Development of Interactive Multimedia for Arabic Vocabulary Learning through Android Applications

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***Abstract*:** This study aims to develop Android -based interactive multimedia in learning Arabic vocabulary so that students can use it as an independent learning resource that can be accessed anytime and anywhere and can be used by teachers to deliver Arabic vocabulary material effectively and efficiently. This research uses research and development methods, with ADDIE development model. The result of this research is to produce Android-based Arabic vocabulary learning media products developed with construct 2 software containing Arabic language learning for classes V MIN 2 South Lampung and V MI Ma'arif Nu South Lampung. To test the feasibility of Android-based interactive multimedia by validating products made to a team of experts and obtained an average percentage score of 80.56% by media experts, 83.89% by material experts. Then the product attractiveness test was assessed by students and obtained an assessment of 90.72% with the criteria of "very feasible". So the update that researchers made with previous researchers is a product packaged in the form of an Android-based interactive multimedia application in learning Arabic vocabulary so that students can learn it anywhere and anytime, both independently and in class.

INTRODUCTION

Learning Arabic for students is one of the foreign languages that is difficult to learn.[1] The difficulty that hinders students in the learning process is the difference in phonology or sound, writing system, word form, and sentence

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[1] Labo Efflamengo and Syamsuddin Asyrofi, "Analisis Faktor Kesulitan Belajar Bahasa Arab Pada Siswa Tunanetra Di MAN 2 Sleman," *EDULAB: Majalah Ilmiah Laboratorium Pendidikan* 4, no. 2 (2020): 43–58, https://doi.org/10.14421/edulab.2019.42-03.

structure.[2] With these obstacles, students assume that Arabic is a complicated subject to learn.[3]

Each language has different characteristics and levels of difficulty and ease. Desires, talents, and motivations from within students include internal factors or factors from within students and external factors such as an educator, curriculum, syllabus, teaching materials, and learning models, namely strategies, media, and evaluation.[4] Factors that affect the process and results of teaching and learning interactions are teacher factors as learning subjects and student factors as learning objects. Teacher and student factors with various cognitive, affective, and psychomotor potentials that are owned it is impossible for the teaching and learning interaction process in class or elsewhere to take place properly.[5]

Therefore, to help students learn Arabic, a large vocabulary is needed because Arabic vocabulary is an important thing in communicating and is a requirement that must be mastered in learning Arabic; besides that, it can also help students in writing, speaking, and communication in Arabic.[6] Arabic vocabulary is an element of the language that must be possessed by Arabic learners.[7] Vocabulary is also one of the elements of language that must be mastered by foreign language learners to be able to acquire communication skills with the language.[8]

So, as an educator, it would be nice to be able to take advantage of technological and scientific developments in making interesting and fun learning

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[2] Koderi Koderi, Muhammad Aridan, and Ahmad Bukhari Muslim, "Pengembangan Mobile Learning Untuk Penguasaan Mufrodat Siswa MTs," *Arabiyatuna : Jurnal Bahasa Arab* 4, no. 2 (2020): 265, https://doi.org/10.29240/jba.v4i2.1769.

[3] Syifa S. Mukrimaa et al., *Metodologi Pembelajaran Bahasa Arab*, *Jurnal Penelitian Pendidikan Guru Sekolah Dasar*, vol. 6, 2016.

[4] Asep Muhammad et al., "Faktor Demotivasi Pembelajaran Bahasa Arab," *Muhammad Asep Saeful Islam* 2, no. 1 (2015): 1–16.

[5] Nandang Sarip Hidayat, "Problematika PEembelajaran Bahasa Arab Oleh: Nandang Sarip Hidayat," *An-Nida'* 37, no. 1 (2012): 82–88.

[6] Umi Hijriyah, *Analisis Pembelajaran Mufradat Dan Struktur Bahasa Arab Di Madrasah Ibtidaiyah*, 2018.

