



Faculty of Computer Science and Information Technology

*Dusun Language Vocabulary Learning in Augmented Reality*  
*(DusunAR)*

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*Dusun Language Vocabulary Learning in Augmented Reality*  
(*DusunAR*)

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## **Abstract**

*The concern of language endangered is serious when dominant speaker stop using theirs heritage language meanwhile begin using other language such as English and Bahasa Malaysia in their daily conversation. This scenario happens to Dusun language in Sabah. Where only older generation fluently spoken with this language meanwhile, most children rarely speak or do not know this language. This awareness of language extinction is a must for parents to teach their children to speak their own mother tongue instead of teaching major language. Therefore, the purpose of this application is to develop a mobile based application with implementation of augmented reality (AR) in motivates children to learn Dusun vocabulary besides preserving the existing of this Dusun language in the one-third of the population in Sabah.*

## **Abstrak**

*Bahasa yang terancam menjadi serius apabila pengguna Bahasa ibunda berhenti menggunakan bahasa warisan mereka malahan menggunakan bahasa lain seperti Bahasa Inggeris dan Bahasa Malaysia didalam perbualan harian. Senario ini berlaku kepada Bahasa Dusun di Sabah. Di mana hanya generasi tua yang mahir bertutur dalam bahasa ini sementara itu, kebanyakan anak muda jarang bertutur atau tidak mengetahui bahasa ini. Kesedaran mengenai kepupusan bahasa adalah suatu pekara wajib bagi ibu bapa untuk mengajar anak-anak mereka untuk bertutur dalam bahasa ibunda mereka sendiri dan bukannya mengutamakan bahasa asing. Oleh itu, tujuan aplikasi berasaskan mudah alih dengan pelaksanaan teknologi 'augmented reality' (AR) ini dibangunkan adalah untuk mendorong kanak-kanak mempelajari perbendaharaan kata dalam Bahasa Dusun selain memelihara Bahasa Dusun yang ada di dalam jumlah sepertiga dari penduduk di Sabah.*

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## **Chapter 1: Introduction**

### **1.1 Introduction**

Sabah population is consist of 33 native group that have various languages and ethic dialect to communicate. Kadazan-Dusun is the largest ethnic group in Sabah that makes up almost thirty percent of the population ("People & History", 2010). However, this Dusun language which also a part of heritage and identity may slowly endangered since fewer people claims this language as their own but do not use it in daily conversation or pass it to their children. As a result, their children may not understand nor fluently can speak this language.

Globalization also leads to the extinction of language. According to Skutnabb-Kangas, "Languages are today being killed and linguistic is disappearing at a much faster pace than ever before in human history" (as cited in Mohideen H., n.d). Children today, tends to learn language that would give them advantages in education, occupation, social life and urbanization for example English where it become the strong language during this era. Therefore, it makes ethic dialect not important hence being used fewer in daily activities.

### **1.2 Problem Statements**

Living in this era of technology, it would be challenging to educate children in the form of a book only. Besides, having a book with less interactive leads to a low learning process especially in children that always want to discover things around them. Other than that, maintaining this language to the next generation and make their own tribe knows their language would be challenging especially for parents since kids nowadays tends to love spending their times with electronic gadgets.

Currently, Dusun language learning is deliver by people through social media such as Facebook, Blogs and mobile application. However, the knowledge is hard to apply for children as well as the non-Dusun speaker since it only consist of text and graphical representation. Therefore, it makes learners hard to pronounce the word as it does not provide any audio to assist in their learning process.

### 1.3 Objectives

1. To develop and design interactive Dusun language vocabulary in mobile application with augmented reality implementation that helps parent to teach their children.
2. To enable children and non-Dusun speaker to pronounce the vocabulary by listening to the sound of the word.
3. To enable children and non-Dusun speaker to learn Dusun vocabulary in various categories.

### 1.4 Methodology

Since we focus on planning and sequential design practices also working on a tight deadline therefore, Rapid Application Development (RAD) is the selected methodology for this project because it emphasizes rapid prototyping and iterative delivery to speed up the development process. Below is the graphical presentation of RAD invented by James Martin.

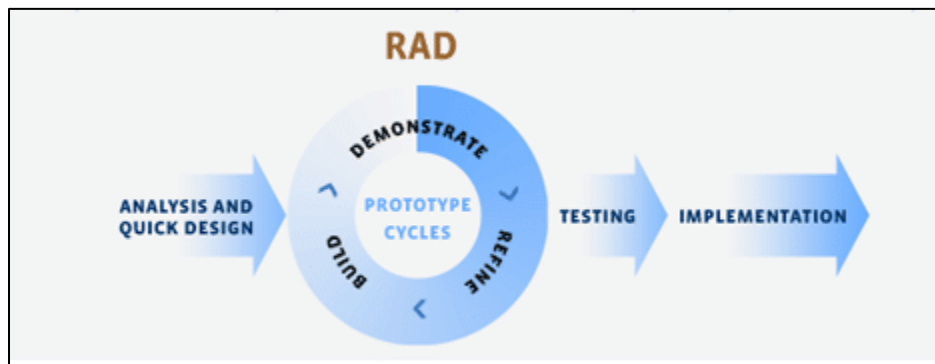


Figure 1.1: Graphical representation of RAD (Ghahrai, A., 2017)

The first step in this software development is planning requirements. During this stage, it figured out the project's scope, application requirements and estimated project timeline. Next, determining the system architecture where initial modelling and prototypes are created. In this development, the prototype cycle present a simple and intuitive approach with Augmented Reality (AR) content creation which are the creation of 3D models from real object using an image-based modelling tool and convert it into an interactive AR element using an AR authoring tool. After prototype cycle, testing phase takes place.

In this phase, user will provide a feedback such as likes and dislike also any usability issues in the virtual environment to improve the prototypes and meet the needs of the project. Lastly, in the implementation phase it involves implementing the new virtual learning environment to the user. In this phase, it mainly focus on the affective parameters where it evaluate the user engagement, improvement in gaining knowledge through this learning experience. Detailed methodology will be explained in Chapter 3.

### **1.5 Scopes**

This vocabulary learning is a mobile application designed that used by the children to learn Dusun language in an interactive way with the addition of augmented reality in the application. Besides, it can ease parents to educate their children just by using smartphones hence, encourage their children to learn their own mother tongue and use it in daily conversations. Moreover, by having this proposed project non- Dusun language speakers utter with reasonable accuracy materials written in Dusun Language.

### **1.6 Significance of Project**

This Dusun language vocabulary learning in augmented reality has the potential to help children learn in a creative way by introducing them with interactive visualisation with the help of sound features in each of the pictures created in this proposed project.

### **1.7 Project Schedule**

A project schedule is a project planning for the process of developing the proposed project with a calculated start and end date of every activity. This proposed project for Final Year Project (FYP) is estimated to be complete in 182 days in total. This proposed project has a continuation from FYP 1 to FYP 2 which has been counted on 12 September 2018 until 21 December 2018 and being carried on from 28 January 2019 until 21 May 2019. Refer Appendix A for the Gantt chart of project schedule for this project.

### **1.8 Project Outcome**

To develop an augmented reality of Dusun language vocabulary for children in order to encourages children to learn Dusun language.