

# Mobile Picture Dictionary Application With Text Pronunciation

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**Abstract-** In Malaysia, lower primary school students have been using the picture dictionary as the guide to learn objects in multiple languages such as Malay, English, Chinese and Tamil. Not only that, teachers also have been using it as a material to assist them in teaching language subjects. Some of the learning activities that involved the usage of picture dictionary in school is sentence construction, vocabulary learning, arts drawing, and crucial activity such as oral assessment. Not only that, students also have been using picture as a source of exploring and discovering new things. However, the picture dictionary is lacking few things which can be improved with an introduction of an application which is called picture dictionary mobile application with text pronunciation. Traditional picture dictionary can be really heavy for children to carry. Not only that, it does not allow children to search what they want easily in the dictionary. Lastly, even though it taught student what certain objects are, it does not teach them on how to pronounce the word correctly.

In this project, the first objective is to study what is picture dictionary and to analyze the importance of picture dictionary. Fifty questionnaire forms were done and distributed to two schools which are Sekolah Kebangsaan Tronoh and Sekolah Kebangsaan Seri Tronoh. Questions were also asked to collect information about the picture dictionary mobile application that is going to be developed. At the end of the research, it was found that the responses are convincing that picture dictionary mobile application is a good application to be developed in assisting in lower primary school students learning. This leads to Primary objective, which can assist lower primary school children in learning languages such as Malay, English, Chinese and Tamil.

**Keywords-** Picture dictionary, mobile application, primary school students, local languages

## 1. INTRODUCTION

Mobile learning is currently a trending type of learning which started to be commonly used by children and teenagers. It can be defined as any educational provision where the technologies involved are handheld. The criteria which must be involved for it to be considered mobile learning are mobility of technology, learning and learners. [1] some examples of the technology are mobile phones and tablets. Mobile learning is currently a huge increase which uses many portable device such as phones, tablets and laptops to serve at anywhere and anytime. [3] since primary school nowadays can get a hold of mobile phones and tablet, it is a great opportunity to develop a software which can help them learn about things in other language. This could be very helpful when the students want to write essays in schools. Not only that, the students also have the opportunity to learn more things and their appearance nature, behavior, habitats and other relevant information through the picture.

With the development of this application, it will help primary school students to further learn about many things that exist in the world in other language and allow them to apply to writing essays or other academic related activity.

## 2. RELATED WORK

### A. What is a picture dictionary?

Picture dictionary is a dictionary which defines words in the forms of drawing or a picture. The sole reason for this picture is to easily teach learners on how does certain words look like. The picture of the word helps in depicting the appearance, the colors, the size or even the behavior of the word itself. Not only that, it also helps learners learn the word in their native language and other language. [2]

The picture dictionary is mostly tailored for younger children since drawing and pictures really help in keeping their interest in learning. Not only that, picture also helps more in memorizing information easily. Since the dictionary itself contains word from other language which is unusual to the children, the drawing can really help the children learn and remember the word itself.

#### B. The needs of pictures and drawings in dictionary

The reason why some dictionaries have pictures is to help learners to understand the definition in the form of drawings and pictures. [2] This is very helpful since the drawings or pictures can explain many things such as the shape, appearances and even the behavior of animals or people in the drawings. Young children may have not yet seen certain things in real life. Therefore, it is very nice for children to learn about it in the dictionary. Not only that, picture and drawings really helps in children learning especially in memorizing information. Memorization can be a really useful foundation which allow us to build a strong foundation of life for us to plan for the future. Childhood is the age where memory is very effective since there is so much new information to learn and sustain especially in educational environment. A research has stated that the children which has gone through learning process with a drawn picture tend to able to recall the information learned more accurately compared to the ones who learned solely on verbal.[4] with this fact, we can see that the picture dictionary is really indeed effective for children.

#### C. Language learning in mobile learning

Mobile learning is currently can be considered at its tipping point. Tipping point basically means that it started to become trending among people. In this case, mobile learning among young children such as the primary school students started to spread like an epidemic. It's basically an idea which tell us that mobile learning is very efficient in our daily lives. [3] At first, mobile learning was focused on the role of mobile technology in education. After many years, mobile learning is now focusing on the mobility of the users and informal education that happens out of class. One of the device that is commonly used for mobile learning is the mobile phones. It has been proven that mobile phones helps in leveraging instruction, strengthen your learning based on your location, and improves learning. [1]

Research has been done that students tend to use mobile phones more in learning. It can improve students' personal and academic needs and better learn subjects in school. [1] Mobile Assisted Language Learning (MALL) is a type of language learning which uses mobile technologies. Mobile technologies are very effective in language learning in general terms. It has positive effect on improvement of language skills, strengthen the attitudes and motivation of language learner and assists learner in interaction and collaboration of knowledge. [1]

#### D. Mobile learning technology and children

Parents are considering these technology as another method of learning. We are heading towards where the world of *Free Agent Learners* "who seek out online learning resources on their own, follow a passion for a topic and fully explore it on the web, self-remediate when necessary, and are tapping into the power of educational games inside and outside of school". [3]