[7] Mukrimaa et al., *Metodologi Pembelajaran Bahasa Arab*.

[8] Shofwatul Fu'adah, "Penggunaan Strategi Mind Mapping Dalam Pembelajaran Kosakata Bahasa Arab," *Lahjah Arabiyah: Jurnal Bahasa Arab Dan Pendidikan Bahasa Arab* 2, no. 1 (2021): 30–39, https://doi.org/10.35316/lahjah.v2i1.1014.

media to aim to help educators and students in the teaching and learning process.[9] With the existence of interesting media for students, it is expected to be a motivation for students to learn Arabic, and the results will increase.[10] The selection of media as teaching material, of course, greatly influences students in the process of learning Arabic. Choosing the right media will be very helpful in delivering material during the teaching and learning process.[11]

Learning media are materials, tools, and methods/techniques used in teaching and learning activities.[12] Rowntree suggests six benefits of media: generating learning motivation, repeating what has been learned, providing learning stimulus, activating student responses, providing immediate feedback, and promoting harmonious practice along with the development of information technology, Arabic language learning as national learning is required for continuous renewal both in methodology, the development of teaching materials, the improvement of facilities and infrastructure which includes the development of learning media and also the improvement of the quality of human resources as creative, innovative, and highly competitive (competitive) educators.[13]

As stated in Government Regulation Number 19 of 2005, the principle of curriculum implementation is implemented using a multistrategy and multimedia approach, adequate learning resources and technology, and utilizing the surrounding environment as a learning resource.[14] Language learning, which is the main goal, is the mastery of language skills. Language proficiency refers to

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[9] Gufron Amirullah et al., "Pengembangan Mobile Learning Bagi Pembelajaran," n.d., 97–102.

[10] Jurnal Kolaboratif Sains, "Meningkatkan Pembelajaran Bahasa Arab Siswa Melalui Media Audio Visual Dalam Manajemen Pendidikan Islam Tinjauan (Studi Di Madrasah Aliyah Negeri 2 Kota Palu)" 05 (2022): 466–80.

[11] Khotimatun Nafi'ah and Abdul Latif, "Methods Innovation, Media and Evaluation on Vocabularies Learning in Boarding Classroom SMPIT LHI YOGYAKARTA," *International Journal of Arabic Language Teaching*, 2021, https://doi.org/10.32332/ijalt.v2i02.2600.

[12] Taruna Iswara dan Rosnelli, "Pengembangan Media Pembelajaran Berbasis Multimedia Pada Mata Pelajaran Instalasi Penerangan Listrik," n.d.

[13] Muhandis Azzuhri, "Metode Dan Media Pembelajaran Bahasa Arab Berbasis Internet Di Era Teknologi Informasi" Vol. 14 No (2009).

[14] Farida Hasan Rahmaibu, "Pengembangan Media Pembelajaran Berbasis Multimedia Dengan Menggunakan Adobe Flash Untuk Meningkatkan Hasil Belajar PKn Studi Kasus SDI Al Madina Semarang," 2016.

abilities related to the use of language in real communication.[15] Related to this, Carpenter and Dale expressed how important learning media is in the learning process of students.[16] Researchers believe that Android can be developed into a learning medium and can increase student motivation, considering the subject matter and Arabic language skills.

According to Heinich, learning media can be said to be effective and efficient if the media can become 1) a means for students to have the required skills, 2) a means that stimulates students to expand knowledge and also the abilities or skills learned; 3) tools that help students to remember the subject matter that has been given (retention); and 4) how students can apply abilities under appropriate conditions.[17] So one of the innovations that educators can do is to use media that can improve students' mastery of Arabic vocabulary by using Android-based Arabic learning media for grade V MIN 2 South Lampung and V MI Ma'arif Nu South Lampung students because interactive multimedia based on Android Arabic language learning can be presented more interesting and thorough with material displayed in a combination of several media elements such as (audio, video, graphics, text, animation, etc.). Android is also an operating system for mobile phones based on Linux (a free operating system that can be used by anyone without having to buy).[18]

