

Noora, an AI Communication Aid for Autistic Individuals

Purpose:

Dr. Lynn Koegel of the Stanford School of Medicine presented Noora, a suite of AI-based programs developed in collaboration with Monica Lam from Stanford Computer Science and adapted for rehabilitation contexts alongside Virginia Commonwealth University (VCU). The software targets specific social communication skills for autistic individuals.

While many autistic individuals seek personal and professional relationships, building them can be challenging. Autistic individuals also face high rates of bullying, low employment, and co-occurring conditions such as depression, anxiety, and stress. Access to traditional support remains limited by shortages of trained clinicians, long wait lists, a lack of services after early intervention, and high costs.

Noora is designed to supplement face-to-face programs rather than replace clinicians or function as a conversational companion. Its primary goal is to help users apply communication skills within everyday relationships and workplace settings.

How Noora Works:

Noora operates on mobile phones and computers. Users engage with social scenarios by typing or speaking their responses. The program evaluates whether a reply is contextually appropriate and provides feedback, along with suggested improvements when necessary.

For example, if a conversation partner mentions having a bad day, an empathetic reply would express sympathy and ask what happened. In contrast, an unrelated remark, a dismissive comment, or a minimal response like "oh" triggers feedback for improvement. For positive news, Noora prompts users to acknowledge the person's excitement and ask a relevant follow-up question.

Available Modules:

The program offers practice across several core communication skills, including expressing empathy, starting conversations, asking relevant questions, reframing negative statements in a more positive way, giving compliments, listening and responding appropriately, sharing a suitable amount of personal information, and expanding short answers. The platform can be adjusted to accommodate individuals with varying levels of communication.

Research & Reported Findings:

In a randomized clinical trial comparing Noora users with a control group receiving standard community treatment over four weeks (five days per week), participants using Noora demonstrated significant improvements in empathy. These gains were evident both within the software and during interactions with people, indicating that participants successfully applied the skills beyond the exercises.

In a separate study conducted with VCU, autistic participants in a work internship improved their empathetic verbal responses during social conversations. The research team also adapted the program to meet participants' specific communication needs.

Additionally, video evidence demonstrated that after completing the four-week program, participants used more engaged and empathetic responses, such as actively asking questions and showing interest in their partner's experiences.

Participant Feedback:

Most participants reported enjoying the program and expressed satisfaction with their progress in social communication. Nearly all participants indicated they would recommend Noora and felt capable of applying the skills they had acquired in daily conversations. Overall, more than half rated their experience very positively, and almost all rated it positively or very positively.

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