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ANDROID-BASED MLM IN TEACHING READING OF REPORT TEXTS

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Abstract

Mobile phones can be well integrated into English Instruction as the creativity and innovation of teaching media increase students' interest and motivation. This research aims to reveal the validity, effectiveness, and practicality of utilizing Android-based MLM in teaching reading report texts. The present research employed the research and development design. The research instruments were questionnaires, tests, and learning media in Application Package Files (APK). The collected data were analyzed by employing descriptive statistics and inferential statistics with a t-test. This research's subject was an experimental class and a control class in Senior High School of Muhammadiyah 2 of Purbalingga. The expert validation results were categorized into relevant and feasible learning media to teach report texts. The pre-test and post-test mean scores in the experimental class showed a highly significant difference because the class outperformed the control class. It means that Android-based MLM was effective for enhancing students' reading comprehension of report texts. Meanwhile, the result of students' perception obtained a good category. The data reveal that 70.4% of the students agreed to use Android-based MLM in the learning process. This research concludes that the final product meets the criteria of teaching media evaluation.

Kata Kunci: Android-based MLM, reading, report texts

INTRODUCTION

The technological development in the learning process, especially for internet access to explore students' knowledge and participation in educational resources, is familiar in education to create an effective and efficient learning process. One of the benefits of technologies in education is to expand the use of learning media in the teaching process. Using technology-based learning media is very important to support the students' learning process because it can help them understand the material and reduce their boredom (Mulyadi et al., 2020). Thus, the primary function of learning media is to help students comprehend the learning materials.

Furthermore, the use of media technology in the teaching process aims to transfer knowledge, share the material, and deliver learning objectives to the students. When teachers use appropriate and exciting media in the learning process,

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they will positively impact students' learning achievement (Ocepek et al., 2013). As one of the technological devices, an Android application can increase students' motivation and strengthen mobile technology in the learning process. The above description implies that learning media's primary function is to help students comprehend their teachers' material. Furthermore, when teachers use appropriate and interesting media in the learning process, they will positively impact students. They can focus more on the materials because learning media can influence the learning atmosphere, reduce students' boredom, and motivate them to participate in the classroom. Churchil & Wang (2014) assert that since mobile technological devices can increase students' motivation, it is positively appropriate to strengthen mobile technology in the learning process.

The use of smartphones (Android) as a learning media has become common at education levels because Android is exceptionally available and affordable for the learning process. This condition agrees with the development of technology. Moreover, more applications on smartphones (Android) are integrated into classroom teaching and can support the students' learning process through mobile learning.

The pre-observation conducted at SMA Muhammadiyah 02 Purbalingga indicated that the students had difficulty understanding English subject materials in the teaching process. The first problem was related to the media teachers utilized. In the learning process, teachers only employed textbooks and, sometimes, PowerPoint. This learning model did not attract students to learn English. The second problem dealt with the students' lack of motivation to learn English. During the teaching process, some students felt bored with teacher-centered learning. Besides, they had inadequate English reading ability. This research developed learning media using mobile phone technology to learn English in practical and interactive ways to respond to these problems. Thus, this research developed and investigated the validity, effectiveness, and practicality of Android-based MLM.

RESEARCH METHOD

Research Participants

This research's participants were students of class X MIA 1, as the experimental group, and students of class X MIA 2, as the control group. The experimental class employed Android-based MLM as learning instruction. Meanwhile, the control class employed textbooks as learning instruction.

Research Design

This research employed the research and development (R&D) method to develop Android-based MLM for teaching English reading comprehension of report texts. Furthermore, this research had two stages: learning media development and learning media tests.

In the development stage, Android-based MLM was designed, developed, validated, and revised. Android-based MLM was initially designed and developed to teach reading comprehension of report texts. Afterward, the developed Android-based MLM was validated by two experts, a content expert and a media expert, with construct validity. The content expert evaluated the learning materials while the media expert validated the mobile learning media's displays and practicality. Furthermore, the validation results elucidated some suggestions for improving MLM and its feasibility level to create effective learning media in teaching reading comprehension of report texts. The application was continually revised before applying it in the testing stage.

At the testing stage, this research applied a pre-test and a post-test of a control group design. This stage compared the experimental group with the control group, and the two groups were not selected randomly but purposively. They were identical groups with a similar average score of English courses before receiving the treatments. The pre-test and post-test were administered to determine the effectiveness of MLM to teach reading comprehension of report texts. Meanwhile, the pre-test was administered to the experimental and control classes. Henceforth, Android-based MLM was applied to the experimental class for six meetings of learning process, while conventional textbooks were applied to the control class. At the last meeting, the students in both experimental and control classes conducted a post-test. After the post-test, the experimental class students completed the questionnaire that was then administered to scrutinize learning instructions'

practicality using MLM. The data collected were quantitatively analyzed using descriptive statistics and inferential statistics.