According to Firdan, one of the considerations in developing mobile phones into interactive multimedia is operation-based use. The operating system adopted by mobile phones has the advantages of being based on Android .[19] Android has several advantages such as 1) Completeness, Android provides many tools that can be used in building software, and the level of security has also been tested, 2) Open, as one of the platforms that provides open source licenses, this Android

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[15] Noca Yolanda Sari, dkk. "Penggunaan Multimedia Pembelajaran Bahasa Arab Berbasis Aplikasi Macromedia Flash 8 Di Tpa Al-Hidayah Sidoharjo Pringsewu" Vol. 2, No (2016).

[16] Ina Mangdalena, Alif FatakhatusShodikoh, and Anis Rachma Pebrianti, "Pentingnya Media Pembelajaran Untuk Meningkatkan Minat Belajar Siswa Sdn Meruya Selatan 06 Pagi,"

[17] Andi Kristanto, "Media Pembelajaran," *Bintang Sutabaya*, 2016, 1–129.

[18] Neneng Kurnia Apriyani, "Pengembangan Multimedia Interaktif Berbasis Android Pada Materi Sistem Pencernaan Manusia Untuk Peserta Didik Kelas XI SMA Negeri 6 Bandar Lampung," 2017.

[19] Firdan Ardiansyah, "Firdan Ardiansyah, Loc. Cit. h. 1.," n.d.

OS can be developed and used by anyone, and 3) Free, the nature of Android OS This allows users to develop systems that are made free or no royalties to be paid.[20]

Previous research Bintan Taskurina Hardiningtyas, with the title of interactive multimedia development "vocabulary" in Arabic language learning grade 3 SDI Miftahul Ulum Kediri.[21] The learning media used is interactive multimedia that designs an interactive Arabic vocabulary learning media that helps students master Arabic vocabulary. Selvi Dwi Hartiyani and Anik Ghufron, with the title of development and feasibility of Android-based multimedia for Arabic language learning at Islamic Boarding School Bina Umat.[22] Android -based application products are declared suitable for use based on the assessment of media experts and material experts with scores of 4.23 (very high) and 4.59 (very high), and material experts 4.44 (very high), so that the product can be declared feasible in Arabic language learning. Ramlah Basyir, Moch Kautsar Sophan, Rika Yunitarini, with the title of designing an Android application for learning Arabic vocabulary learning media using the ADDIE approach model.[23] The approach model in the media creation process is ADDIE; the display of this vocabulary application can appear perfectly on Android devices with a resolution of 480 x 800 pixels.

This Android -based interactive multimedia has been developed by many previous researchers. However, so far there has been no Android-based interactive multimedia developed specifically for Arabic vocabulary. Then the author will create an interactive multimedia application that focuses on the Android base in learning Arabic vocabulary class V MI. To facilitate students so that their learning outcomes increase, researchers are interested in developing

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[20] Devi Afriyantari Puspa Putri, "Rancang Bangun Media Pembelajaran Bahasa Arab Untuk Anak Usia Dini Berbasis Android," *Technologia: Jurnal Ilmiah* 10, no. 3 (2019): 156, https://doi.org/10.31602/tji.v10i3.2230.

[21] Bintan Taskurina Hardiningtyas, "Pengembangan Multimedia Interaktif 'Mufrodat' Dalam Pembelajaran Bahasa Arab Kelas 3 SDI Miftahul Ulum Kediri," 2019.

[22] Selvi Dwi Hartiyani dan Anik Ghufron, "Pengembangan Dan Kelayakan Multimedia Berbasis Android Untuk Pembelajaran Bahasa Arab Di Islamic Boarding School Bina Umat," *Jurnal Teknologi Pendidikan* Vol: 08/02 (2020).

