

Communication Assistance for Nonspeaking Individuals

An Annotated Bibliography

Project VOICE
Rensselaer Polytechnic Institute

October 18, 2024

References

- [1] T. J. C. e. a. Forbes, H. J., “A systematic review of acquisition and mastery of skills taught using the picture exchange communication system,” *Advance online publication*, Feb 2024.

This article examines the effectiveness of PECS in teaching functional communication to individuals with developmental disabilities, particularly those on the autism spectrum.

- [2] V. K. Jaswal, A. J. Lampi, and K. M. Stockwell, “Literacy in nonspeaking autistic people,” in *Autism*, Feb 2024.

This paper claims that nonspeaking autistic people with limited to no phrase speech show patterns in their response rates close to verbal and literate people. This means that their brain is capable of this level of literacy and are already recognizing sentences and word meaning, so with adequate instruction it might be possible lead them to written forms of communication as an alternative to speech.

- [3] V. K. Jaswal, A. Wayne, and H. Golino, “Eye-tracking reveals agency in assisted autistic communication,” *Scientific Reports*, vol. 10, no. 7882, May 2020.

Letterboards are a very common way to assist non-verbal people communicate, but it’s a very controversial method to prove

higher levels of literacy since the person assisting them through that process could cue them into certain behaviors. This study used eye-tracking to see what letters they focused their gaze on to spell instead. The study reported that the method was very successful, they rarely made any spelling errors, fixated their vision on most letters before pointing to them, and their response time "reflected planning and production processes characteristic of fluent spelling in non-autistic typists" .

- [4] A. Nazari, L. Alabood, K. B. Feeley, V. K. Jaswal, and D. Krishnamurthy, "Personalizing an ar-based communication system for nonspeaking autistic users," in *Proceedings of the 29th International Conference on Intelligent User Interfaces*, ser. IUI '24. New York, NY, USA: Association for Computing Machinery, 2024, p. 731–741. [Online]. Available: <https://doi.org/10.1145/3640543.3645153>
- [5] . K. B.-M. D. K. Yasmin Elshahar, Sijung Hu and A. Mansor, "Augmentative and alternative communication (aac) advances: A review of configurations for individuals with a speech disability," *National Library of Medicine*, vol. 19, no. 1911, April 2019.

This review article examines the current technological landscape of augmentative and alternative communication (AAC), which encompasses a variety of high-tech methods and sensing modalities used to acquire, process, and generate output signals that allow individuals with speech disabilities to communicate. The authors highlight the importance of user-centered design for these technologies, advocating for a focus on the user's needs and abilities in different communication contexts.