THE EFFECTIVENESS OF LIMA SAHABAT TO ENHANCE THE STUDENTS’ VOCABULARY ACHIEVEMENT

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Abstract
This study is to more clearly identify the problems of students’ vocabulary achievement in distance learning and how the use of Android applications as a way of mobile learning to address the problem. This study aims to examine the effectiveness of the mobile learning concept with the use of a learning source named Lima Sahabat for learning vocabulary among seventh-grade students of junior high school. A Pre-experimental research design was used (one group Pre-Test and Post-Test design). The population in this study were all the seventh-grade students (64 students) and the sample was class VII B (31 students) which was chosen by using purposive sampling. The finding of the data analysis showed that the mean score of the Post-Test (88.84) was higher than the Pre-Test (55.83) with the improvement percentage was 59.13% and the success rate of the students’ score in the difference of the Pre-Test and the Post-Test showed that the p-value = 0.00 was less than the α = 0.05 which means that there was a significant improvement of the students’ vocabulary achievement.

Keywords: Android Application, Distance Learning, Vocabulary

INTRODUCTION
The Minister of Education in Indonesia has implemented a policy named Learning from Home to Education agencies to implement distance learning as the most effective national measures for preventing infection during the Covid-19 pandemic hence all traditional teaching or face-to-face learning within the classroom became temporarily switched to online learning in the scope of primary school to higher education. However, students' problems in learning caused by distance learning had so increased in its implementation that needs to offer a solution as Fajri et al. (2021) stated about the problems such as making students understand by using online learning material is considered difficult, internet facilities, capabilities of each students are different, and online learning is only effective for assignments. The phenomena challenged academics to provide to the student the effective learning concept in research to
address the difficulties hence the objectives of education will be still achieved in many levels of education that experience almost the same obstacles and problems.

Mobile learning becomes a solution in recent studies to address problems faced by students in distance learning. For example, Putra and Wardani (2021) conducted a preliminary survey to identify problems that occur during distance learning and found that the majority of parents complained about issues related to students who were less enthusiastic about learning and less motivated to learn independently. The researchers point that students’ learning motivation is an important thing to make students study well and complete their learning progress. As a solution, the researchers developed mobile learning app to gain students’ motivation and to achieve the effectiveness of distance learning. While the concept of mobile learning used to gain the effectiveness in distance learning, this study more specifically identify problems in learning English vocabulary which addressed by mobile learning as conducted by Wijaya et al. (2019) who observed English as a foreign language learning process at the seventh-grade students of junior high school and examine mobile learning based Android as a learning media. The researchers found that the problems in learning vocabulary caused by the lack of understanding, learning aid, and pronunciation. The researchers highlight the use of mobile learning-based Android as a solution that was effective significantly on the students' vocabulary learning, the researchers also proposed that there were weaknesses during the treatment that the class was noisy and the time required in applying mobile learning in the teaching and learning process was lengthy, but could be solved by applying mobile learning outside the class room.

The success in implementing distance learning by using mobile learning can be achieved with the element of multimedia in presenting the lesson, this kind of method more effective according to Sharifi et al. (2015) who explain that the use of traditional methods like ‘Chalk or marker and Board’ and an unaware of the effect of educational software when teaching vocabularies by Iranian teacher lead the researcher to examine the effect of vocabulary learning through multimedia software named ‘Rosetta Stone’ compared to Teacher-led Method (TLM). They use the words lists which were selected from the students’ books of elementary Iranian EFL learner. They conclude that the experimental group using the multimedia software performed better and proved to have a significant impact, than the
control groups using the TLM hence multimedia makes excellent teaching tool, especially in teaching vocabularies. Their finding proved that the multimedia elements in learning contributes to success rate of students learning. The implementing of multimedia elements in success rate of learning supported by students’ perception according to Friatin and Widiyaningsih (2018) who state that the use of digital multimedia showed students’ vocabulary were developed, they also felt enjoy, motivated, and interested in learning.

