Application for learning sign language and Morse code

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Abstract

This project focuses on the development of a learning application for Sign Language and Morse Code, aimed at providing a systematic, accessible, and user-friendly platform for the general public. The primary objective is to empower users to effectively apply these communication skills in real-world scenarios, thereby contributing to the reduction of communication barriers within Thai society—specifically between the general public and individuals with hearing or speech impairments. The developed application features verified, easy-to-digest content presented through an intuitive interface and an appropriate instructional format.

The user satisfaction assessment revealed that the majority of respondents expressed "High" to "Highest" levels of satisfaction regarding usability, aesthetic design, content accuracy, and system stability. These findings demonstrate that the application effectively addresses user requirements and successfully fulfills its intended goals.

Keywords: *Sign Language, Morse Code*

Introduction

In a world where communication is the cornerstone of existence, effective information exchange is vital for building mutual understanding and healthy relationships. However, many individuals face significant barriers when communicating with the hearing-impaired or accessing information in inconvenient formats, making social integration a challenge. Sign language, a visual-gestural language, serves as a primary medium that

Experimental process

1. To develop a learning application for Sign Language and Morse Code.

2. To create an accessible platform that enables the general public to learn and utilize Sign Language and Morse Code for effective communication.

3. To reduce social inequality within Thai society through the use of the application.

Project Scope

1. Target Group: General individuals interested in learning Sign Language and Morse Code.

2. Content Scope: Covers fundamental vocabulary and basic phrases for both Sign Language and Morse Code at an introductory level. enables the hearing-impaired to communicate effectively.

To address these challenges, this project proposes the development of a learning application for Sign Language and Morse Code. The platform is designed to be user-friendly and accessible to everyone, promoting interactive learning to foster communication equality and bridge the gap between different groups in Thai society

3. Development Platform: Research and development using Glide Apps via personal computer.

4. Learning Platforms: Accessible via smartphones, tablets, and computers.

Expected Benefits

1. To provide knowledge and develop communication skills for interacting with the hearing-impaired and gaining proficiency in Morse Code.

2. To support social equality by providing opportunities for people to learn and communicate more easily with the hearing-impaired community.

3. To promote self-paced learning through a dedicated Sign Language and Morse Code application.

Research Methodology

Materials and Equipment

1. Glide Apps

2. Notebook or computer

3. Mobile phone

Procedure

1. Select the Sign Language and Braille category.

2. Choose a sign language word of interest.

3. Record a clip of the sign language gesture and create a GIF video.

4. Open Glide Apps and register to use the app.

• Tap "New app" to create an application and select "Basic App".

• Tap "Data" to place the application database.

• Name the first table column "Title" and enter the topic name.

• Name the second table column "Description" and enter the sentence "Basic greeting vocabulary with a demonstration video for practice".

• Name the third table column "Code" and enter the subject code, e.g.,

SL Greeting

• Name the fourth table column "Picture" and enter an image relevant to the sign language topic as the cover image.

• Name the fifth table column "Video" and enter the GIF video.

• Name the sixth table column "Advice" and enter

"Practice until you are proficient for use in daily communication."

5. Click on Layout to design the application.

• Click on the first topic that appears, then observe Components and Collection to add words within the topic.

• Click the plus sign, then find the Text and Picture icons using Text 2 and Video 1.

6. Design according to the given topic.

7. Launch the application

The result

The application project for learning sign language and Morse code aims to evaluate user satisfaction in various aspects, including content accuracy, app stability, ease of use, and app aesthetics, using a satisfaction questionnaire from 45 respondents. The researchers analyzed the data by calculating the mean and standard deviation. The results of the data analysis are shown in table.

Evaluation Criteria	Mean	Standard deviation	Satisfaction level
1. Ease of use.	4.42	0.69	Good
2. The aesthetic appeal of the application.	4.09	0.85	Good
3. The authenticity of the content.	4.51	0.73	Very good
4. Application stability.	3.89	1.01	Good

The result and Discuss

Based on the evaluation of usability, respondents were generally satisfied at a good level, with an average score of 4.42. This shows that the application has a simple user interface, easy-to-understand menus, and is suitable for general users. The assessment of the application's thetics found that most respondents were satisfied at a good level, with an average score of 4.09, indicating that the design is appropriate, the colors and overall elements are attractive, and it enhances usability. The content accuracy assessment showed that most respondents were very satisfied, with an average score of 4.51, showing that the app's content is accurate, easy to understand, and suitable for learning sign language and Morse code. The evaluation of the application's stability found that most respondents rated it as good, with an average score of 3.89, indicating that the application can function continuously, has minimal freezing or malfunction issues, and can adequately support usage. Overall, from the evaluation of user satisfaction in all four areas, most respondents were satisfied at a good to very good level, indicating that the application for Learning sign language and Morse code can meet users' needs quite well, both in terms of content, usability, stability, and app aesthetics. This aligns with the project's objectives and can be further developed and applied effectively in everyday learning and communication.

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