

(Mobile-Assisted Language Learning) Based Using Scientific Approach to Improve Students Vocabulary

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Abstract

One of the hard sections of learning the target language for English language learners is vocabulary. Vocabulary plays a significant part in language learning because without vocabulary the students cannot master 4 skills (speaking, listening, reading, and writing). So many problems were found in learning vocabulary which influence students' vocabularies mastery and to solve it the researcher addresses the alternative strategy which can be used for teaching learning vocabulary. Based on previous studies technology gave the positive effect on learning English. Thus, making different with the previous studies, the researcher applied MALL based using scientific Approach to teaching vocabulary. The objective of the study is to find out the significant effect of MALL based using scientific Approach to improve students' vocabulary. The design of this study was quasi experiment design. The researcher chose eight grade students of SMPN 4 Babat which totally consisted of 48 students. The researcher chose the sample of the study through population sampling. The sample was divided 24 students of VIII-A as experiment group and 24 students of VIII-B as control group. The data was collected by using pre-test and post-test about active and passive vocabulary. After getting the data, the researcher analyzed the data using SPSS 16.00 and independent Sample T-test. The research finding showed that there was significant difference between experimental group and control group. It has been proven by the result of sig. (2-Tiled) is .002. the sig (2-Tiled) is lower 0.05 ($0.001 < 0.05$). So, null hypothesis (H_0) can be rejected. It means that MALL based using scientific approach significantly affects students vocabulary. The researcher concluded that MALL based using scientific approach give positive effect on students' vocabulary ability. The researcher suggests the English teacher to implement MALL based using scientific approach as an alternative strategy in teaching learning process. For the next researcher, they can implement MALL for higher level students' using other media.

Keyword: Vocabulary, MALL, WhatsApp, Scientific Approach

1. Introduction

Until now, vocabulary is the important aspect in learning English. Linse (2006) said that vocabulary knowledge plays a significant part in language learning. Language capability of learners will be repair the whole by vocabulary improvement. It is one component that connects the four language skills all together. According to Cortazzi and Jin (1996), students who study foreign languages acknowledge that vocabulary plays a significant role in foreign language learning. Burston (2012) underscored the importance of vocabulary by explaining that "without grammar very little can be conveyed, without vocabulary nothing at all can be conveyed." As the basis of language rather than grammar, vocabulary is more important (Ghadessy, 1998; quoted in Sripramong 2004) very little can be delivered without grammar; the more sentences they can make, the more vocabulary they have. If not, language learning will not occur. So it is known that the most common element in sentences is "Word" Because language consists of several sets of words that have their own meaning.



Vocabulary learning had several problems in the past decade according to Rahmatillah (2017: 69). Students' difficulties in learning vocabulary are caused by several factors (1) the oral form in English is different from the written form (2) very large the number of words students must learn, (3) information about words has a limited source of information, (4) knowing word implicate many more than knowing its definition in dictionary, (5) understanding the grammar of words that are still lacking, (6) the lack of sound similarity causes the erroneous pronunciation between the original language of the student and English. Traditional methods such as exercise have made students tired of learning vocabularies, writing written words on paper or listening to teacher explanations passively.

There are many problems in the class about vocabulary at the junior high school level. Vocabulary is the most important aspect to understand English because every skill in English definitely requires a vocabulary. Based on the first observation at public junior high school 4 Babat the problem of vocabulary especially in eight grade are student have limited time, inability to listen, unable to distinguish the correct pronunciation and writing, teaching in the classroom is too boring because the teacher using speech method, less interaction between teacher and students .

In current year technology has a very important role. This also affects the education sector. Technology is very helpful to facilitate the learning process, both at the elementary level, junior high school and high school. Technology has its own role. The rapid advancement of information and communication technologies in the last years has created new opportunities for education (Reynolds & Anderson, 2015).