Based on a preliminary survey in a seventh-grade students of junior high school conducted by researchers to identify their problems that occur during distance learning especially in learning English as a foreign language, we found that there are two classes which one of the classes had a low-achieving students and poor learning outcome compared to another class. In delivering the learning, the teacher used a textbook as a main source titled ‘When English Rings a Bell’ that facilitated by school based on the curriculum standard also known as 2013 curriculum in Indonesia. During distance learning, the teacher adapted teaching method that used to do in face-to-face learning, the teacher explained the material of the textbook by using white board then to be adapted in online learning: the teacher had to capture the materials from the textbook then uploaded it in the form of photograph to the WhatsApp group with the teachers’ explanation, teacher instructed the students to learn the material because the facilities in classroom such as board could not be used and the limitation of the textbooks only for one class, but there are two classes hence only the teacher had the learning source. Especially the vocabulary material, students were asked to memorize, record videos about their memorizing, students wrote about vocabulary lists in their textbook that they had learned as an assignment, and doing discussions in WhatsApp group about their learning progress. However, missing was the learning should meaningful and this kind of teaching method, conventional, may cause to the poor learning outcome, This is in line with a research study by Priyanda et al. (2021) stated that the lack of willingness and ability of teacher to provide learning tools which use technology makes students tend to not interested in learning, not engaged to the learning activity, and become bored. Teacher should migrate from conventional method to innovative approaches to support learning in the moment of online learning as stated by Clark and Mayer in Mayer (2018) conventional media (such as books and face-to-face lectures) to computer-based media (such as narrated animations,
instructional video, etc) and also exemplified that with meaningful learning, learners engage in cognitive processes aimed at making sense of the material.

To address problems in this study was inspired on findings of recent studies on the subject of the using of mobile learning that are ideal in distance learning to help students’ vocabulary learning as a foreign language, Wu (2015) developed and examined Word Learning-CET6 as new way to retain English vocabulary by EFL students, the researcher found that the use of mobile learning based Android could significantly improve vocabulary acquisition, the researcher highlight three reasons for the significant result i.e. convenience, accessibility, and technological functions, the researcher presents three key features of the words as proper materials based on the curriculum content in the application, i.e. spelling, pronunciation, and definition. While learning vocabulary presented key features of spelling, pronunciation, and definition in texts presentation, it is really important to include multimedia functionality as Makoe & Shandu (2018) who conducted design-based research to develop VocUp in interventions for teaching and learning within the contextual principles of Open Distance Learning which emphasize student-centeredness, flexibility, and accessibility to address problems in distance learning for strategies in enhancing students’ English vocabulary. The researchers present the multimedia functionality of voice, text, and graphic-audio visual as concept of mobile learning to cater for innovative ways in teaching and learning with four main activities; part of speech and the definition, example how to use word in real life, exercises to test students grasp of the vocabulary, and the word lists to be reviewed. The researchers also highlight the importance of technological, as well pedagogical, aspects of implementing mobile-app. However, both recent studies had strong and weakness if compared. Wu developed and examined the effectiveness of mobile learning-based Android with the materials presentation only consisting of words. In the other hand, Makoe and Shandu using features in the device which incorporate basic multimedia materials; voice, text, and graphic-audio visual in presenting their materials, but missing were experimental research should be conducted to compare the differences in learning results and to verify the effectiveness of the result based on empirical study. They collected data through interview about participants’ experiences of downloading and using VocUp with particular references to the technical aspects, experimental research was not performed to find out success rate of
students as Wu did. Both studies determine the importance context of learner and language learning environment before deciding on the role technology of mobile learning before developed their application for the students.

Based on problem of preliminary survey in this study and how the multimedia functionality in mobile application led to success rate of the students’ learning outcome based on recent studies. The aim of this pre-experimental study has been to find out the effectiveness of the Android application in vocabulary achievement of seventh-grade students of junior high school in academic year 2020/2021 during Learning from Home policy in the time of Coronavirus. To reach this aim, the researchers have sought answers to the following questions:

1. How is the improvement of the students’ vocabulary achievement through the use of Android application named Lima Sahabat at a seventh-grade of junior high school?
2. Is there a statistically significant difference in the improvement of students’ vocabulary achievement through the use of Android application named Lima Sahabat at a seventh-grade of junior high school?

