

CHAPTER II

LITERATURE REVIEW

2.1 Literature Review

In this research system designed M-learning language learning that uses SenseCam to catch the learning students, and suggested the system called PACALL to sift photographs taken by SenseCam to help students studies a nearby object in a foreign language (Bin, et al., 2013). A system of mobile learning with the use of SMS (A short message service) to learn english has been conducted by many researchers (Chiu-Jung, 2014).

The study is done to create a medium learning blog with chemical based mobile education, and he knows feasibility media learning blog chemical based mobile education. Research methodology used a design development research and development (R & D) consisting of preface and development. Data sources from the study two lecturers' chemical. Besides it also involved assessment 13 students in response students. While subject research, this is a blog. The research obtained the percentage of feasibility average 71 %. So, that it can be concluded that media learning blog chemical mobile education developed have met the standards feasibility (Teguh & Sukarmin, 2013).

Bolanle, et al in 2013 presents a mobile-based E-learning system where students after registration, have access to various function that can be increase the process learning. A portal there are four lecturers to uploads content learning and the results of investigation students. Portal online use server apache HTTP as Web

Server, MySQL to management relational database, and PHP as programming language (Bolanle, et al., 2013).

While portability and mobility have already made these devices attractive tools, developments such as geospatial technologies, search capabilities, image and video capture, and context awareness have further increased their versatility by promoting situated learning experiences and allowing exploration within authentic settings, particularly supporting inquiry-based learning (Martin & Ertzberger, 2013).

Studies from Aziz, (2013) and Aziz, Batmaz, Stonde, & Chung (2013) showed that there are seven common gestures that are used for touch screen and interactive surfaces that are always used by children in applications, which are tap, drag-and-drop, slide, pinch, spread and rotate (Aziz, Batmaz, Stonde, & Chung (2013)). The studies also showed that children aged 6 years old can use all the gestures and have no problem in using a lot of gestures on one interface. They investigated the knowledge and skills that children have with touch screen (Ibharim, Borhan, & Maizatul H.M. Yatim) (2013). The study showed that children enjoy using touch screen technology. The study also clarifies what gestures were hard for children that should be left out, like rotating.

In table 2.1 can be seen table comparison research

Table 2. 1 Comparison research

Type	Mariam 2015	Norshahila Ibrahim, 2015	Vincent & Chao, 2013	Va Seangly, 2016
Object	Indonesian Language	English Language	Chinese Language	English Language
Hardware	Smartphone	Smartphone Tablet	<i>iPhone/iPad/iPod</i>	Smartphone
Operation System	Android	Android	IOS	Android
Content	- Text - Image - Animation	-Text -Image -Audio -Animation	- Text - Audio - Animation	- Text - Image - Animation -Audio
User	Foreign Students	Children	Foreign Students	Cambodian Students grade 12(SMA)
Tools	Eclipse and SDK	Adobe flash CS5, Adobe Photoshop CS5	Xcode Integrated Development Environment	Android Studio and SDK
Programming Language	Java	Developed of MFolktales application prototype	Objective-C	Java
Research Methodology	- Make a lesson pedagogic with content - Exercise and tests quiz and feeds back based on response.	- Make an application Animation - Exercise and test quiz and feeds back from children.	- Make a lesson pedagogic with content - Exercise and tests quiz and feeds back based on response.	- Make a lesson pedagogic with content - Exercise and tests quiz and feeds back from Cambodian students.

Table 2. 2 comparison research

Researcher	Problem	Solution	Limitation
Vassiliy Andreevich Krivoruchko (2015)	- Some Students are difficult to connect internet for learning with mobile phone. - Due to the extensive use of wireless devices, there is a new form of e-learning i.e. mobile learning. -The signal of wireless is low for mobile phone.	- The use of mobile electronic multimedia courses increases the effectiveness of foreign language teaching. - As in the absence of a real language environment. - Create opportunity for immersion in an authentic foreign language environment -Improve language competence in all kinds of speech activity.	- We should put some tools to extend signal wireless for student connecting mobile phone. - A set of wireless means and methods of their use in teaching English. - Increasing students' motivation and encouraging them.
Jaeseok Yang (2013)	- They use the application CALL to study in language teaching and learning with Computer only. - They can not use this application CALL with mobile phone. - They don't want to spend much time for opening laptop or computer. - They want us to create new application for using with mobile phone.	- Now we have one application of MALL which can use instead of CALL. - On mobile assisted language learning tends to focus on more detailed applications of newly emerging mobile technology, rather than has given a broader point focusing on types of mobile device itself. - As mobile technologies has evolved, so have their advanced applications developed for language education.	- We can create one tool which can use both computer and mobile phone. - We can create new application for supporting some devices which assisted language learning.