Thornton and Houser have explored the effectiveness of learning via mobile phone on Japanese college students' vocabulary gains (Thornton & Houser 2003, 2004, 2005). In their 2005 study, participants who learned vocabulary through internet e-mails via mobile phone ($n = 13$) had significantly more vocabulary gains than those who learned through the web via pc ($n = 13$). The results of the second experiment showed that another mobile phone group ($n = 25$) gained significantly more vocabulary than the group using paper materials ($n = 43$). Thornton and Houser concluded that the regular messages sent by mobile phone could generate the spacing effect (c.f. Dempster 1987; Greene 1989), which facilitated vocabulary retrieval.

According to katemba (2019) his study intended to find the difference in vocabulary enhancement between students who were taught through call (computer-assisted language learning) and those taught through mall (mobile-assisted language learning) among grade 10 efl (English as a foreign language) students in Bandung, Indonesia. The result of this study is findings revealed that there was no significant difference in vocabulary enhancement between students using call and those using mall. The post-test results showed significant improvement in both groups, as both methods increased the students' vocabulary. Therefore, it can be concluded that call and mall are both effective methods for teaching vocabulary.

Base on Thornton and Hauser (2005) they used MALL to improve their students' vocabulary, they emailed their students three times a day and their research proved that the mall can improve students' vocabulary skills. Besides Derakhshan and kaivanpanah (2011) have also proven that MALL can develop the knowledge of junior high school students, but they are not individually but use groups for communication. In other hand katemba (2019) in his research said that the mall can improve English vocabulary. To improve that he texted his students. In one study, Lu (2008) had students learn two sets of English vocabulary words either through mobile phones or by a paper-based format. Students who learned via SMS were found to understand more words than students presented with the paper-based tasks.

Related to the use of mobile technology, Whatsapp has been chosen to be one of the most popular among the researchers to investigate the effect of using it. Whatsapp is preferably used for many reasons. Ashiyani & Salehi (2016) also stated that Whatsapp is a tool that can be used for different educational purposes. This is because Whatsapp sends message through Internet connection that can be in the form of text, audio files, pictures, videos as well as one's location. Many studies found out new ideas on language learning related to the use of Whatsapp. Hamad (2017) claims that Whatsapp can be a solution to the problem of teaching the meaningful and contextualized interaction in English teaching.

To espouse this research, in the implementation of MALL base the junior high school 4 Babat curriculum to improving student ability of vocabulary at eight grade, scientific approach is one of exact strategy that can use. The 2013 curriculum provides a new approach in teaching process as a demand in 21st century. Learning by using scientific method or scientific approach is capable of creating an atmosphere of active learning, and can make students more creative and innovative thinking in the face of the material being taught (Setiawan & Wilujeng 2016; Wati Bharati &

Hartono 2014). Nagl, Obadovic & Segedinac (2012), Susilo, Siswandari & Bandi (2016) and Sodik & Wijaya (2017) also revealed the learning scientific methods can make the monotonous atmosphere become interesting.

From the problem and explanation above, the researcher decides to carry out the study entitled “MALL (Mobile Assisted Language Learning) based scientific approach to improve student’s vocabulary”.

2.Review of Literature

Vocabulary

Definition of Vocabulary

According to Huckinand Coady (1998) who quote from Zimmerman “the center of language is vocabulary which is typical language learning and Furthermore”. Diamond and Gutlohn (2006) in www.readingrockets.org state that vocabulary is the meaning of words and knowledge of words ”.

Kamil and Hebert (2005: 3) defines vocabulary is learning about the meaning of words. The term vocabulary has various meanings. For example, some teachers take the term to avoid sight-word vocabulary, refer to students' prompt recognition of words in print; other teachers refer to their words significance vocabularies. As yet other teachers use the terms to imply listening vocabularies, or students' know of words that they hear in the spoken language. Value teachers use the expression academic vocabulary to mention to content-specific words. Within this section, we use the term vocabulary to refer to students' understanding of verbal and print words. Vocabularies incorporate conceptual knowledge of words that go well on the far side of a simple dictionary definition. Students' vocabulary knowledge is a process that happens over time as they relate to other words, and use the word consensus in the context of the sentence (Snow, Burn, & Burns, 2005 & Griffin s, 2005).

