

MOBILE LEARNING VOCAPP: (VOCABULARY APPLICATION) FOR ENGLISH VOCABULARY LEARNING

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Abstract: The background of this research is to investigate the urgency of vocabulary as the most important aspect in language. In this research, vocabulary learning will be assisted by using an android application, namely VocApp; (Vocabulary Application). The purpose of this research and development is to (1) identify the needs of vocabulary learning media according to teachers and students, (2) know the principles of developing learning media based on theoretical studies, identify needs and analyze existing learning media, (3) design VocApp learning media based on the results of the analysis of the existing media, (4) test the VocApp learning media (5) Revise the features of the application according to the evaluation of the trial, (6) Disseminate and implement applications for vocabulary learning in the classroom. The method used is research and development. The steps in the research are Needs analysis, Prototyping, Revision Prototype, Developing, Testing, and Deployment. The result indicated there is a significant improvement of students' skill in vocabulary building by means of VocApp application. This case can be seen from the results of calculations using statistical tools, it is known that t-count is 0.03 which means <0.05 . From the results of t-count, it can be concluded that there is a significant difference.

Keywords: *vocabulary application; mobile learning; English vocabulary.*

INTRODUCTION

In many countries, learning English vocabulary via mobile phones can improve language competence (Wu, 2015). More than 200 mobile apps on Google Play for learning English as a foreign language (EFL) vocabulary, both contextually and literally (Özgür ÇELİK, 2018). Samsi (2016) stated, in Indonesia, English language is a foreign language and it is taught in every Education Foundation. English language also is as a compulsory subject in National Education Curriculum. We can choose which one we use to support understanding the language competence. Atay & Ozbulgan state that many researchers and practitioners conduct testing, developing, or comparing factors and means of learning vocabulary and it implied those factors can enhance vocabulary learning efficiency (Tsai &

Tsai, 2018). Language learners can understand an utterance of speakers when they can develop an understanding the meaning of vocabulary either in text or in context. Vocabulary is essential because vocabulary competency determines students' capacity to learn English, particularly their ability to comprehend the subject (Kacatl & Klimova, 2019; Sari & Aminatun, 2021). The understanding of the utterance relates with the grammatical roles of those words from the syntactic structure of the sentence (Rebuschat et al., 2021).

Tirtayani, Marga, Lestari (2017) have opinion that in the globalization era, teaching and learning process should be created as technology developing runs. To get optimal benefits from technology, teachers must be able to mix and mix the technology with strategic steps so that the goals to

be achieved can be achieved properly (Dewi, Halimah, & Kurniawati, 2021). One of the technology based teaching and learning applications is application in mobile phones. The use of technology in education will resolve the constraints of space and time, disseminate information more easily and efficiently, and ensure that the communication delivered is in accordance with the learning objectives (Halimah, Nurviyani, Saepulah, Helimie, & Wandawati, 2022). Khaerunnisa & Izzah (2021) explained that digital era has led us to transform the educational habit, from analog to digital. The indicators of digital development are many applications easily found on mobile device. Albantani and Madkur in Khaerunnisa & Izzah (2021), one of the mobile device is mobile learning. According to Kukulska-Hulme & shield mobile learning is portable device for learning, anywhere and anytime (Pratiwi, Sudirman, Nariyati, 2020), besides that Matra(2020) defined that Mobile learning is a simple media that help English language learners learn more about language. Some features giving some information how to know more knowledge independently. Deris & Shukor (2019) mentioned Mobile learning in language learning is a simple device for supporting learners study English language. The application can be easily downloaded by learners and used as their needs. Ambara (2016) also believed that mobile learning can overcome for the language learners boring in learning in the class. They can develop their competence and skill by using simple media. This media supports the teaching and learning needs in this era. Richards and Renandya in Aisyah (2017) stated that the vocabulary plays the crucial thing in students' foreign language learning and language proficiency (learning to speak, listen, read, and write). Mastering vocabularies will support the students' mastery in four English competencies (listening, speaking, reading, and writing). Devi (2012) suggested to reach English vocabulary mastering is every time practice. The English learners should give many occasion and stimulation to practice their new vocabularies either in English text or English context. They can practice and understand the use of many words in order to enrich their vocabulary.