RESULT AND DISCUSSION
The Validity of Android-based MLM

In the form of Application Package Files (APK), the developed Android-based MLM was operable for Android phones. Besides, the students were only required to install the application on their phone with a relatively small memory capacity of 33.6 MB. Therefore, students or other users can easily install it. Android-based MLM media resembles a PowerPoint, but it is more interactive and convenient for navigation. Moreover, this media can load videos, audios, images, and animations and provide practice questions with automatic feedback.
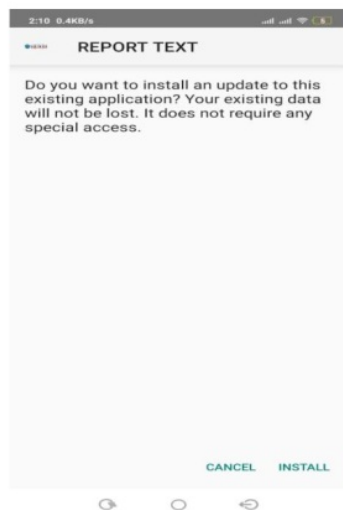

Figure 1. The APK File is Ready to Install on the Phone.

Figure. 2 The Installed Android-based MLM App is Ready to Use in the Learning Process.
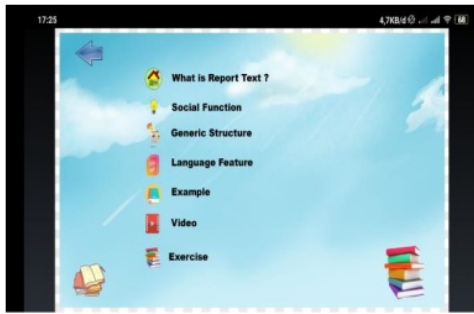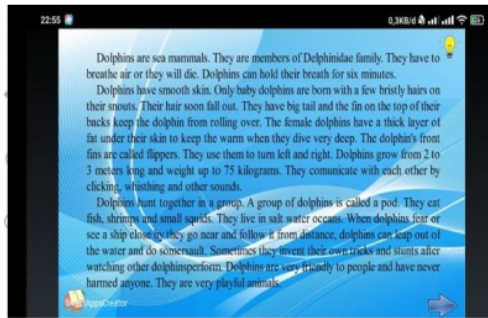
Figure 3. Main Menu Page
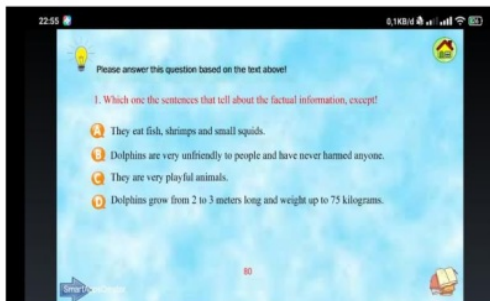

Figure 4. Example of Teaching Material Page

Figure 5. An Example of an Independent
Practice Page

Figure 6. Total Scores of Reading Tasks

This research applied the developed Android-based MLM in the learning process of report texts. Android becomes more prevalent in education, and one of its uses is to develop learning media. Using Android, in the form of a mobile phone application, aims to support the students' learning.

This media was successfully developed and could be used in the learning process. This finding agrees with the expert validation test and the students' perception of the Android-based MLM. Besides, this success was obviously depicted in the students' involvement in the learning process. They could be active and more enthusiastic because this media was applicable in online teaching. Therefore, all materials were already available on the students' mobile.

The assessment was based on two aspects of expert media validation and four aspects of expert material validation. The data validation from the media expert is presented in Table 1.

Table 1. The Validation Results from the Media Expert

Validation I

Media Expert	$\sum ni$	$\sum N$	%	Interpretation
Graphic feasibility aspect	1	3	33.3%	Quite relevant
Language feasibility aspect	3	6	50.0%	Relevant

The results of expert media validation reveal that all aspects of the media are categorized as relevant. It indicates that the developed media is already feasible to use in the learning process.