Kind of Vocabulary

Vocabulary is dividable into two kind by several experts, passive and active vocabulary. These 2 types of vocabulary are distinguished by Harmer (1991). Passive vocabulary is when students meet these words they will immediately understand and will recognize the vocabulary. What they might not say. While active vocabulary is a type of vocabulary taught by the teacher to students and students are expected to use it properly and correctly.

The importance of vocabulary

Vocabulary learning is very important for people who learn English both as foreign language and as second language. Tozcu and Coady (2004: 473) point out learning vocabulary is an important aspect of language two and foreign language acquisition and academic achievement and is vital to reading comprehension and proficiency, to which it is closely linked. Moreover, Heubener (1965: 88) states that learning of vocabulary is based on the formation of specific habits. Since this involves the association of symbols and their meaning, it is clear that an enrichment of the meaning of the word is as important as its frequent repetition.

Teaching vocabulary

Teaching vocabulary is a pivotal aspect in learning a language as languages are based on words (Alqahtani, 2015). It is nearly unthinkable to learn a language without words; indeed communication among human beings based on words. Recent research show that Teaching vocabulary may be problematical because many teachers are not self-assured about the best praxis in vocabulary teaching and at times do not know where to commence to establish an instructional pressure on word learning (Blachowicz&Berne, 2008). They have problems of how to teach students in sequence to gain satisfactory outcome. The teachers must be anxious that teaching vocabulary is something fresh and distinct from student’s native language. The teacher has to organize and discovery out the suitable techniques, which will be execute to the students.

The understanding of MALL

Definitions of MALL are offered in simpler forms such as by Sharples (2007, p. 24) who characterized MALL as the use of personal, portable devices that enable new ways of learning, emphasizing continuity or spontaneity of access and interaction across different contexts of use. By O’Malley et al. (2003) who described MALL as any sort of learning that happens when the learner is not at a fixed, predetermined location, or learning that happens when the learner takes advantage of the learning opportunities offered by mobile technologies. Kukulska-Hulme (2013, p. 3701) defined MALL as the use of “mobile technologies in language learning, especially in situations where device portability offers specific advantages.

The potential of mobile technology to assist language learning was discussed in numerous studies (Huang & Chiu, 2014). Kukulska-Hulme and Shield (2008) stated that m-learning (mobile learning) can offer a language learning experience where students are able to enjoy learning anytime and anywhere



WhatsApp

Hamad (2017) said that WhatsApp is the most common chatting application to use among the students, students do not need to have computer, it is attainable and it does not cost much. Moreover, Ashiyan & Salehi (2016) also stated that WhatsApp is a tool that can be used for different educational purposes. This is because WhatsApp sends message through Internet connection that can be in the form of text, audio files, pictures, videos as well as one's location. Many studies found out new ideas on language learning related to the use of Whatsapp. Hamad (2017) claims that WhatsApp can be a solution to the problem of teaching the meaningful and contextualized interaction in English teaching.

Scientific Approach

Scientific approach is defined as the process of finding out information in science, which involves testing the ideas by performing experiments and making decisions based on the result of analysis (Longman, 2014). It means that scientific approach is a body of techniques for investigating phenomena, acquiring new knowledge, and correcting and integrating previous knowledge. while Hidayah (2013) mentioned that the learning with scientific approach is a scientific and inquiry approach, where students act directly either individually or in groups to explore the concept and principles during the learning activities and the teacher's task is to direct the learning process performed by the student and provide any corrections to the concepts and principles which the students have been obtained.

Kemdikbud (2013) and Hosnan (2014) state that there are five steps of applying scientific approach in teaching learning process, they are observing, questioning, experimenting, associating, and communicating.