The Concept of Mobile Learning

The concept of mobile learning is widely used in recent studies in distance learning strategy. By its definition, Grant (2019) mention about the definitions of mobile learning or m-learning in many categories (for example: mobile learning as a subset of distance education and e-learning), m-learning as an umbrella term of using mobile computing devices (such as smartphones, cell phones, tablet computers, e-readers, and wearable devices) as a tool for teaching and learning. Many studies show that how m-learning interactive application presented to assist students and provide accessible learning source in distance education as study conducted by Abiky (2021) who revealed that WhatsApp was effective as an online instruction tool that can be installed on multiple platforms, smartphones or desktops. This is in line with Çetinkaya & Sütçü (2018) who examined Facebook and WhatsApp as a way on success in English vocabulary instruction and analysed the learners’ opinions about the implementation process. The researchers found that WhatsApp is more effective in teaching vocabulary than Facebook. The researchers point importance factors to cater solution of problems from students’ negative perception during the learning. For example, silencing
WhatsApp group as a solution to unnecessary messages that can disturb students during instruction. While WhatsApp is effective in providing instruction to assist students for mobile learning, monitoring tool is also needed for learning process (Agung, 2020). For example, Chik and Benson (2020) reported students’ existing digital practices during distance learning in the time of Coronavirus. They point the role of how teacher using video conferencing tool to present the material that streamed by the students.

Many literatures show that how characteristics and features of mobile learning interactive application support and lead to successful of learning as recent study by Klimova and Polakova (2020) who use questionnaire conducted with 28 students to know their perceptions of the use of a mobile application in EFL vocabulary teaching and learning. The researchers highlight that accessibility from anywhere and at any time, corrective feedback, and offering students another opportunity to prepare for the final credit test that they perceived as the main factor why the mobile app is facilitative for some learning actions. Another study which focus on delivering vocabulary learning that supported by the features of mobile learning by Yurdagül and Öz (2018) who investigated students’ attitudes towards mobile learning in order to gain deep insight about their point of view that can be used as suggestions in designing and developing such language learning mobile applications in the context of foreign language learning. They found that vocabulary practice is the most needed issue by language learners that should involve practice such as meanings, collocations, pronunciation, and how to use in sample sentences. They also highlight those students can engage in language quiz shows that involve different quiz types as multiple-choice, fill-in-the blanks, matching, drag-and-drop items, and translation questions.

**METHOD**

**Research Design**

This pre-experimental (one group Pre-Test and Post-Test) research design has been performed at a seventh-grade students of junior high school in academic year 2020/2021 during the Learning from Home policy by Education Minister of Indonesia in the time of Coronavirus and the term time between 3 October and 26 December 2020 (thirteen weeks). The learning as a main source used in this study was the Android application named Lima.
Sahabat, the app can be downloaded on Play Store for Android platform user or following the link at [https://play.google.com/store/apps/details?id=com.ajaran.limasahabat](https://play.google.com/store/apps/details?id=com.ajaran.limasahabat). The design of the experiment presented as follows.

Table 1. The design of the pre-Experimental research (Arikunto, 2010)

<table>
<thead>
<tr>
<th>Pre-Test</th>
<th>Treatment</th>
<th>Post-Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>O₁</td>
<td>X</td>
<td>O₂</td>
</tr>
</tbody>
</table>

Where:

1. O₁ is the Pre-Test
   
   The Pre-Test was the test which would be given to the students before they treated to know students’ vocabulary achievement. The researcher made WhatsApp group at the first meeting, after that the researcher gave a Pre-Test by shared the Google Form link in the WhatsApp group. The researcher asked the students to answer the fill in-the-blanks questions and they submitted the form.