Nuralisah & Kareviati (2020) explained there are some problems in the teaching-learning process, especially in vocabulary learning obstacles experienced by students include a low

understanding of English, a lack of motivation to learn vocabulary, and difficulty in translating English sentences. Moreover, Setiawan & Wiedarti (2020) argued that students have to master English vocabulary first before they produce it through speaking or writing. Vocabulary is the basis of acquiring a second language (Afzal, 2019). In other words, the first skill that a language learner must acquire in order to learn a language, particularly English, is vocabulary (L, Sadapotto, & Anwar, 2022). Then, teachers have an important role to introduce them to a large amount of unknown vocabulary. Grogan in Setiawan & Wiedarti (2020) However, the new vocabulary is successfully introduced if they are not interested to learn them. It is the teacher's responsibility to use effective media that can make the interest in learning (Santosa & Andriyadi, 2019). Furthermore, learning media is an important foundation that functions as a complement and a vital part of the success of the learning process (Wulandari, Widyaningrum, & Arini, 2021). Mastering vocabulary becomes a problem in which motivated students will try to find a solution for it while unmotivated students do not even want to learn vocabulary.

The students of university can be independent to learn English. The basic elements of language come from words. These words have a great function in communication between individuals with one another (Poláková & Klímová, 2020). Wilkins in Polakova and Climova (2020) argued that without words there is no possible expression that can be conveyed. Conderman (2020) also stated that vocabulary affects students' participation in communication in class. Likewise in foreign language learning and has an important role Cortazzi and Jin in Hao, Lee, & Chen (2019). Vocabulary building give language learners understand more about the text. So when they are reading, they will understand what the text tells about. Also, developing vocabulary makes help them to know more about the context of language. Without knowing and understanding the vocabularies, it's not sure the language learners can express everything in English language either in writing or speaking.

In the context of technological development, learning English with all competencies is developed with simpler learning-based technology using android or what is called mobile learning or m-learning. Chinnery (2006) stated that Mobile

learning, or m-learning, is a burgeoning subdivision of the e-learning movement, further evidenced by European initiatives such as m-learning and MobiLear. Mobile learning is a simple tool for supporting vocabulary learning. It can be used anywhere and anytime. A simple application built in the android or cell phones, the users can learn the vocabulary either in specific or general terminology of many cases (Alzahrani, 2019). M-learning has a positive effect on students' independence in learning and creativity (Lu, 2008), learning without being limited by space and time, building their own interests and increasing independent learning motivation (Hao, Lee, & Chen, 2019). Understanding of vocabulary from simple to complex terminology has a positive effect on students' understanding in learning English. So that learning will show success if the more complex vocabulary can be understood by students (Mosenthal, Pearson, Barr, 2000). Nugiyantoro (2012) also explained that words are the core property of language (Cahyaningtyas & Hakim, 2014), so that vocabulary plays an important role in building language understanding.

In the context of learning English vocabulary, the choice of vocabulary learning strategies undertaken by students in order to master and practice the vocabulary they are learning will determine the success of their English vocabulary mastery which in the end has a lot of impact on increasing their communication skills (Basri, 2005). As mentioned by Surmanov and Azimova (2020), vocabulary acquisition was considered as the most influential factor in language learning. Vocabulary can also be interpreted as a branch of knowledge that is known by individuals. Because words do not just speak meaning but more than that is how vocabulary can be constructed in a language (Basri, 2005). So, Quirk and Stein in Solihati (2016) stated that vocabulary is an essential requirement in expressing ideas in communication. Vocabulary knowledge is fundamental to effective communication, especially among university students. This is especially true when English as Second Language Learners (ESL) are often required to read academic books written in English, and to express themselves verbally in the language (e.g., giving presentation) or when writing (e.g., assignments) (Yunus, Mohamad, & Waelateh, 2016).

