



HEAR ME: ASSISTIVE TECHNOLOGY FOR THE DEAF AND HEARING IMPAIRED

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PRODUCT BACKGROUND

Hearing impairment is one of the topics within special education. This disability is one of the factors contributing to the difficulty of learning in school, which could result in these students being left behind, which could also lead to societal problems later on. Understanding the hand signals or codes is extremely important as this is the main way of communication in class. Not understanding of the sign language could lead to problems for the students as all the teachings would be conducted in sign language. Studies have also shown that deaf children who were not provided with sign language early on in their development are at risk for linguistic deprivation. To the hearing impaired, sign language is one way of communicating with others that are used within their community.



PUBLICATIONS

- Kamarudin, D., Hussain, Y., Applegate, E. B. & (2018). An ethnographic qualitative study on the Malaysian preschool and special needs' children home and school reading habits. *International Journal of Pedagogy and Teachers Education*, 2, 21-30.
- Kamarudin, D., & Hussain, Y. (2019). Implementation of Malaysian hand signal codes into applications for the hearing impaired. *Asian Journal of Instruction*, 7, 54-63.
- Kamarudin, D., Kamarudin, D., & Hussain, Y. (2019). Hearing Impaired Student Achievement on the Bahasa Melayu Subject : Are These Tests Applicable? *Jurnal Pendidikan Bitara*, 12, 59-67.
- Kamarudin, D., & Mohd Nasaruddin, N. I. (2020). A Qualitative Case Study on Handling Electronic Media-Exposed Kindergarten Children : Challenges and Strategies. *Jurnal Pendidikan Bitara*, 13, 9-16.
- Kamarudin, D., Khiruddin, M. N. K., Azizul, F. (Submitted). Universal Journal of Educational Research.

CONFERENCE PRESENTATIONS

- Preliminary Findings for The Implementation of Bahasa Isyarat Malaysia and Bahasa Malaysia Kod Tangan Teaching Tool into Android and iOS Applications. (2018). *2nd International Conference on Language Learning and Teaching, Malaysia*
- BMKT and BIM: Two Different Hand Signal Codes for the Hearing Impaired in Malaysian Education. (2018). *International Learning, Teaching and Educational Research Congress, Amasya, Turkey*.
- Hearing Impaired Student Achievement on the Bahasa Melayu Subject : Are These Tests Applicable? *Special Education International Conference (2019). Malaysia*.

COLLABORATORS



SIGNIFICANCE/BENEFITS

- Hearing impaired students would be able to adopt better in classes through the interactive tools.
- Teachers and parents are able to track student progress.
- Artificial Intelligence** features – camera is able to recognize the picture and link to sign language.
- Improve their Bahasa Melayu performance.
- Improve their communication skills.
- NO OTHER** pure Bahasa Melayu Kod Tangan Application out there!

ENVIRONMENTAL IMPACT

- This could be utilized as a teaching tool/aid in the form of applications, where no paper would be used.
- Application could be registered for new users each time. Teachers are also connected with students through the application.

MARKET STUDY FINDINGS

- Majority (90%) of the teachers describe their students as not being able to understand what they are trying to teach.
- Some teachers attribute this to the non-standardized usage of language that students use at the initial stage of study.
- They also relate this to students having a short attention span where they would remember certain things when being taught, and forget it the day after.
- Most of the teachers who attended the focus group interviews collectively agreed that they use BIM as a support language to help explain certain concepts.
- All the participants agreed that having technology as a teaching aid would help them tremendously.
- Students are also more likely to remember what they see on the computer to what the teachers have taught or the books they were asked to read.

MARKETABILITY

92755 total students with disabilities

Student with other types of disabilities such as slow learners

Special education teachers

Parents of special needs students

General public who would like to learn.

Packaged to government agencies

ACHIEVEMENTS

- GOLD MEDAL**, 32nd INTERNATIONAL INVENTION, INNOVATION & TECHNOLOGY EXHIBITION 2020.
- GOLD MEDAL**, CREATION, INNOVATION, TECHNOLOGY & RESEARCH EXPOSITION, 2020.
- GOLD MEDAL**, FACULTY OF INDUSTRIAL MANAGEMENT INNOVATION EXHIBITION 2020.
- SILVER MEDAL**, 31st INTERNATIONAL INVENTION, INNOVATION & TECHNOLOGY EXHIBITION 2019.
- GOLD MEDAL**, CREATION, INNOVATION, TECHNOLOGY & RESEARCH EXPOSITION, 2019.
- MANAGEMENT AWARD**, CREATION, INNOVATION, TECHNOLOGY & RESEARCH EXPOSITION, 2019.
- GOLD MEDAL**, CREATIVE AND INNOVATION TEACHING AND LEARNING OF LANGUAGE (CINTELL), 2018.
- BRONZE MEDAL**, CREATION, INNOVATION, TECHNOLOGY & RESEARCH EXPOSITION, 2018.
- BEST POSTER AWARD**, Public Lecture 2017 Jointly Organized by Faculty of Industrial Management and Department of Academic and International Affairs University Malaysia Pahang. (2017).

PRODUCT FEATURES

- Artificial Intelligence - After taking the photo, the software would recognize the picture and brings out the correct hand signal code.
- Short sentences to help students learn sentence structure.
- Colours
- Alphabet
- Word categories
- Activities – Short answer, matching and many more.
- Short stories