2. X is the Treatment
   
   For the treatment, students were asked to use the Android application named Lima Sahabat as a main source in learning and they were told not to use any learning source other than the standard course given to them during the eleven meetings of treatment (11-week period). Each meeting for 2x60 minutes according to teaching and learning activity that the researcher had managed in lesson plan, students were asked to use the Lima Sahabat for 60 minutes. Students had the opportunity to repeat the learning material presented by Lima Sahabat without any time or place restrictions outside the time of the meetings or individually at their own pace to support spaced repetition beside the researcher asked students recall the learning item in WhatsApp group discussion after the use of Lima Sahabat. The procedures of treatment were focus on learning vocabulary that separated in each theme-based on groups. The First to the third meeting focused to introduce Lima Sahabat and in the group theme-based on ‘things in the classroom’ in ‘Learning’ and ‘Quiz’ Section. In detail, researcher demonstrated how to access and operate Lima Sahabat step by step and explaining about vocabulary learning in two sections with the main topic about plural and singular noun (Pre-Training). The first to the
second meeting focus on ‘Learning’ section. For the first meeting, focus to learn as much as ten vocabularies. The Second meeting, focus to learn as much as eleven vocabularies. The third meeting, moving to ‘Quiz’ section. The Fourth to the fifth meeting focused on the learning source by using Lima Sahabat in the group theme-based on ‘things about public building’ in ‘Learning’ and ‘Quiz’ section. The Fourth meeting focus to learn as much as six vocabularies on ‘Learning’ section and the fifth meeting moving to ‘Quiz’ section. The sixth to the eighth meeting focused on the learning source by using Lima Sahabat in the group theme-based on ‘things in the house’ in ‘Learning’ and ‘Quiz’ section. The sixth to the seventh meeting focus on ‘Learning’ section. For the six meeting, focus to learn as much as eight vocabularies. The seventh meeting, focus to learn as much as nine vocabularies. The eight meeting, moving to ‘Quiz’ section. The ninth to the eleventh meeting focused on the learning source by using Lima Sahabat in the group theme-based on ‘things around the yard’ in ‘Learning’ and ‘Quiz’ section. The ninth and the tenth meeting focus on 28 ‘Learning’ section which focus to learn as much as nine vocabularies each meeting. The eleventh meeting, moving to ‘Quiz’ section.

3. O₂ is the Post-Test

The Post-Test was the test after the treatment, the researcher gave a test as given in the Pre-Test (same difficulties and randomly using item questions from Pre-Test to post-test). The post-test was given to the students. The researcher shared the Google Form link in the WhatsApp group and asked the students to fill it based on their understanding of the materials topic and upload the screenshot of their progress in dashboard menu of Lima Sahabat in the WhatsApp Group. The result of the Post-Test was calculated in order to know whether the students’ vocabulary achievements were improved or not by using Lima Sahabat that compared with the result of the Pre-Test.

Population and Sample

The population in this study was 64 students at a seventh-grade of junior high school in academic year 2020/2021. There were two classes of that population named VII A and VII B respectively 33 and 31 students. Purposive sampling was used in this study as a technique in choosing the sample among the population. The sample of this study was VII B that consisted
of 31 students. As consideration of choosing the VII B, according to the English teacher that the students had the lowest achievement in learning English during distance learning, compared to class VII A, in learning vocabulary. In the teaching and learning process, the all the students had smartphone-based Android as a facility in distance learning, their devices were installed communication tools that support them during distance learning i.e., Facebook as one of the common social networks and instant messaging application WhatsApp. Considering that students facilitated a free internet connection by the school through the policy of Minister Education during distance learning hence no was a technical problem in implementing the mobile learning. Moreover, this study as theme raised had never been conducted before in the class VII B as a sample

**Research Instrument**

The researcher used an achievement test in measurement of the students’ vocabulary achievement in Pre-Test and Post-Test by used Google Form, the Pre-Test and the Post-Test consisting of 68 questions according to the seventh-grade of junior high school level curriculum material that presented in learning source named *Lima Sahabat*. The questions between the Pre-Test and the Post-Test were the same, but the questions in the Pre-Test were randomly presented in the post-Test. In total, there are as many 62 questions of singular noun i.e., 21 questions in the theme of ‘things in the classroom’, 6 questions of ‘things about public building’, 17 questions about ‘things in the house (specifically about things in the living room and garage)’, and 18 questions about ‘things around the yard’. Beside the questions about singular noun, in total there are as many 6 questions about plural noun i.e., questions about ‘things in the classroom’, ‘things about public building’, ‘things in the house’, and ‘the things around the yard’ that each themes have two questions about how to use noun in the context of sentence structure, the sentences about describing and mentioning various nouns about their number and their location.

