Chapter 11

A Preliminary Evaluation of Learning Sign Language Through Information and Communications Technology (ICT)

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ABSTRACT

Sign language is a medium of communication used to teach students with hearing problems and is also used in their daily lives in lieu of spoken language. Although there are individuals with hearing problems who still have the ability to speak the language, their number is minimal, and their verbal ability is very limited. The educational application or aids which are tailored and designed for mobile devices towards sign language is scarce. And there is a lack of teaching and learning aids to assist the deaf community in the learning process and those who are interested in learning Malaysian Sign Language. So, this chapter investigates a preliminary evaluation and previous research regarding the use of information and communications technology (ICT) for sign language. Future studies for this research will help a researcher develop a teaching aid based on mobile devices and enable users to use it as a reference and improve their communication. This mobile application is not only suitable for the deaf community but also for the general public.

INTRODUCTION

Sign language is a medium of communication that communicate visually by employing the hands, arms, and face, as well as the upper body for production and the eyes for comprehension, to communicate with Deaf/Hearing Impaired (D/HH) individuals around the world in their daily lives to replace oral language (Mann et al., 2015). It consists of a combination of hand movements and facial expressions (Neiva & Zanchettin, 2018) and is expressed with hand gestures, body movements, and signs (Karpov et al., 2016). Besides, sign language is a form of communication that uses the movement of the hands, body, and lips to deliver information and express a speaker's thoughts rather than speech. Instead of using acoustic sound patterns, sign language uses hand forms, orientation, movements of the hands, arms, and body, as well as facial expressions and lip patterns, to visually impart word meanings (Sahid et al., 2016). Sign language also makes its users think visually because its delivery pattern is more towards visuals and its communication involves the use of the eyes (Wilbur, 2013). An individual with D/HH struggles to learn how to communicate since they cannot hear all of the sounds around them, including their own voice. According to World Health Organization (WHO, 2017), almost 360 million people or 5% of the world's population have hearing loss that can be mild, moderate, severe or profound are struggle to communicate every day. In contrast to acoustically transmitted sound patterns, most people with hearing disabilities, especially those with mild to profound disabilities, communicate via sign languages, with manual or gestural communication to express meaning (Neiva & Zanchettin, 2018).

There are two types of sign language in Malaysia, namely *Kod Tangan Bahasa Melayu* (KTBM) dan *Bahasa Isyarat Malaysia* (BIM). The listening community has designed KTBM for the use of the hearing impaired. The code for KTBM was taken from American Sign Language (ASL), including some local and grammatical signs representing nouns and verbs used in Malay. KTBM is used as a communication medium and also in the teaching and learning process in schools. On the other hand, BIM is the official language for the hearing-impaired community in Malaysia. The hearing-impaired community has been designed for their own use and to reflect their own cultural context. BIM is used for ordinary daily conversation by the hearing-impaired community and has been gazettes as the official language of the hearing impaired in Malaysia.

The Deaf/Hearing Impaired (D/HH) community in Malaysia uses *Bahasa Isyarat Malaysia* (BIM) as their communication method. On the other hand, informal education in primary school as well as secondary school, *Kod Tangan Bahasa Melayu* [KTBM]) is being used as the formal language for communication. Although there are individuals with hearing problems who still can use verbal language, their number is minimal, and their verbal ability is very limited. This makes sign language

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