Setya and Kurniasari (2014) said that one of the

problems in learning English language is vocabulary. Without learning the vocabulary, it is difficult to attain any language proficiency (Afzal, 2019). Some studies found that many students have graduated from the school with minimum ability in using English (Machfudi & Afidah, 2022). A study by Salam and Nurnisa (2021) claimed that the factor is the lack of vocabulary. The students feel bored to memorize the strange or new vocabularies. The learning should be fun in many supporting media. Based on Sari, Suryanti, & Manurung (2017), a good learning media must support the achievement of maximum learning. Meanwhile, Sari & Wardani (2019) said that the important thing is creating the suitable vocabulary instruction in for English language learners. Technology based teaching can be as alternative teaching and learning in making teaching and learning process happy. That's way, Contextual learning is an appropriate method for vocabulary instruction. Either appropriate learning method or learning media will support the successful vocabulary teaching (Khusniyah & Hakim, 2019). And also, learning media consists of visual, audio and video (Indrasari, Novita, & Megawati, 2018). Nagy in Enayati & Gilakjani (2020) mentioned that English learner needs the current method to enrich English vocabularies. Chalk and blackboard are unsuitable media for learners today. The teachers should create a suitable media for this generation. Based on Hasnida in F, Supriyono, & Aini (2022), the use of learning media provides benefits, namely (1) as a tool of helping to create an effective learning situation (2) becoming a component in order to create a situation expected learning (3) accelerate the learning process, students can grasp goals more easily and quickly (4) improve the quality of the learning process (5) can lay concrete foundations for thinking. The same opinion, Tabatabaei in Enayati & Gilakjani (2020) stated technology application is urgently required for vocabulary learning. According to Chiu in Pratiwi et al. (2020), improving students' language skills can be undertaken by means of the use of mobile device. Also, Godwin-Jones; Heil; Stanley in Abdullah (2020) stated that mobile device can be as a variety of application and program for supporting students to learn English skills. Thornbury in Hidayat (2016) declared the teachers must create various teaching strategy and need the correctness of teaching methods. Novita in Indrasari et al. (2018)

stated that a good learner is when they have many new vocabularies in every academic dialogue and discussion and social media communication. So, vocabulary supports all language process in all competences. Schmitt in Fidyati (2018) said vocabulary as the basis of a language. It leads the learners to understand the text and speak English well.

Widyastuti & Kusumadewi (2018) argued that in current developments, all learning processes experience innovations that are driven by IT devices. This is done to support learning to be more effective, efficient, and creative. Qoyyimah & Adi (2017) stated technological developments that are increasingly sophisticated are making learning models that experience simplification, one of which is the emergence of mobile learning or learning applications that are easily accessible via gadgets or devices both by teachers and students. Yuliawati (2018) declared practical applications that are commonly found in the Playstore related to learning English include; Learn to Speak with Busuu“, Hello English“, VoLT“, Learn English Daily“, Learn English Grammar Quickly“, Learn English Conversation – Learning & Speaking“, Learn English Audio and Video“, English Conversation Practice“, Memrise“, Duolingo“, Rosetta Stone“, Voxy“, My Word Book“, and Learn English Kids: While the applications regarding vocabulary learning are mobile applications, eVoc, computer applications, Education applications, Duolingo, mobile applications, Android-based game, Mobile-Assisted Language Learning (MALL), the application has features in improving vocabulary understanding.

From some of the research and facts above, researchers develop vocabulary applications that are tailored to the needs of students at the intermediate level. This vocabulary understanding is made using an application with easy-to-understand features including tracking students' initial vocabulary knowledge, vocabulary learning and evaluation. This application is called VocApp (Vocabulary Application). The state of the art in this study is indicated by the enrichment of English vocabulary learning applications. This vocabulary application or VocApp was created and developed according to the needs of students in learning English vocabulary. Huckin & Coady in Edturk (2016) suggested that vocabulary determines the success of language learners in practicing their language skills.

One of the problems in teaching vocabulary is the limited time for learning in class. So it is difficult to understand a lot of vocabulary with the limited time available (Cunningham, 2005). Because Schmitt said that the vocabulary used was in accordance with the required theme (Ertürk, 2016).

For this reason, vocabulary learning requires the right learning strategy to support the right vocabulary learning style. As Rahmah, Wibowo, & Zarkasih (2021) stated that in order to enhance students' vocabulary mastery in the learning process, the instructor should give an engaging medium and generate pleasant learning. Moreover, 21st century teachers should have competence in using various technology products as media to deliver educational services (Muchtar, Nasrah, & Ilham, 2021; Nurmala, Triwoelandari, & Fahri, 2021). Researchers have the perception that learning English vocabulary is currently important to be integrated with applications that can support learning. So, it is important to learn English vocabulary with the aid of an application. In addition, technology can also answer the expectations of language learners in the context of learning vocabulary. Technology in learning has had a positive impact on improving the quality of language learning (Tosun, 2015). This learning technology is used online with the learning features needed according to the needs of the learner (Köse, Yimen, & Mede, 2016). Brown (2012) mentioned that pre- and post-vocabulary tests give the information for us about the improvement of one's vocabulary knowledge in breadth and depth. From the experts' explanation above, there is not mentioned yet about the specific topic of vocabulary in junior high school level. The specific topic of the subject is embedded in android application. This application becomes the alternative to support the vocabulary learning.

METHOD

This study used the Research and Development method. R&D or Research and Development were research that was based on continuous product testing. The product in this research is an android application that can be used in learning English vocabulary.

