INTERACTIVE, VISUAL LEARNING-BASED TOOL FOR HEARING-IMPAIRED CHILDREN TO IMPROVE LANGUAGE

22_23-J 18

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Specializing in Data Science

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DECLARATION

I declare that this is our own work, and this proposal does not incorporate without acknowledgment any material previously submitted for a degree or diploma in any other university or Institute of higher learning, and to the best of our knowledge and belief, it does not contain any material previously published or written by another person except where the acknowledgment is made int he text.

Signature: Date: 01/05/2023

Signature of the Supervisor: Date:
Signature of the Co-Supervisor: Date:

ABSTRACT

ACKNOWLEGEMENTS

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1. INTRODUCTION

1.1 Background

Despite the numerous advancements in hearing aid devices and cochlear implants, hearing-impaired children continue to face cognitive and linguistic challenges that significantly impact their language development and educational outcomes. While these technological solutions have improved the auditory experience for these children, they do not necessarily ensure the development of cognitive and linguistic skills on par with their hearing peers [5]. Therefore, it is crucial to address the research gap of developing a comprehensive learning tool specifically designed for hearing-impaired children.

The importance of early language acquisition cannot be overstated, as the first 4-5 years of life are critical for a child to become fluent in their native language [2]. However, for hearing-impaired children, exposure to spoken language is often limited, resulting in a substantially smaller vocabulary compared to their hearing peers [3]. This, in turn, creates challenges in their educational experience as it is predominantly centered around verbal languages. The study conducted by the Community Child Health, Royal Children's Hospital, Australia, further emphasizes the relationship between early detection of hearing impairment and educational outcomes [6].

The current research on hearing-impaired children predominantly focuses on the benefits of hearing aids and cochlear implants, which, although highly effective in improving auditory perception, do not necessarily ensure a holistic development of language and cognitive skills. Consequently, there is a need for an interdisciplinary approach that considers both the technological advancements in hearing devices and the linguistic and cognitive development of these children. A learning tool that addresses the unique learning needs of hearing-impaired children and incorporates alternative methods and techniques, along with supporting their auditory experiences, could significantly improve their linguistic and cognitive development.

In addition, there is a need to investigate the role of parents and caregivers in the learning process of hearing-impaired children. The misconception that hearing aids can solve all problems related to language development may lead to a lack of parental involvement and engagement in the learning process [4]. Therefore, it is essential to explore strategies that encourage and equip

parents to actively participate in their child's linguistic and cognitive development. A comprehensive learning tool should not only cater to the child's individual needs but also provide guidance and support for the caregivers.

In conclusion, the research gap lies in developing an inclusive learning tool that addresses the unique linguistic and cognitive challenges faced by hearing-impaired children. By taking an interdisciplinary approach that combines technological advancements with alternative methods and techniques, along with fostering parental engagement, we can work towards improving the educational outcomes and overall well-being of these children. Further research in this area holds the potential to significantly impact the lives of hearing-impaired children and their families.

1.2 Research Gap

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