Mobile phone purchase for those ages 6 and above has raised by 40% in year 2010 in the US and globally 32%. Parents who are driving home from work, school, and running housework routines are using the mobile phone to entertain their children. Children's mobile apps are being used for children to learn with their parents. The iPad and other tablets are changing our way and style in education due to its design and tactile user experience they provides in the classroom. The larger size of the tablet makes it easier to read text and look at the pictures better than your phone. [3]

#### 3. System Architecture

The conceptual framework comprises two main stages. The first stage is the early analysis, which consists of problem identification and objective determination. Figure 1 shows the second stage in the application development which involves system development life cycles. The main objective of this proposed system is to develop an additional learning tool for primary school students to learn other language such as English, Chinese and Tamil to aid in their studies. Thus, the content of the lessons are age-appropriate.

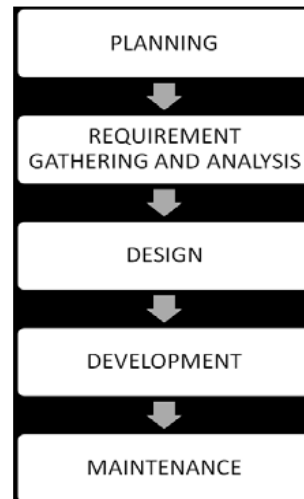


FIGURE 1: Application Development

Figure 2 shows the use case diagram for Picture Dictionary Mobile Application with Text Pronunciation. There is only one actor that engage in this application which is the primary school student. It illustrates four main use cases which are view guide, select category, search object and view object. View guide will helps student in learning on how to use the application. Select category allows student to narrow down the object's category. Search object will allow student to search through the dictionary. View object will display the object's picture and name in different languages

##### 3.1.3.1 Use Case Diagram

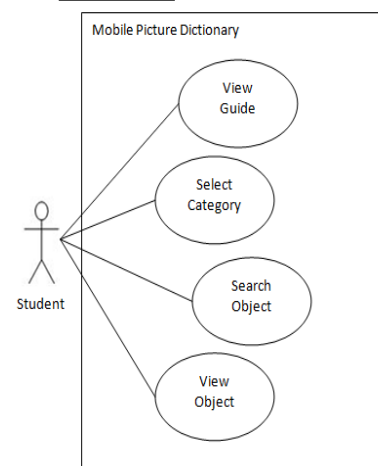


FIGURE 2: Use Case Diagram

#### 4. PICTURE DICTIONARY WITH TEXT PRONUNCIATION

The system interface was developed using App Inventor and the contents in the application were collected from reliable source in the Internet and picture dictionary book. Figure 3 shows the interface's screen shots of the application from an android device.



#### 5. SYSTEM TESTING

System testing was divided into two parts, which are developer testing and user testing. The project needs to be tested for conformance with the system requirements stated in the early stage. Below is the two parts involved:

##### (a) Developer Testing

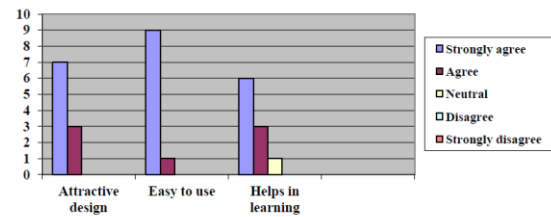
The developer needs to test the application that deals with syntax, functionality and logical errors. The developer also need to test the search function and text pronunciation. No major problem found in this testing.

##### (b) User Testing

The system had been tested with primary school children when the system was almost completed. The system is tested by 10 students under the instructions of the developer. Each student tested all the functionalities. After the application prototype testing, the student needs to fill in survey feedback form. The purpose of the survey is to collect the feedback from students regarding the usage of the application. There will be 3 questions in the feedback from which basically related to the design attractive, user friendly application and also language learning ability.

#### 6. RESULTS AND DISCUSSION

The bar chart in Figure 4 shows the result of the user testing. The rating is from 1 to 5 which rating 1 signifies strongly disagree by the users and 5 signifies strongly agree by the users. It shows that most of the primary school students like the interface design in the application. Most of them like to browse through the objects to look at the pictures. The students also think the application is easy to use. Regarding the translation, the students agree that it can help them in learning local language especially with the help of text pronunciation which can aid them in pronouncing the objects name correctly.



#### 7. CONCLUSION

At the earliest phase of the project, most of the activities performed were to determine what is picture dictionary and its importance in learning. Conducting the research about the use of picture dictionary really helps in determining whether picture dictionary mobile application is really needed by primary students. The main objective of this project is to develop an application which can help in assisting primary school students in learning things in multiple local languages such as Malay, English, Chinese and Tamil.

Developing a mobile picture dictionary will surely help students in their learning process. There are lots of functionalities the picture dictionary mobile application will have compared to ordinary ones. Those functionalities will be speech sound system which can teach student on how to pronounce certain words correctly. Not only that, it can also offer search function where students can just search through with few key presses as compared to traditional turning the pages one by one. Lastly, it also offer exercise which students can do to enhance their language skills.

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