Table 2. The Validation Results from the Material Expert

Material Expert	Validation II			
	$\sum ni$	$\sum N$	%	Interpretation
Content eligibility aspect	3	3	100%	Very relevant
Quality aspect	1	2	50%	Relevant
Aspects of the quality of exercises	2	3	66.7%	Very relevant

The data of the material expert in Table 2 interpret that the developed media is very relevant. Thus, Android-based MLM materials are declared to be worth and qualified to use in the learning process.

The Effectiveness of Android-based MLM

The researchers analyzed the normality test and descriptive statistics to explore Android-based MLM's effectiveness in the learning process. The analysis results are explained as follows:

The Result of Normality Test

The normality test of the experimental class is shown by Sig. (2-tailed) value > 0.05; it means that the data of pre-test and post-test are normal. The results of normality data reveal the Sig. (2-tailed) values of pre-test and post-test in the experimental class = 0.563 and 0.306. These findings indicate 0.563 and 0.306 > 0.05. Furthermore, the results reveal the Sig. (2-tailed) values of pre-test and post-test in the control class = 0.661 and 0.167. These findings indicate 0.661 and 0.167 > 0.05. It is possibly concluded that the data results of pre-test and post-test are normal.

The Result of Descriptive Statistics

The pre-test and post-test data scores in the experimental class are shown in the variables of pre-test and post-test scores with 24 respondents. The mean pre-test score of the experimental class is 57.67, and the mean post-test score is 79.50. The minimum pre-test score in the experimental and control class is 36, while the minimum post-test score is 72. Next, the maximum pre-test score in the experimental class is 84, while the maximum post-test score is 88. The last is a standard deviation. The standard deviations of pre-test and post-test scores in the experimental class are 12.196 and 3.788.

Furthermore, the pre-test and post-test data scores in the control class are shown from the variable of pre-test and post-test scores with 25 participants. The mean pre-test score of the control class is 53.44, and the mean post-test score of the control class is 72. Besides these control class scores, descriptive statistics explains the minimum score, maximum score, and standard deviation. The minimum pre-test score in the control class is 20, and the minimum post-test score is 48. Meanwhile, the maximum pre-test score in the control class is 88, and the maximum post-test score is 84. The last was a standard deviation. The pre-test's standard deviation score is 19.489, and the post-test's standard deviation score is 9.522.

To find out the effectiveness of the media, the significant value (sig.) of the SPSS output must indicate (2-tailed) < 0.05. It means that Ho is rejected while Ha is accepted. On the other hand, the significant value indicating (2-tailed) > 0.05 means that Ho is accepted and Ha is rejected. Based on the data in Table 1 and Table 2, it is concluded that the significant value (2-tailed) of the experimental class is equal to 0.000 < 0.05. Therefore, Ho is rejected while Ha is accepted. Meanwhile, the significant value of the control class is equal to 0.000 < 0.05. It indicates that Ho is rejected and Ha is accepted. The paired sample of T-test results concludes that there was a different mean between pre-test and post-test results. It indicates that Android-based MLM had several effects on the learning process.

Table 5. The Different Scores of Pre-Test and Post-Test of the Experimental and Control Classes

Class	Total of	Mean of Pre-	Mean of Post-

	Students	Test	Test
Experimental	24	57.66	79.50
Control	25	53.44	72.00

Table 5 explains the students' pre-test and post-test results in the experimental and control classes. The students' average pre-test result in the experimental class is 57.66, and in the control class is 53.44. Moreover, this research conducted a post-test for both classes to measure students' reading comprehension achievement. The data in Table 5 deduce that the learning process applying Android-based MLM acquire a higher average score rather than a learning process applying the conventional learning media. The experimental class's score is 79.50, while the control class's score is 72.00.   Furthermore, Table 5 denotes that the different pre-test scores between the experimental and control classes are not significant for 57.66 and 53.44. It means that the two classes still have a common understanding of the material before the teaching process. Besides the pre-test score, the students' understanding was seen when asked several questions before the teaching process. Several students who did not understand the report text's material could not comprehend the report texts. They confusedly differentiated report texts from descriptive texts.

The students' pre-test results in the experimental class and control class conclude that most students could not distinguish the identification of descriptive texts and general classification of report texts. Besides, they could not understand the text contents. Consequently, they hesitantly analyzed texts that contain facts and opinions.

Furthermore, the post-test results in the experimental class and control class show a significant difference between the students in the experimental class and the control class for 79.50 and 72.00. The students' exercise results had supported the data after the teacher explained the material. Most of the students could analyze report texts and distinguish between report texts and descriptive texts.

Furthermore, the significantly different results of the experimental class are shown by the analysis result of students' reading comprehension of report texts.