**Data Collection**

The Pre-Test and the Post-Test performed before and after the treatment within an interval of approximately 90 days (Pre-Test to Post-Test), respectively, to find out the students’ vocabulary achievement. It was expected that students’ learning achievement would higher after the treatment. In this study, there were thirteen meetings (one meeting per week)
every Saturday at times between 08:00 am and 10:00 am. It consisted of 1 meeting for Pre-Test, 11 meetings for treatment, and the last meeting for the post-Test. Each meeting lasted 120 minutes of class time, the researchers using the concept of mobile learning in controlling and giving instruction in the WhatsApp group and Google Meet (video conferencing tool) in monitoring the Pre-Test and the Post-Test, the main source of this study was the Android app named *Lima Sahabat*. Care was taken to ensure that the test condition (the environment and the duration of the test) were identical in both tests. In examining the students in the Pre-Test and the Post-Test, students were given an instruction in WhatsApp group to open Google Meet, they had to activate their camera as proof that they would did independently their test and the students also asked to open the link of Google Form then they were asked to answer the questions while the researchers were streaming or monitoring them during video conferencing session, time lasted 40 minutes to do their test.

**Data Analysis**

This section analyzed the score of each student and the mean score according to the test result. The data from the test were analyzed quantitatively. It employed statistical calculation to the hypothesis.

1. Scoring the students’ correct answer of the Pre-Test and the Post-Test by using the following formula as follows.

   \[
   \text{Students' Score} = \frac{\text{The Number of Students' Correct Answer}}{\text{The Number of Tests}} \times 100
   \]

   **Table 2. Scoring of the test**

<table>
<thead>
<tr>
<th>No.</th>
<th>Aspect</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Answering Correctly</td>
<td>1</td>
</tr>
<tr>
<td>2.</td>
<td>Wrong Answer</td>
<td>0</td>
</tr>
<tr>
<td>3.</td>
<td>The Number of tests</td>
<td>68</td>
</tr>
</tbody>
</table>

2. Classifying score into seven levels as follows.

   **Table 3. Measurement scale**

<table>
<thead>
<tr>
<th>No</th>
<th>Score</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>96-100</td>
<td>Excellent</td>
</tr>
<tr>
<td>2.</td>
<td>86-95</td>
<td>Very Good</td>
</tr>
<tr>
<td>3.</td>
<td>76-85</td>
<td>Good</td>
</tr>
</tbody>
</table>
3. Calculating the percentage of students’ improvement based on the Pre-Test and Post-Test.

\[ P \% = \frac{x_2 - x_1}{x_1} \times 100\% \]

Where:
- \( P \) : the percentage of the students’ increase score
- \( X_1 \) : the total score of Pre-Test
- \( X_2 \) : the total score of Post-Test

4. Calculating the percentage of students’ vocabulary by using this following formula:

\[ P = \frac{F}{N} \times 100\% \]

Where:
- \( P \): the percentage
- \( F \): frequency of the correct answer
- \( N \): the Total number of samples

5. The criteria for the hypothesis testing.

<table>
<thead>
<tr>
<th>Comparison</th>
<th>Hypothesis</th>
<th>( H_0 )</th>
<th>( H_1 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>( p – value &lt; 0.05 )</td>
<td>Rejected</td>
<td>Accepted</td>
<td></td>
</tr>
<tr>
<td>( p – value &gt; 0.05 )</td>
<td>Accepted</td>
<td>Rejected</td>
<td></td>
</tr>
</tbody>
</table>

FINDINGS AND DISCUSSION

Research Finding

*The Improvement of the Students’ Vocabulary Achievement*
A Pre-Test was conducted to find out the data of the students’ vocabulary achievement before the treatment was given. The result of the test showed that the highest score was 66.17 and the lowest score was 44.11 then the mean (X) was 55.83. The Post-Test was also conducted to find out the data of the students’ achievement in vocabulary after the treatment was given. The highest score was 100 and the lowest score was 76.47 then the mean (X) was 88.84 hence the improvement percentage was 59.13% as seen in table 5.

Table 5. The improvement of the students’ vocabulary achievement

<table>
<thead>
<tr>
<th>Mean Score</th>
<th>Pre-Test</th>
<th>Post-Test</th>
<th>Improvement (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>55.83</td>
<td>88.84</td>
<td>59.13</td>
<td></td>
</tr>
</tbody>
</table>

The rate percentage of the students’ Pre-Test and Post-Test scores were presented in the table 6 showed that in the Pre-Test, which was done before treatment, which 1 student (3.22 %) belonged to ‘fairly good’ category, 10 students (32.25 %) who belonged to ‘fair’ category, 19 students (61.29 %) who belonged to ‘poor’ category, and 1 students (3.22 %) belonged to ‘very poor’ category. While in the Post-Test that done after the treatment, from 31 students, there was 2 student (6.45 %) who belonged to ‘excellent category’, 20 students (64.51 %) belonged to ‘very good’ category, and 9 students (29.03 %) which belonged to ‘good’ category. Based on the result, it can be concluded that the rate percentage in the Post-Test was higher than the rate percentage of the Pre-Test.

