

iMSL: INTERACTIVE MALAY SIGN LANGUAGE COURSEWARE FOR THE
DEAF AND HEARING IMPAIRED

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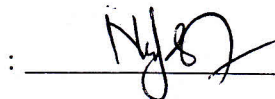
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ABSTRAK (BAHASA MALAYSIA)

Malay Sign Language (MSL) atau Bahasa Isyarat Malaysia adalah merupakan salah satu bahasa yang digunakan oleh orang-orang pekak di Malaysia untuk membantu mereka berkomunikasi dengan orang lain. Orang-orang pekak dan cacat pendengaran pergi ke sekolah istimewa bagi mempelajari MSL. Pada era kini, teknologi digunakan untuk tujuan menyediakan kursus MSL untuk orang-orang yang cacat pendengaran dan pemegang mereka. Dengan adanya kursus MSL berasaskan teknologi, pembelajaran MSL bukan sahaja boleh dilakukan di sekolah, malahan di rumah mahupun di mana-mana sahaja. Ini menjadikan aktiviti pembelajaran berleluasa. Berdasarkan hujah ini, kajian ini bertujuan untuk mencadangkan satu model bagi kursus multimedia interaktif yang dinamakan sebagai iMSL. Sehubungan itu, kertas kerja ini akan membincangkan konsep latar belakang untuk keperluan dan reka bentuk iMSL. Objektif kajian ini ialah 1) Untuk menentukan keperluan antara muka untuk iMSL untuk orang-orang yang pekak dan cacat pendengaran, 2) Untuk reka bentuk dan pembangunan iMSL, dan 3) Untuk menilai kebergunaan iMSL melalui ujian pengguna. Dalam menjayakan kajian ini, Metodologi Waterfall telah diadaptasi. Kaedah ini melibatkan tiga fasa iaitu Keperluan Pengguna, Pembangunan Prototaip, dan akhirnya Ujian dan Fasa Penilaian. Model ADDIE juga disesuaikan dalam membangunkan prototaip iMSL. Pendekatan kualitatif seperti pemerhatian dan temu bual telah dijalankan dengan empat orang pelajar darjah 1. Kesimpulan daripada hasil kajian ini menyatakan bahawa teknologi berdasarkan perisian adalah alat yang boleh digunakan sebagai alternatif untuk membantu proses pembelajaran bagi pelajar pekak dan cacat pendengaran. Kaedah ini mudah untuk difahami dan dapat membantu guru untuk mengajar dalam cara yang lebih menarik.

ABSTRACT (ENGLISH)

Malay Sign Language (MSL) or Bahasa Isyarat Malaysia is a language that has been used by the deaf people in Malaysia. The deaf and hearing-impaired people go to special schools to learn MSL. In current age, technology could be utilized for the purpose of providing MSL course for the hearing-impaired people and their stakeholders. With the provision of the technology based MSL course, learning MSL not only happen in schools, but also at home, or anywhere. This makes the learning activity pervasive. Based on that argument, this study aims at proposing a model for an interactive multimedia courseware which is called iMSL. Accordingly, this paper discusses the background concept for the needs and design of the iMSL. The objectives of the study include 1) To determine the interface necessity for the iMSL for the deaf and hearing-impaired, 2) To design and developed the iMSL, and 3) To evaluate the usefulness of iMSL through user testing. In accomplishing this study, Waterfall Methodology was adapted. There are involved three phase which are User Requirements, Prototype Development and finally the Testing and Evaluation phase. ADDIE Model also adapted in developing prototype of iMSL. The qualitative approaches such as observation and interview were conducted with four students in standard 1. The result of this study concluded that the technology based on courseware is an alternative tool that can be used to assist the learning process for the deaf and hearing-impaired students. It is easy to understand and help teacher to teach in interesting way.

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LIST OF ABBREVIATIONS

OKU	Orang Kurang Upaya
MSL	Malay Sign Language
iMSL	Interactive Malay Sign Language
CD ROMs	Compact Disk Read Only Memories
PWD	Persons With Disability
AT	Assistive Technology
AC	Assistive Courseware
dB	Decibel
TTY	Text Telephone
IT	Information Technology
MCM	Manually Coded Malay
KTBM	Kod Tangan Bahasa Melayu
BIM	Bahasa Isyarat Malaysia
MFD	Malaysian Federation of the Deaf
ICT	Information and Communication Technology
CD	Compact Disk
VCD	Video Compact Disk
DCT	Dual Coding Theory
WMT	Working Memory Theory
CLT	Cognitive Load Theory
ADDIE	Analysis Design Development Implementation Evaluation
LR	Literature Review

CHAPTER 1

INTRODUCTION

1.1 Background of Study

The United Nations states that the estimated number of persons with disabilities (PWD) in Malaysia is about 2.8 million (Zulkiple, 2011). These increasing numbers of PWD attracts the researchers to develop various technologies that could assist them in their daily life, which is known as Assistive Technology (AT). The term AT has long been used, referring to technologies developed for PWD. Each PWD uses different AT based on their types of disability. The AT could be founded in terms of hardware and software. In conjunction, this study focuses on designing assistive educational software for deaf and hearing-impaired people, which is known as Assistive Courseware (AC). AC could be used to help hearing-impaired students in their learning process.

There are a number of disabilities including hearing-impairment or deaf. Murniwati (2007) identified that hearing impairment can occur in the outer, middle, or inner ear along the pathway to the brain. Table 1.1 lists and classifies the degrees of hearing loss in dB (Decibel). Referring to the table, this study considers all types of hearing loss.

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internal user
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