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# A Two Step Mechanism to Evaluate Automated Feedback in Gesture Recognition Used for Education

### Background

Real-time immediate feedback is known to enhance learning by providing better engagement with learners, as seen in a classroom environment with teachers. Applications with automated feedback are designed to mimic the prompt feedback provided by teachers in a classroom. Advances in artificial intelligence (AI) technology have enabled this feedback to be granular and detailed, but there is still a distrust and confusion in the minds of the users about the effectiveness of this automated feedback, especially for learners of American Sign Language (ASL).

### Invention Description

Researchers at Arizona State University have developed ASLHelp, a self-paced American Sign Language application that uses a two-step mechanism to evaluate the effectiveness of automated feedback. ASLHelp provides context-based explainable feedback to facilitate higher learning outcomes.

The two-step mechanism involves first having users learn ASL gestures (as performed by experts) for everyday words, and then evaluating their progress by having users perform gestures of a given word that they have learned. This system compares expert gesture execution with learner's self-recorded video and checks them for correctness through recognition features for location, movement, and handshape.

### Potential Applications

- Combat training
- Medical surgery
- Performance coaching
- Deaf and Hard of Hearing (DHH) education

### Benefits & Advantages

- Improved performance in execution of gestures (picking up on finer details in the videos than experts)
- Extendability of automated feedback to other gesture-based applications in different fields

Related Publication: [Engendering Trust in Automated Feedback: A Two Step Comparison of Feedbacks in Gesture Based Learning](#)