They could distinguish the general classification and identification of report texts and descriptive texts. Moreover, they could determine the report texts' main information and write a scientific resume after thoroughly researching the texts. Meanwhile, in the experimental class, students' understanding is shown by their scores after completing assignments on Android-based MLM.

The students' post-test results in the control class can be indicated by understanding the differences between facts and opinions in a report and descriptive texts. Most of them could understand that report texts were usually created after a careful investigation through various considerations.

The average pre-test score in the experimental class is 57.66, and in the control class is 53.44. In comparison, the average post-test score in the experimental class is 79.33, and in the control class is 76.64. This research obtains a difference of 21.67 between the pre-test's mean scores and post-test's mean scores in the experimental class. The post-test score had been higher than the pre-test score before the students received the materials using Android-based MLM. Moreover, this research obtained the difference between the pre-test's mean score and the post-test's mean score for 23.2 in the control class.

The students in the two observed classes, class 10, showed a significant difference between using Android-based MLM and using YouTube video or WhatsApp group discussion as learning media. This difference is presented by the mean scores of pre-test and post-test that were previously clarified. The average score comparison between pre-test and post-test is presented in Figure 4.
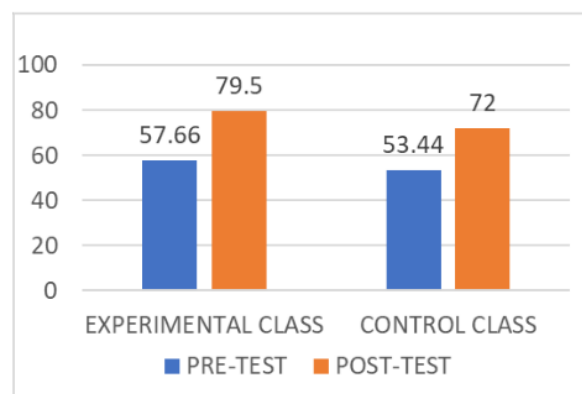
Figure. 4. The Average Score Comparison of Pre-Test and Post-Test

Figure 4 denotes that the experimental class shows improvement in average score of 21.89, from 79.50 to 57.66. Meanwhile, and the control class's average score improves for 18.56, from 72 to 53.44. It indicates that the experimental class has a higher score than the control class. Therefore, it is concluded that there was a significant difference between the students using Android-based mobile learning and the students using YouTube videos and WhatsApp group discussion in the learning process. This finding indicates that Android-based mobile learning media is accepted. Moreover, this finding agrees with Sung et al. (2016), who explain that mobile phone technology can support the students' activities in the teaching process because learning media-based technology can increase their interest in the learning process and effectiveness of the learning process. This theory deduces Android-based MLM influenced the pre-test's and post-test's results in the experimental class. The students could understand the materials more easily because m-learning media made the teaching process attractive and attracted students to participate actively.

Furthermore, the significantly different teaching process in the experimental class was visible before the students received Android-based MLM materials. These significant differences were from the pre-test and post-test results and students' enthusiasm to learn the materials.

These results conclude that Android-based MLM provides better facilitates for the students to learn report texts than YouTube videos or WhatsApp group discussions. Moreover, the students' comprehension could be seen from their scores of answering exercises and questions in the teaching process. This condition agrees with Zatulifa et al. (2018), who deploy that mobile technology can be an alternative learning media for the learning process because it is flexible and enables students to learn anywhere and anytime. Consequently, the frequency of students' learning possibly increases, and students' high retention is available. Besides, the students' understanding can be seen from their scores of answering exercises and questions in the learning process.

Android-based MLM was easily applied in the learning process because the students did not need to wait for the teachers' material explanation. This application

was designed with sophisticated features, such as pictures, videos, audios, and exercises that view the scores automatically, and many icons that enable the students to operate as their demands. Therefore, this media is good and positively useful to support the students in grade 10 to learn report texts. The previous data conclude that the use of Android-based MLM in the teaching reading process of report texts has a significant effect on students' reading comprehension.

The Practicality of Android-based MLM

This research discovers the students' perception of experimental class in the teaching process using Android-based MLM. This research distributed the questionnaire to the experimental class students to present their perception of utilizing android-based MLM. This questionnaire was distributed after they applied the Android-based-MLM in the teaching process of report texts. Then, the obtained data from the questionnaire were analyzed. These results are presented in Table 6.

