Trial. *J Am Acad Child Adolesc Psychiatry.* 53(6):635-646.
4. Light J, McNaughton D. (2014) Communicative Competence for Individuals Who Require Augmentative and Alternative Communication: A New Definition for a New Era of Communication? *Augment Altern Commun.* 30(1):1-18.
5. Brignell A, Chenausky KV, Song H, Zhu J, Suo C, Morgan AT. (2018) Communication Interventions for Autism Spectrum Disorder in Minimally Verbal Children. *Cochrane Database Syst Rev.* 11:CD012324.
6. Pope L, Light J, Laubscher E. (2025) The Effect of Naturalistic Developmental Behavioral Interventions and Aided AAC on the Language Development of Children on the Autism Spectrum with Minimal Speech: A Systematic Review and Meta-analysis. *J Autism Dev Disord.* 55:3078-3099.
7. Chavers Edgar T, Schlosser RW, Koul R. (2024) Effects of an Augmentative and Alternative Communication Intervention Package on Socio-Communicative Behaviors Between Minimally Speaking Autistic Children and Their Peers. *Am J Speech Lang Pathol.* 33(4):1619-1638.

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