[23] Rika Yunitarini Ramlah Basyir, Moch Kautsar Sophan, "Rancang Bangun Aplikasi Android Media Pembelajaran Kosa Kata Bahasa Arab Bergambar Dengan Menggunakan Model Pendekatan Addie," *Jurnal Ilmiah Edutic* Vol.3, No. (2016).

Android-based Arabic language learning. Because of this learning media, students can learn independently, anytime and anywhere with more time, not necessarily in class, not boring in understanding, and learning it so that it makes it easier for students to learn. Media will be created using the ADDIE development model (*analysis, design, development, implementation, evaluation*), which is a model that represents stages systematically (orderly) and systemically in use aimed at achieving the desired results.[24]

METHOD

The type of research used is the type of *Research and Development* (R&D) method. With the development model developed by ADDIE, which includes stages (*analysis, design, development, implementation, and evaluation*), the process stages in the ADDIE model are related to each other.[25]
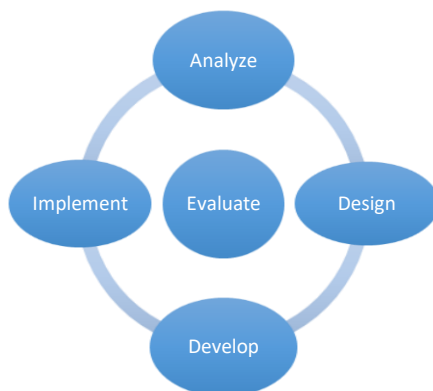
Picture 1. ADDIE Model Stages

In phase 1, analysis. The purpose of the analysis stage is to find out the initial needs in developing this learning media. In developing this media, needs analysis is needed, namely: (1) User Needs Analysis, (2) Content or Content Analysis, and (3) Hardware and Software Needs Analysis. Phase 2, design. This stage is carried out to design the expected Arabic learning media and appropriate testing methods. At this stage, a suitable program is designed to be developed to create an Android-based Arabic learning media that will be developed according to the results of the analysis carried out in the previous stage. In phase 3, development

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[24] Benny A. Pribadi, "Desain Dan Pengembangan Program Pelatihan Berbasis Kompetensi Implementasi Model ADDIE," 2016.

[25] Robert Maribe Branch, "Instructional Design the ADDIE Approach," 2009.

is the activity of making and testing products; at this stage, researchers continue to make media based on *storyboards* and designs that have been made. In Phase 4, implementation is a step of activities carried out with planning and refers to certain rules to achieve the objectives of a learning system activity. In phase 5, evaluation aims to determine the quality of the results of product trials. Both before and after implementation. Data regarding product quality is obtained from the results of analysis of assessment instruments filled in by validators. Data analysis of validation instruments to see the feasibility of learning media developed based on the Likert scale. The data analysis used in this study is a descriptive analysis with the following steps:

Category	Score
SB (Excellent)	5
B (Good)	4
C (Sufficient)	3
K (Less)	2
SK (Very Less)	1

Calculate the feasibility percentage of each aspect using the formula:

$$P = \frac{\sum x}{\text{SMI}} \times 100\,\%$$

Information:

P   : Present

$\sum x$: Number of Scores

SMI : Ideal Maximum Score.[26]

Convert the average score obtained into a qualitative score that matches the assessment criteria.

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[26] Ketut Pudjawan, I Made Tegeh, I Nyoman Jampel, "*Model Penelitian Pengembangan*" (Graha Ilmu, 2014), h.82.

| Average	Validation Criteria
0%-20%	Very Less Feasible
21%-40%	Less Decent
41%-60%	Pretty Decent
61%-80%	Proper
81%-100%	Very Worth It

RESULTS AND DISCUSSION

Development of Android-based Arabic vocabulary learning media. This product is packaged in the form of an Android-based application, using several stages of ADDIE development. The stages of ADDIE development include five stages, namely analysis, design, development, implementation, and evaluation.[27] The stage of this research is analysis. At this stage, there are two stages, namely, Needs Assessment and Front-end Analysis. a) Needs Assessment.