Table 6. Questionnaire Results of the Experimental Class

No.	Statements	Mean	Category
1.	Android-based MLM as learning media can help the students' learning process.	2.84	Good
2.	Android-based MLM is more efficient for the learning process.	2.88	Good
3.	Using Android-based MLM in the learning process can empower students to be more autonomous.	3.00	Good
4.	Using Android-based MLM in the learning process can increase the students' activity in the learning process.	2.76	Good
5.	Android-based MLM can increase the students' responses to understand the material.	2.68	Good
6.	Android-based MLM can directly provide feedback for the learning process.	2.84	Good
7.	Implementing Android-based MLM makes the learning process more effective than implementing conventional media.	2.76	Good
8.	Using Android-based MLM can encourage the students to interact in the learning process.	2.76	Good
9.	Android-based MLM is more authentic than	2.80	Good

	conventional learning media.		
10	Android-based MLM is more easily accessed than conventional learning media.	2.84	Good

The statistical results presented in Table 6 conclude that the students agreed with the statements. It means that Android-based MLM is good and worthwhile to support media to learn report texts for students of grade 10.

The first questionnaire's score is 2.84 and is categorized as good. It means that the students agreed with the statements. They could easily understand the material when the teachers used Android-based MLM because each student could access this media.

The second statement's average score is 2.88 and is categorized as good. It means that most of the students agreed that using Android-based MLM in the learning process was more efficient because all materials and exercises were on the application. Thus, they could learn every time and everywhere.

The third statement's average score is 3.00 and is categorized as good. It means that most of the students preferred Android-based MLM because it could empower them to be more autonomous in the learning process.

The next statement obtained an average score of 2.76, and it is categorized as good. Most of the students were active and interested in the learning process of implementing Android-based MLM. Moreover, the class became active during the learning process because they obligatorily understood the material individually.

The fifth statement's average score is 2.68 and is categorized as good. It means that the students' responsibility to understand the material increased after using Android-based MLM.

Furthermore, the sixth statement's average score is 2.84 and is categorized as good. It means that the students agreed with using Android-based MLM in the learning process because the application could view feedback automatically and immediately.

The seventh statement's average score is 2.76 and is categorized as good. It means that the teaching process using Android-based MLM was more effective

because it helped students understand the material more easily. Besides, they could apply this media in the learning process at any time.

The eighth statement's average score is 2.76 and is categorized as good. Most students agreed that Android-based MLM media could encourage their interaction because they had to understand the materials. When the material was unclear, the app would force them to interact with their teachers or friends.

The ninth statement's average score is 2.80 and is categorized as good. It means that Android-based MLM media is authentically used in the learning process. The students could see the results of their exercises on this app. Thus, they could evaluate their learning after seeing their scores.

The last statement's average score is 2.84 and is categorized as good. It concludes that Android-based MLM is more accessible because it is only installed once on the students' gadgets. Besides, most students stated that the app was simple and easy to access on mobile devices, and it can be accessed offline or did not require an internet connection for the learning process.

The students' perception of implementing Android-based MLM shows that most students agreed to use Android-based MLM in the learning process. The detailed results are:

1. The percentage score of 10 students in the small group trial is 68% and is categorized as good.
2. The percentage score of 25 students in the large group trial or the operational field trial increases from 68% to 70.4% and is categorized as good.

The results of the small group trial and field trial reveal that the students positively responded and gave feedback on this media. Nevertheless, some students suggested several points for Android-based MLM.

1. Android-based MLM was supposed to attract the students to join the teaching process because it motivated them to learn English. Besides, this media was the first Android-based MLM used in the learning process.
2. The icon displays was supposed to be larger.
3. The media was supposed to be more innovative, attractive, and engaging.

The students' perspectives infer that they need advanced learning media to increase their learning motivation and effectiveness. Android or smartphones significantly influence education, and thus, teachers can develop it as a learning media. This statement agrees with (Squire, 2009; Meister, 2011; Behera, 2013), who state that smartphones can be developed for learning media.

CONCLUSION

This research concludes that using Android-based MLM for grade ten students at a senior high school was valid. Furthermore, the media and material were categorized as valid. The final product was based on teaching media evaluation criteria and was applicable for the small and large learning groups. Android-based mobile learning was categorized as effective because the post-test results were higher than the pre-test results. Android-based MLM positively affected the learning process because its significant value (sig.) was equal to 0.00 < 0.005. The students' perceptions showed that the teaching process using Android-based MLM was effective for students and could increase their learning activities. It was proven by the results of the product trial in the small group consisted of 10 students, and the product was categorized as good for 68%. Besides, this media obtained students' positive responses in a field trial, or a large group trial consisted of 25 students for 70.4%. This result categorizes the product as good. These conclusions indicate that the use of technology can provide innovations for education.

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