Table 6. The rate percentage of the Pre-Test and the Post-Test score

<table>
<thead>
<tr>
<th>No</th>
<th>Classification</th>
<th>Pre-Test</th>
<th></th>
<th></th>
<th>Post-Test</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Excellent (90-100)</td>
<td>F 0</td>
<td>%</td>
<td></td>
<td>F 2</td>
<td>%</td>
</tr>
<tr>
<td>2</td>
<td>Very Good (80-89)</td>
<td>0</td>
<td>0</td>
<td></td>
<td>20</td>
<td>64.51 %</td>
</tr>
<tr>
<td>3</td>
<td>Good (70-79)</td>
<td>0</td>
<td>%</td>
<td></td>
<td>9</td>
<td>29.03 %</td>
</tr>
<tr>
<td>4</td>
<td>Fairly Good (60-69)</td>
<td>1</td>
<td>3.22</td>
<td>%</td>
<td>0</td>
<td>0 %</td>
</tr>
<tr>
<td>5</td>
<td>Fair (&gt;=59)</td>
<td>10</td>
<td>32.25</td>
<td>%</td>
<td>0</td>
<td>0 %</td>
</tr>
<tr>
<td>6</td>
<td>Poor</td>
<td>19</td>
<td>61.29</td>
<td>%</td>
<td>0</td>
<td>0 %</td>
</tr>
<tr>
<td>7</td>
<td>Very Poor</td>
<td>1</td>
<td>3.22</td>
<td>%</td>
<td>0</td>
<td>0 %</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>31</td>
<td>100</td>
<td>%</td>
<td>31</td>
<td>100 %</td>
</tr>
</tbody>
</table>

There was an improvement of mean score of Pre-Test and Post-Test. Before the treatment, the researcher conducted Pre-Test, the mean score was 55.83. After the treatment, the mean score was 88.84. It means that the improvement happened after the implementation of mobile learning. As the conclusion, it was relatively fair to state that the implementation of
Lima Sahabat as learning source at the seventh-grade of junior high school could improve students’ vocabulary achievement that presented in figure 1.

![Bar chart showing pre-test and post-test scores]

Figure 1. The Mean Score of the Pre-Test and the Post-Test

The success rate of the students’ score in difference of the Pre-Test and the Post-Test

Before determining whether the data would analyze using parametric statistic or non-parametric statistic, normality test conducted. Normality test aim to test whether the dependent variable data had a normal distribution or not. To test for normality data, researchers analyzed the difference score of the Pre-Test and the Post-Test then the difference scores were used to determine the normality on the basis of the decision if the $p$ – value > $\alpha$ = 0.05, then the data fulfills the assumption of normality or normally distributed. Based on the result of the normality test, the $p$ – value of Shapiro-Wilk is bigger (0.830) than the level of significant (0.05) indicates that the data meets the assumption of normality hence the dependent variable has a normal distribution. The results presented in table 7.

<table>
<thead>
<tr>
<th>Table 7. Test of normality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Difference of Pre-Test and Post-Test</td>
</tr>
<tr>
<td>-------------------------------</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

$^*$ $p$ – value of Shapiro-Wilk is not significant at the 0.05 level.

This study conducted a parametric statistic analyze using Paired-Samples $t$-test that was performed to find out whether or not there was any statistically significant difference between success rates of students’ score in Pre-Test and Post-Test. Based on Paired Samples $t$-test, it was found that the $p$ – value = 0.00 is less than the $\alpha = 0.05$ then $H_0$ was rejected and $H_1$ was
accepted. It means that there was a significant difference between the average value before the treatment (Pre-Test) and the average value after the treatment (Post-Test) hence it can be concluded that there was a statistically significant difference. The table 8 show the test results using the Paired Samples t-test.