The steps in the research were needed analysis, Prototyping, Revision *Prototype*, *Depeloving*, *Testing*, and *Deployment*.

The Participants of this research were Class

VIII SMP Negeri I Kuningan with a total of 29 students. The ease and practicality of using the application makes the VocApp application can be used anytime and anywhere by learners. The RnD model used the Software Development Life Cycle with a prototyping model, namely software development that first describes the design in the form of a prototype as a functional requirement that will be approved by the user or users.

Data collection techniques used pre-test and post-test. A pre-test was conducted to measure the students' initial abilities, with 25 questions. Then the learning was carried out with material English using the mobile learning as a media for supporting VocApp application. After the learning was finished, a post-test was conducted to measure student learning outcomes. And data analysis techniques used description and comparison of the two test results was done to determine the extent of the mobile learning method with the media VocApp application can improve English learning outcomes. Comparisons were made statistically, with the t-test.

RESULT AND DISCUSSION

The application is tested by using it and ensuring all functions run, while the application results are described as follows:

Table 1. *Application testing*

No.	Function	Test Results
1	Application loads the page completely	Yes/No
2	Applications can login using a mobile number	Yes/No
3	Application displays a list of vocabulary categories	Yes/No
4	Application displays vocabulary list	Yes/No
5	Applications displaying vocabulary search results	Yes/No
6	The application displays a list of quizzes that can be taken	Yes/No
7	Users can take quizzes smoothly and get feedback	Yes/No

The application can be accessed through a browser with the address <http://myvocapps.com> or search for it through the Google search engine with the keyword Vocapp Vocabulary Application. After the learning was completed, a post-test was conducted to measure student learning outcomes.

The results of the two tests are shown in table 2.

Table 2. *Pre-test and post-test results*

Variables	Pre-Test	Post-Test
Minimum	20.00	28.00
Maximum	88.00	92.00
The Mean	64.40	69.90
Median	68	72
Mode	80	88
Standard Deviation	18.62	14.72

Pre-test results

The results of the pre-test showed the lowest score of students was 20, the highest score was 92, with an average of 64.40, standard deviation of 18.62. The distribution of values is shown in table 3.

Table 3. *Distribution of pre-test score*

Interval Value	Frequency	Percentage
17-29	1	3%
30-42	2	7%
43-55	7	24%
56-68	5	17%
70-82	10	34%
83-95	4	14%

Pre-test values are widely distributed in the 70-82 intervals as much as 34%, which shows the values are normally distributed in the intermediate interval. The results of the post-test showed that the students' lowest score was 28, the highest score was 88, with an average of 69.90, standard deviation of 14.72. The distribution of values is shown in table 4.

Table 4. *Distribution of post-test score*

Interval Value	Frequency	Percentage
17-29	1	3%
30-42	0	0%
43-55	2	7%
56-68	10	34%
70-82	9	31%
83-95	6	21%

Post-test results

The post-test scores were widely distributed at intervals of 56-68 as much as 34%, which showed that the values were normally distributed in the upper-middle interval. The comparison of the two test results was carried out to determine the extent to which the mobile learning method with the VocApp application media was able to improve the learning outcomes of learning English. The comparison was done statistically, with the t test. The calculation results stated that there was a

significant difference if t-count 0.05 (at a significant level of 5% or sig 2-tailed) and it was stated that there was no significant difference if t-count 0.05 (at a significant level of 5% or sig 2-tailed). From the results of calculations using statistical tools, it is known that t-count is 0.03 which means <0.05 . From the results of t-count, it can be concluded that there is a significant difference.

The RnD model used the Software Development Life Cycle with a prototyping model, namely software development that first describes the design in the form of a prototype as a functional requirement that will be approved by the user or users. The flow is as described in Figure 1.

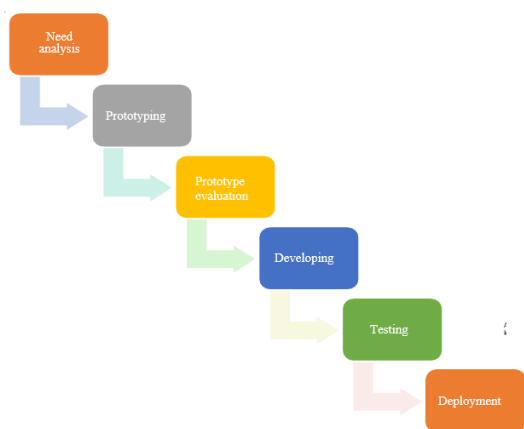


Figure 1. *Research flow*

Needs analysis

Needs analysis has been carried out on several people related to difficulties in learning English. From the results of the analysis, it was found that students had difficulty in finding vocabulary in English so that they had difficulty composing sentences. Vocabulary is the simplest construct in a sentence. So, from these difficulties, it is necessary to have a tool in learning vocabulary. The tools needed are in the form of software or applications, because they are easy to use and rich in features.

