# Ideation Phase Literature Survey

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| Date | 16 November 2022 |
| Team ID | PNT2022TMID04184 |
| Project Name | Real-Time Communication System Powered by AI for Specially-Abled |

**Introduction:**

People who are dumb or deaf are, psychologically speaking, still people. In the entire world, about 5% of people have hearing loss. People who are deaf or dumb mostly communicate with others by using sign language, which they do by making various hand and body gestures. For a deaf population of around 7 million, there are only about 250 qualified sign language interpreters in India.

# A Novel Approach as an aid for Blind, Deaf and Dumb People:

**Published on:** 19 October 2017.

**DOI:** [10.1109/SSPS.2017.8071628](https://doi.org/10.1109/SSPS.2017.8071628).

## According to this work, the individual can convey the message and communicate as he or she sees fit. Deaf and dumb people can communicate using American Sign Language, while people who cannot comprehend sign language can use the device to get output in audio, braille, or regular text shown on an LCD. They can now engage with the outside world thanks to this.

## Pros:

## • Uses the Braille writing system.

## • Uses the Cons:

• Relies on extraneous parts, such as hand gloves;

• Connectivity is achieved via an Arduino master-slave arrangement, which is not suitable for long-distance communication.

# Assistive Sign Language Converter for Deaf and Dumb:

**Published on:** 21 October 2019.

**DOI:** [10.1109/iThings/GreenCom/CPSCom/SmartData.2019.00071](https://doi.org/10.1109/iThings/GreenCom/CPSCom/SmartData.2019.00071).

## To narrow the communication gap with hearing persons, a prototype assistive gadget for Deaf-mute people is shown in this paper.

## Pros:

## • The system is transportable.

## Cons:

• Uses just Indian sign language for training the model rather than the universal sign language.

# Intelligent Gloves for Deaf and Dumb People:

**Published on:** 30 November 2021.

**DOI:** [10.1109/IEMENTech53263.2021.9614717.](https://doi.org/10.1109/IEMENTech53263.2021.9614717)

## The major goal of this project is to provide assistance to dumb and deaf individuals so they can express their sentiments and emotions whenever they wish. Additionally, it would be useful in matters of health and education pertaining to the deaf and dumb. To enable the wearer connect with others, the gloves have sensors that, when activated, display a message on the phone.

## Cons:

• The project's complexity and use of electrical components make it difficult for those with special needs to carry out remotely.

# Glove Based Deaf-Dumb Sign Language Interpreter:

**Published on:** 29 October 2021.

**DOI:** [10.1109/RTEICT52294.2021.9573990](https://doi.org/10.1109/RTEICT52294.2021.9573990).

## The six axis MPU6050, which is utilised for sign language recognition, is controlled by a small CPU based on the Raspberry Pi. When a hand tilts, a triaxial accelerometer is utilised to measure it. The external analogue to digital converter MCP3008 connects the flex sensor module to the microcontroller. Message sending decisions are made using information from the MPU6050 and MPU3008. The suggested system can translate various indicators into text and speech messages. It has been conditioned to recognise various symbols and performs well.

## Cons:

## • Specially-abled people appear weird in front of the audience when using gloves to detect hand movement and gestures.