P. Jiranantanagorn (2013)	- Students are difficult to connect University website with mobile phone. - Some technologies is still old version. - When teacher wants to feedback some quizzes, assignments to students with mobile phone, it is difficult. - A large universities lacking technical staff to assist instructors to integrate online learning into their teaching.	- To propose mobile learning system design based on lecturers' feedback. - A review of mobile learning content authoring tools, a report of the current picture of mobile learning. - The authors have shown that service fees, mobile device prices, 3G network coverage and student and lecturer's income are barriers to the development of a mobile learning system.	- We should create own website of University which can use both mobile and computer. -Some technologies must update new version. - We should create intranet to login platform for teachers and students easy to update, learn, teach. - Find some staffs who relate to technical skill for controlling some applications.
Chiu-Jung Chen (2014)	- Most teachers and language learners feel that vocabulary learning is not an easy task. - The most learners also have trouble memorizing large amounts of vocabularies and phrases.	- They use short message service (SMS) to solve the problem. - SMS technologies were also proved by many researchers to be effective for language learning. - The reasons are that discrete SMS messages can be provided in a short manner and readily available for learners, such as in buses or waiting lines.	- There are two studies show that the proposed approach not only enhances learning attitudes, but also improves the learning achievements of the students. - We should use concept mapping group performing better than the random group.
Mariam Coulibaly (2015)	- Some foreigner students who come at Indonesia country are difficult to learning, speaking, communication, listening with Indonesian. - For expressing pronunciation, they always use wrong. -For grammar, they always confuse some	- We created new application for Indonesian grammar learning. - They can learn Indonesian grammar learning anywhere and anytime with smart phone or mobile phone without using internet. - This application using with android. Some devices use android, and	- This application should use both android and apple. - We should write some codes or find tools for using android and apple. - All words that use in application should put sound to clear expressing pronunciation as memasak--- memasak.

	structures and words. - When Indonesian people speak their language are so fast and mix with other languages as JAVA, Madura...ect.	it is easy to download. - All Indonesian grammar are collected in one application. - This application has test, quiz, score to know student's capability.	
Elizabeth Buckner (2014)	- It is difficult to incorporate advanced information and communications technologies (ICT) in classrooms. - Many ICT projects, particularly in the developing world, are limited by the lack of integration between pedagogy and technology. - SMILE is more difficult to implement in areas where rote memorization pedagogies are typical.	- SMILE successfully spurs student questioning and changes student-teacher dynamics in class. - Technology must be tied to meaningful educational content and to contextualized pedagogy. - We use mobile technology for helping as MD. - Moreover, MDs require substantially less infrastructure and electricity, offering many advantages over traditional computers. - MDs also have an advantage over computers with respect to educational content.	- The many advantages of mobile devices make them particularly appropriate to support student-centered learning. - SMILE combines a mobile-based question application for students with a management application for teachers, and thus allows students to create multiple-choice questions on mobile phones during class and share these questions with their classmates and teacher. - SMILE Ad-Hoc expands inquiry-based and multimedia-rich learning programmer in both rural and under-resourced schools.

Norshahila Ibrahim (2015)	- Mobile application does not emphasize the touch gesture that is suitable for children's age. - There is a lack of mobile learning applications with education-oriented environment for children's education.	- There is a need for research to develop a well-designed mobile application with suitable exaggeration elements together with good story plots and socio-cultural values to educate as well entertain children. - We discuss the design and development of Malay folktales mobile application called MFolktales based on a local Malay folktale story.	- MFolktales application is ready to be tested to real users and ready to be commercialized. - There are five phases involved in the development life cycle: analysis, design, development, implementation and evaluation.
Va Seangly (2016)	- Some students from Cambodia who arrived at Indonesia. They are difficult to connect with Indonesian people. - When they speak English language to Indonesian students, they can a little understand. - Now they study Indonesian language, but they are difficult to express the sound of character R. - The otherwise, Indonesian grammar complexes for learning as ter, me, mem, pen, ke-an..	- Because of some difficulties of Cambodian students, we should create new application to solving the problems. -We create one application which use Android Studio program. -Cambodian students can use the application to learn Indonesian language well because it has Indonesian grammar which is translated to Cambodian language. -This application has quizzes, tests, comments, and some example words of Indonesia.	- All words of Indonesian language have read the sound to clarify that we express Truly pronunciation. - We will research about some methods to using both android and apple store as possible. - All characters of Cambodian language have set with Khmer unicode. - For this application can install on other phones which use Android. It is not error font because the application already set Khmer unicode.

2.2 Theoretical Background

2.2.1 Understanding 'imbuhan' affix

'Imbuhan' (affix) is a form of linguistics that inside a word is directly element, who not the word and not basic. But change lexeme into a complex, it means change lexeme into more complete, has the subject, predicates, and objects. While the process own called the affixation (affixation)

'Imbuhan' (affix) is a form of (morphemes) bound used to lower. 'Imbuhan' (affix) discussed in the field of morphology. While definition morphology is part of the science of languages which speak, or study the details of the form as well as the influence change the form of a word to the sense of the word. In definition, other in say that morphology is one of the branch of science language that studies the details of the form as well as the change of function the form of that word, both function and the semantic function of grammar. Example: motorcycles consisting of two morphemes, namely morpheme a bicycle and motorcycle, each of which is word. A word formed from other words generally have additional shape on basic word. Word has three meaning as threat, serrations, and coming consists of three words and those words use with ber-, -an, -er-, and ber-an.