3. Research Method

Experimental research is the design of this study. Miller (1984:4) explained that experimental design is a process to collect the research data to know the effect of variable and the other variable. Quasi experimental research design is chosen for this study concerning with the purpose of the study. Quasi experimental research is the research which takes from two different classes in the same grades which has similarity. The purpose of this study is to examine the MALL (mobile-assisted language learning) based scientific approach to improve students' vocabulary for the eighth grade at Public Junior High School 4 Babat. This study uses quasi experiment to predict the cause and effect of the relationship between dependent and independent variable.

In this study, there are two variables. They are student's vocabulary enhancement as dependent variable, MALL (mobile-assisted language learning) based scientific approach as independent variables. There will be two groups; those are experimental group which will be given the treatment by the teacher's media that is "MALL (mobile-assisted language learning)" and scientific approach strategy and control group which will be given a treatment by using "scientific approach without MALL". The researcher uses technique of cluster sampling because the school has been determining the classification of the class. In the eighth grade of public Junior High School 4 Babat, the number of student is 24 students of 8A as an experiment group and 24 students of 8B as a control group so the total number of group is 48 students, they are male and female students as the participant.

The researcher gives pre-test and post-test to collect the data in order to find out the result between the students of experimental group and control group in pre-test and post-test and also to see the effect of using MALL (mobile-assisted language learning) based scientific approach to improve students vocabulary for the eighth grade at Public Junior High School 4 Babat. The instrument is vocabulary test that adopt from Teresa López-Mezquita Molina Granada (2005) and Meara (1996). There are 20 questions for active vocabulary and 20 question for passive vocabulary.

The description of procedure implementation is as follow:

Stage	MALL (Mobile assisted language learning) based Scientific Approach	Scientific Approach
Introduction	<ul style="list-style-type: none"> ➤ The teacher explained the use of MALL (Mobile assisted language learning) based Scientific Approach ➤ Pre test 	<ul style="list-style-type: none"> ➤ The teacher gave explanation the purpose of she come to their class ➤ Pre test
Learning material		

Implementation
(Week 1-4)

- The researcher gave videos were introduce to the students about the material. They consisted of
 1. Invitation
 2. Giving and responding to instructions
 3. Giving and responding to prohibition
 4. Greeting card

Out class (MALL) :

Observing

- Each week a day before the meeting the teacher sent the video about the material in the WA group
- The students were listening and watching the video
- The students understood the video

Questioning

- The teacher gave opportunity to the students to discuss and ask questions about the video.
- The teacher gave 3 kind of questions There were : synonyms, antonyms and fill in the blank questions

Experimenting

- The students answered the questions and submit their individual task to the teacher through WhatsApp
- The teacher corrected the task

In class:

Associating

- The teacher and the students discussed about the answer of questions

Communicating

- The teacher gave feedback to the students by asking they to interpret, read, pronounce and write the vocabulary task in from of the class

Post test

- The researcher gave videos were introduce to the students about the material. They consisted of
 1. Invitation
 2. Giving and responding to prohibition
 3. Giving and responding to prohibition
 4. Greeting card

Out class : -

In class :

Observing

- Each week in the class the teacher showed the video about the material
- The student listening and watching the video
- The students understood the video

Questioning

- The teacher gave opportunity to the students to discuss and ask questions about the video.
- The teacher gave 3 kind of questions There were : synonyms, antonyms and fill in the blank questions

Experimenting

- The students answered the questions and submit their task

Associating

- The teacher and the students discussed about the answer of questions

Communicating

- The teacher gave feedback to the students by asking they to interpret, read, pronounce and write the vocabulary task in from of the class

Post test

Assessment



Table (a) the procedure of implementation

Results and Discussions

The researcher focuses on the score of pretest and post-test analyze for both of experimental group and control group. The researcher also focused on hypothesis testing analysis. The result of students' score was analyzed by researcher. The pre-test score of experimental and control group was presented in the appendix. The mean of the pre-test of the experiment group was 50.6250 and the mean of pre-test score of the control group was 50.4167.

