

ABSTRACT

A mobile-based application has been designed to assist children with Down syndrome in learning to speak in Indonesian. The application aims to enhance verbal communication skills through an interactive, engaging, and user-friendly approach. Its main features include basic word and phrase recognition, pronunciation practice supported by audio-visual aids, and educational games that encourage active participation.

The application utilizes speech recognition technology to provide real-time feedback on users' pronunciation, enabling children to learn independently and stay motivated to practice. Additionally, it offers adaptive modules that can be tailored to each child's individual ability level, ensuring an optimal learning experience for every user.

Verbal communication poses a major challenge for children with Down syndrome, impacting their social interaction, learning process, and emotional development. To address this need, the mobile application serves as a learning tool that supports the development of language skills for children with special needs within the framework of inclusive education in Indonesia.

The development process involved interdisciplinary collaboration among linguists, speech therapists, and software developers to ensure a scientifically grounded and child-friendly technological solution. Core features include AI-powered speech recognition, pronunciation exercises for basic Indonesian vocabulary, interactive animated visuals, and educational games that promote active learning.

This application is expected not only to be an enjoyable self-learning tool, but also a communication bridge between children, parents, and educators. By leveraging digital technology, the innovation opens new possibilities for building a more inclusive, adaptive, and sustainable educational ecosystem for children with special needs.

Keywords: Mobile application, Down Syndrome, Learn to speak, Basic word and phrase recognition, Pronunciation practice, Speech Recognition.