Change the form of a word to cause the presence of change and the sense of the word. The word a bicycle is not at a party word cycling. The bicycle is the nominal word, as a cycling among word verbal. Word the house and word the way among word nominal, as live and the walk among word verbal.

In the meaning, word a bicycle, cycling, motor, and motorcycles, all meaning are different. This is also word house, housing, house playing, houses, hospitals and words the way, walk, stroll, travel, undergo, run and road.

The difference meaning of words was not other caused by a change the form of a word. Therefore, so morphology besides its field the main investigate the details of the word, also investigating the possibility of change the and the sense of the word which arises as resulting from a change the form of a word.

Three kinds of processes morphological, namely first, relate to morpheme freely with morpheme bound called affixation. Second, repetition morpheme free called reduplication, and third, connect to morpheme freely with morpheme free called compounding. To a process which first produce words have being affixed with 'Imbuhan', the second produce words have repeated, and the third produce a compound word.

In general 'imbuhan' (an affix) known only there are four, namely prefix (a prefix), parenthetically (infix), a suffix (a suffix), prefix and a suffix (konfiks).

2.2.2 Prefix

Prefix is imbuhan located in the beginning of a word. The process prefix (a prefix this called the prefiksasi (prefixation). Based on and growth language that occurs, so prefix in indonesian language are two kinds of, namely 'imbuhan' original and 'imbuhan' absorption, better than in dialect and of a foreign language. Prefix is a

form added in front of a word or word root to change its meaning (Pikir Wisnu Wijayanto, 2015). Prefix consisting of **me, di, ke, ter, pe, per, se, ber**.

2.2.3 Suffix

A suffix is 'imbuhan' located in the end of a word. In the process of the formation of a word never have experienced change of form. The process of its formation called suffixation. Suffix is a combination of letters added to the end of a word or word root. Suffix is used either to form new words or show the function of a word (Pikir Wisnu Wijayanto, 2015). A suffix consisting of kan, an, i, nya, man, wati, wan, asi, isme, in, wi, and others.

2.2.4 Infix

Parenthetically (infix / infix imbuhan) is located inside the word. A kind of 'imbuhan' this is not productive, it means that use to limited only on certain words. So nearly did not experience the increase in general. Parenthetically located in the tribe words essentially first, that separates a consonant first with vowels the tribe of the first. The process was that word 'imbuhan' called the infixation. In the form of imbuhan parenthetically as: -er-, -el-, -em- dan -in.

2.2.5 Prefix and a suffix (konfiks / konfix)

Prefix and a suffix (konfiks / konfix an affix consisting of two elements, one in front of the basic shape and one behind the basic shape. 'Imbuhan' that could be parted as konfiks / konfix, namely me-kan, me-i, ke-an, pe-an, per-an

ber-an, and others. The process ‘imbuhan’ is in call konfiksasi (konfiksasi / konfixation).

2.2.6 Android

Google purchased Android from Android Inc. in 2013, which was established in year **2014** by Rubin and they handled software developing for mobile devices. Later, Open Handset Alliance (OHA) comprised of 79 companies together with Google developed their new mobile platform for mobile devices. This alliance was created to develop open technologies for mobile devices and easily make those applications available in the market. This new open source technology was named as Android (Conti, 2013).

Android is an open source architecture which is used for developing applications for mobile devices. Android works on Linux Kernel. It has an operating system, middleware and key applications. Android announce its code under the license of free software/open source in year 2008. Android goes up with an API (Application Programming Interface) for mobile devices. This Linux Kernel supports Java Virtual Machine (JVM) which helps Java to be the most suitable programming language for libraries, debugger and a handset emulator in Elipse IDE (Shu, Du, & Chen, 2013), (Whipple, Arensman, & Boler, 2012). The application which is developed in Android can be tested using this emulator which operates similar to a mobile phone.

Having a huge market and open source we are using android platform for the application used in this home automation system. Android is a software for

mobile devices that includes an operating system, middleware and key applications. The Android Operating System is based on Linux developed by Google. With a user interface based on direct manipulation, Android is designed primarily for touchscreen mobile devices such as smart phones and tablet computers. The Android Software Development Kit provides the tools and Application Program Interfaces which is necessary for developing applications on the Android platform using the Java programming language. The application used here is programmed in java using the Android Studio IDE (Integrated Development Environment) (Wijayanto, 2015).

2.2.7 SQLite

SQLite is an embedded a database that are very noted for combining interface SQL with the memory a very small and speed good.

SQLite is an open source database existing long enough, stable, and very famous on the small device, including android (Gargenta, 2011).

Android provide a relational database a light to any application use SQLite. Application can take advantage of it to set relational database engine to store data safely and efficiently (Meier, 2010).

In android, SQLite puts together in android runtime, so that each the android application can make database SQLite. Because SQLite uses interface SQL, is easy enough to used people with another experience based databases SQL.

There are several reasons why SQLite is totally suitable for the development of the android application, namely:

1. A database with configuration zero. It means no configuration database to climb the developers. Makes it is relatively easy used.

2. Not having server. No process of a database SQLite that runs. Basically, one set libraries provide functionality database.

3. Single-file database. This made security database directly.

4. Open source. This makes developers easy in the development of application.