Before conducting the treatment, the researcher analyzed the normality to know whether the group had normal distribution or not and analyzed the homogeneity to know whether both of the classes were equal or not. The researcher analyzed the normality and homogeneity by using SPSS 16.0. From the pre-test score, the result showed Shapiro-Wilk sample test for equality of variances showed that the Sig. in experiment group is 0.054 and for control group is 0.070, which mean that the data was normal because the sig. was higher than the level of significance. So two population of variance were normal. And $F = 0.252$ and the Sig. = 0.618 which mean that there was no different variance between experiment group and control group because the Sig. was higher than the level of significant 0.618 > 0.05. It mean the two population of variance were homogenous or equal.

An analysis of post-test score was done to answer the research problem in this study in order to see knew the significant different related to the implementation of MALL based using Scientific Approach without using it for both of experimental group and control group. From the post-test analysis, the mean of post-test in experimental group was 74.7917 and control group was 70.1042. Then the researcher analyzed the hypothesis testing and the result showed that the value of Sig. (2Tailed) was 0.02 in critical value for 5 % level.

We know that MALL is one of made which use technology to learning process, and scientific approach is the best strategy that use in k13 curriculum. In MALL based using scientific approach we try to apply process of teaching learning vocabulary in the eighth grade at Junior High School..

MALL has been shown to be feasible for language learning. In most of the studies, in the past two decades on MALL, the vocabulary learning skill has been the target skill. Using mobile technology in this way not only takes instruction outside of the classroom, but it also brings language learning out into the real world. For this statement mall is effective to learning process especially in vocabulary ability. So by MALL base scientific approach is the best way to improving students vocabulary. The students have opportunity to explore their idea long and free time and enjoy in learning process because doing not only in the classroom but also in the out class.

The purpose of the study to find out whether MALL based using scientific approach is effective in student vocabulary ability of SMPN 4 Babat. The study is also intended to know to what extent MALL based using scientific approach influence student vocabulary ability. The students who were taught by MALL based using scientific approach proved to have significant effect in vocabulary ability. In other word, MALL based using scientific approach can improve students vocabulary.

Based on the study that has been conducted by the writer, it showed that teaching vocabulary made the teaching and learning process become more enjoyable and also gave significant effect to the students towards students' vocabulary and it is make the students were very active, interest and the do not shy and silent anymore. The writer believed that MALL based using scientific approach is more effective to improving students vocabulary. Based on the data that have been analyzed above, it showed that the mean score of both classes was increased. From the result computation, it is concluded that the students get good achievement in master vocabulary after being taught by MALL based using scientific approach. Referring to the description above, it can be concluded that in this study, MALL based using scientific approach strategy to teaching vocabulary is effective because they can know many new vocabulary. Practically the theory is accepted and it can improve the students' vocabulary score at SMPN 4 Babat.

5. Conclusion and Suggestion



Based on the result of the study, the researcher agrees that the theory of MALL (Mobile Assisted Language Learning) based Scientific Approach in Eight grade levels. It can be applied for ability of vocabulary. Here, the researcher experimented MALL based using Scientific Approach in improving student's vocabulary and the result showed that the teaching vocabulary by MALL based using Scientific Approach has a positive effect in vocabulary ability than by using scientific Approach without MALL. For experimental class, the mean increased from 50.6250 become 74.7917 while the control group from 50.4167 become 70.1042. The result of pre-test and post-test that there is enough evidence to conclude that MALL based using Scientific Approach can be apply in improving students vocabulary. The implementation of MALL based using Scientific Approach can make the students enjoy and enthusiastic. Additionally, MALL based using Scientific Approach make easy the students to improving their vocabulary. This method also help the students to focus on the topic. The researcher suggest for the teacher, they can apply MALL based using Scientific Approach in teaching vocabulary as an alternative method to avoid monotonous activities in teaching learning. Before the outclass start the teacher must explain more detail in the class the procedure to apply MALL based using scientific Approach. The teacher should provide an interesting material and also provide another media like anime video or funny video. Then create teaching process more enjoyable, focus because have long time to discuss. Then, the teacher also should guide the students to be active in learning vocabulary.

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