# Literature Survey

## Real-Time Communication System Powered by AI for Specially Abled

## ABSTRACT


- The main purpose of this research is to enhance the communication of the disabled community.
- The authors of this chapter propose an enhanced interpersonal-human interaction for people with special needs, especially those with physical and communication disabilities.


## INTRODUCTION

- Communication is a social process of exchanging information from one entity to another in verbal and non-verbal form.
- It defines our existence and it is an important instrument that connects people together.
- In several projects, the framework was applied : the hearing impaired between Swedish as a second language and hearing impairment, language development in hearing impaired children, and monitoring device for the deaf-blind.

## Non – Verbal Communication

- Deaf children whose access to usable conventional linguistic input, signed or spoken, is severely limited nevertheless use gesture to communicate.
- These gestures resemble natural language in that they are structured at the level both of sentence and of word.

## References :


1. **Spontaneous sign systems created by deaf children in two cultures – Goldin-Meadow S, Mylander C (1998).**

The spontaneous sign systems developed in these cultures shared a number of structural similarities:

- Patterned production and deletion of semantic elements in the surface structure of a sentence.
- Patterned ordering of those elements within the sentence.
- Concatenation of propositions within a sentence.

These striking similarities offer critical empirical input towards resolving the ongoing debate about the 'innateness' of language in human infants.

2. **The language of gestures. searching for effective communication b/w the dentist and the hearing-impaired patient – Wieczkowska I, Lisiecka K (2006).**

- The aim of this article is to draw attention to the sign language as an alternative form of communication to oral language.
- The need to discuss this topic stems from contacts of the practicing dentist with hearing-impaired patients with whom communication should be more effective.

## Facial Expressions

- When somebody is talking , changes in facial expressions are noticed and respond accordingly. These include raising eyebrows, yawning , sneering, rolling eyes, gaping, and nodding. The meaning of these movements is pretty much the same in all cultures.
- Hearing participants were more accurate in perceiving the display of Happiness. Display of disgust was perceived better by the deaf participants.

**References :**


1. **Types of Nonverbal Communication – Kendra Cherry (2014).**
    - Body Language and posture
    - Proxemics
    - Paralinguistics
    - Eye Gaze
    - Haptics
    - Appearance
    - Artifacts

2. **Deafness and perception of nonverbal expression of emotion – Weisel A (1985).**

    - To assess this possibility two methodological innovations were made :
    - Stimuli were displayed of nonverbal messages with various emotional contents presented by deaf people in sign language.
    - Also, no verbal labels identified emotional content of the messages. Sixty hearing and 45 deaf male college students watched films of emotional expressions in sign language.


## Visual Language models

- This article presents a study that examined the impact of visual communication on the quality of the early interaction between deaf and

hearing mothers and fathers and their deaf children aged between 18 and 24 months.

- However, while active elicitation of attention is an important part of successful communication with young deaf children, this does not appear necessary for typically developing hearing children who turn to look at their mother's face on hearing her voice.

## References :


1. **Deaf persons' communication possibilities in relation to auditory and visual symbols – Falkenberg ES, Olsholt R (1991).**

    - This article presents deaf people's possibilities of communication.
    - The later deafness is acquired, the better the individual's ability to communicate in a hearing society.
    - Deaf people are far more dependent upon visual language symbols than are hearing people.

2. **Intuitive parenting as a model for understanding parent-infant interactions when one partner is deaf – Koester LS (1992).**

    - This paper reviews the concept of intuitive parenting, with particular focus on its applicability to parent-infant dyads in which the parent or child is deaf. Although the conceptual model discussed in this paper was developed primarily from observations of hearing dyads, it has the potential to contribute to our understanding of early adaptive processes in other populations as well.


## Play Behaviour

- Hearing and hearing-impaired children attending an integrated preschool were observed in a free play situation.
- The data indicate that hearing children interact more frequently with other hearing children on several behavioural categories like vocalizations , social play, and physical contact.

- Implications for the education of young children who are deaf and hard of hearing are important specifically for educational and social benefits that accrue to those who are integrated throughout the school day.

## References :


1. **Interaction of deaf and hearing preschool children – Arnold D, Tremblay A (1979).**

    - The principal objective was to discern how hearing and deaf children interacted and modified their communication skills as a function of hearing status.
    - These findings are consistent with those of research on other exceptional children, such as the mentally retarded, in showing that, while hearing-impaired children showed no peer preference, they were least preferred by normal peers.


## CONCLUSION

- Unfortunately there is a small group of people with physical and communication disabilities since birth.
- To assist these people in their communication needs, we propose an improved real time behaviour monitoring application for the disabled by employing a real time facial expression recognition system and Short Messaging System (SMS) to send notification to the third party for monitoring purposes.