Navigation. (1) Home, which is the main page of the application; (2) Competition, namely competing with fellow users regarding the number of vocabularies that have been mastered; (3) Other applications, namely the application of master tenses as a product of previous research; (4) User profiles, namely biodata and application user accounts.

Learn/practice. For vocabulary learning, images, text and audio are available with the main themes of

daily, education, culture, sport, math, early childhood, and computers.

Training. The form of the test is multiple choice, type this, fill the blank, true and false, picture questions are answered with text, audio questions are answered with text, audio questions are answered with pictures, text questions are answered with pictures, text questions are answered with audio, picture questions are answered with audio.

Review. Displays list of memorized vocabulary.

Discover. Find vocabulary quickly based on search.

Knowledge map. The total number of words that have been memorized, the number of words that have been memorized per day, the level and rewards given are based on the number of memorization.

Gallery. The gallery contains pictures accompanied by explanations.

Prototyping. From the results of the needs analysis, a prototype has been made as an initial description of the application design.

Prototyping evaluation. Applications that have been made will then be validated by material experts, media experts and potential users in this case student to get feedback. The feedback obtained is used to revise the application design. This is done repeatedly until no more feedback is obtained so that the application design is declared to be final.

Developing. This stage is writing code using a programming language to create applications. The programming languages used are HTML, CSS, JavaScript, PHP and supported by a MySQL database, because the application will be based on a Web Application.

Testing. After the application is made at the developing stage, then testing is carried out at the system level, then the level of small-scale users and large-scale users. At the system level, testing is carried out by testing the functionality of whether the application is functioning properly. Furthermore, at the small-scale testing stage, it is done by asking several users to use the application to be asked for feedback, or in other words as a user acceptance test. Furthermore, in the large-scale testing stage, it is carried out using the application as an English learning aid in the experimental class.

Deployment. If the test results state that the application is complete, the last step is to publish the application to the Play Store so that it can be accessed by everyone. After application is testing

and running well, as for the application result and described as follows:

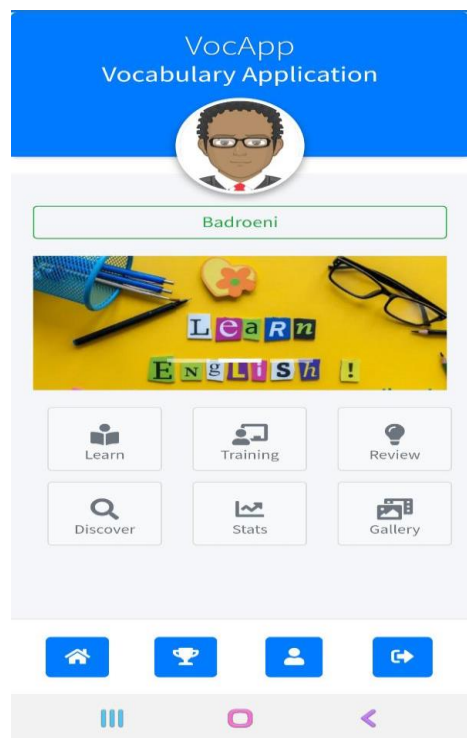


Figure 2. Application development results

CONCLUSION

There are two prominent elements in this research. Firstly, from the pre-test and post-test given to the students, indicates the significant difference. The difference between pre-test and post-test is the improvement of students' vocabulary building. The data tells that the results of the pre-test showed the lowest score of students was 20 and in the post-test was 28, the highest score in pre-test was 88 and in the post-test was 92. After the comparison was conducted statistically, with the t test, there was a significant difference if t-count 0.05 (at a significant level of 5% or sig 2-tailed) and it was stated that there was no significant difference if t-count 0.05 (at a significant level of 5% or sig 2-tailed). From the results of calculations using statistical tools, it is known that t-count is 0.03 which means <0.05 . From the results of t-count, it can be concluded that there is a significant difference. Secondly, vocabulary application has supported to the students' vocabulary building. The application helps the students learn independently. They can improve new vocabularies by means of English communication practice.

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