Table 8. The success rate of the students’ score

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>t</th>
<th>p*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Test – Post-Test</td>
<td>33.01</td>
<td>8.24</td>
<td>22.29</td>
<td>0.000</td>
</tr>
</tbody>
</table>

*p – value of Sig. (2-tailed) is significant at the 0.05 level.

As the conclusion, the difference in data from Pre-Test and Post-Test were normally distributed hence could be analyze with parametric statistic then to be tested with Paired Samples t-test by using SPSS and the result relatively fair to state that the implementation of mobile learning in teaching and learning vocabulary in the seventh-grade students of junior high school could significantly improve students’ vocabulary achievement.

Discussion

In supporting recent reviewed literatures, this study provides additional support to Talan's (2020) conclusion “mobile learning had a positive and broadly significant effect on learning performance”, it also endorses the argument proposed by Kukulsa-Hulme et al. (2017) that “mobile phones and other portable devices should enable new ways of learning that embrace learning beyond the classroom that, increasingly, formal learning takes place in informal settings”. Reason why to the success rate of students’ score of learning outcome may be attributed to the three reasons that supported by recent studies. First, how the use of learning source of Android app named Lima Sahabat was presented in this study about features and characteristic (Klimova and Polakova, 2020) (Yurdagül and Öz, 2018), design presentation aspect (Hao et al., 2019) (Hashemifardnia et al., 2018), and also the instructional design (Clark and Mayer, 2016) (Mayer, 2017) (Mayer, 2018). Second, how the strategy in presenting the vocabulary learning through mobile learning as a part of the researchers’ role as teachers in this study who planning, organizing, training, and monitoring the learning activity. The learning was designed for 2013 curriculum hence proper to the students’ current level and needs, including spaced repetition in learning activity (reviewing at students’ own pace and recall the vocabulary learning while the meeting) was the important part that
students had done, the use of theme-based learning for vocabulary (Nation, 2020) hence the teaching and learning process organizing well with clear focus in each meetings of treatment, and also the use of e-flashcard concept in presenting vocabularies (Li and Tong, 2019) (Kusumawati et al., 2017). Third, the concept of mobile learning in training (pre-training and creating learning environment which lead the discussion as learning topic) and monitoring (giving instruction in learning activity about how to use the learning source and controlling the students learning activity) (Abiky, 2021) (Çetinkaya and Sütçü, 2018) (Chik and Benson, 2020).

Compared to the recent studies about the developed mobile learning to support vocabulary learning (Wijaya et al., 2019) (Sharifi et al., 2015) (Friatin and Widiyaningsih, 2018) (Wu, 2015) (Makoe and Shandu, 2018) (Li and Tong, 2019) (Kusumawati et al., 2017). The learning source named *Lima Sahabat* was special which had its own design presentation and focusing on presenting the materials according to the 2013 curriculum that consist of 62 vocabularies (focusing on nouns) hence proper for the seventh-grade students of junior high school level and it was designed to be accessed by using Android phone with the functionality of interactive multimedia.

**CONCLUSION**

At the conclusion of this study, the researcher examined the effectiveness of Android app named *Lima Sahabat* as a learning source with learning presentation established from curriculum standard of seventh-grade students of junior high school in Indonesia named 2013 curriculum and also the use of WhatsApp and Google Meet (video conferencing tool) as a learning tool to control and monitor the students’ learning which can be followed as a way of mobile learning. *Lima Sahabat* was used to facilitate and enhance vocabulary achievement of the students for learning English as a foreign language during Learning from Home policy in distance learning.

The finding shows that the use of *Lima Sahabat* can enhance vocabulary achievements of students. Based on our findings, the improvement percentage was 59.13% of the Pre-Test (mean score: 55.83) and the Post-Test (mean score: 88.84) hence there was an improvement after the implementation the concept of mobile learning with the use of *Lima Sahabat* as a learning source in distance learning, as a result, the success rate of the students’ score
between the Pre-Test and the Post-Test found that the \( p \)-value = 0.00 is less than the \( \alpha = 0.05 \) then \( H_0 \) was rejected and \( H_1 \) was accepted which means that there was a significant improvement of students’ vocabulary achievement at the seventh-grade of junior high school.

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