

# **Pengembangan Alat Bantu Latihan Wicara Bagi Anak Tunarungu Berdasarkan Pengenalan Wicara Visual**

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## **ABSTRACT**

Speech training for children with hearing impairment is quite complex and requires a specialist called a speech therapist. It's just that the number of speech therapists is very limited, so the interaction time with the therapist is also very limited. Therefore, speech training aids, in this case computer-based, are needed for deaf children to learn independently. This tool is expected to be able to train deaf children to imitate pronunciation and provide visual feedback.

The working principle of this tool is to compare the results of visual speech recognition of deaf children with speech therapists. Given the characteristics of lip color and movement, visual speech recognition requires proper segmentation and tracking methods. Lip color that does not always contrast well with the surroundings, and the shape of the lips constantly changes during the lip reading process, necessitating the use of segmentation and tracking methods suitable for both characteristics. Our previous research, by combining the Frame Difference and Horizontal-Vertical Image Projection methods, resulted in a fairly good recognition of 5 everyday words in Indonesian. This method is modified in this study, and has been able to perform visual speech recognition for 10 words everyday.

The best result of this study is the average recognition accuracy of 85.64% when using MLP (Multi Layer Perceptron). The target output of this research is a draft publication in a reputable international journal, which has also been successfully completed.

*Kata Kunci: speech training aids, deaf, visual speech recognition*