At this stage, researchers conduct a needs analysis to obtain information related to learning media in accordance with what students need. Based on interviews with Arabic teachers of class V MIN 2 South Lampung and V MI Ma'arif Nu South Lampung, information was obtained that Arabic subjects, especially Arabic vocabulary material, in the learning process, educators still use learning media that are fairly classic, namely using printed books, and blackboards. With these media, it is still seen that students are less enthusiastic or not active in learning Arabic vocabulary, thus the occurrence of students less interested in learning Arabic. Especially Arabic vocabulary material. With this, students need a novelty in learning Arabic so as not to be bored and interested in learning Arabic.

The results of the observation also show that the majority of students have Android, but it is not used as a learning media tool during the teaching and learning process; students only use package books and have not used Android as a learning media facility, even though modern technology such as Android can have a positive impact if used and utilized in good and positive ways, especially for education.

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[27] Robert Maribe Branch, "Instructional Design the ADDIE Approach."

At the design stage, it is necessary to develop teaching media for Arabic vocabulary subjects on an Android basis whose source material comes from printed books and Arabic dictionaries about Arabic vocabulary material learning for grade V MIN 2 South Lampung and V MI Ma'arif NU South Lampung students, and packaged more attractively and equipped with pictures, audio, text, animation, and evaluation as a means of supporting learning. This learning media contains Arabic vocabulary material composed of 3 chapters, namely: 1) limb vocabulary, 2) profession vocabulary, and 3) zoo vocabulary.
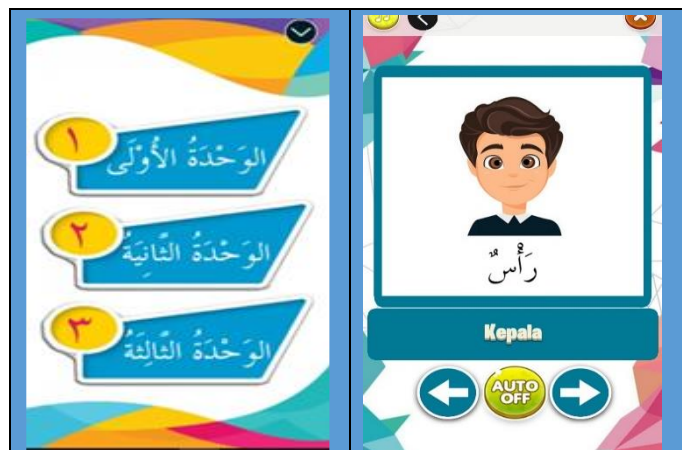
Picture 2. Chapter view and material display

The display of material on this learning media is equipped with attractive images, voice text, and colors so that students are expected to make it easier for students to memorize and master Arabic vocabulary, and there are evaluation questions provided, such as the image media below.

Picture 3. Evaluation display on learning media

To see the feasibility of learning Arabic vocabulary media through this Android application, researchers involved material validators and media validators. Material expert validation in this research was carried out by 2 validators, namely lecturers of the Faculty of Tarbiyah and teacher training UIN Raden Intan Lampung. The following is a table of individual test evaluations by learning material experts.

No	Aspects	The Number of Each Aspect	Max Score	%	Criterion
	Learning Design				
1.	Clarity of learning objectives	16	20	80	Proper
2.	Relevance of the material	87	100	87	Very Worth It
3.	Evaluation/practice questions	48	60	80	Proper
Sum					151
Score Maximum					180
Present					83,89
Criterion					Very Worth It

According to material experts, Android-based multimedia products in Arabic vocabulary learning developed after improvement are good/feasible to be applied or used in learning. a) The material made has been systematically in accordance with core competencies, basic competencies, and indicators of competency achievement, which previously there were several revisions. b) Some of the images used to clarify the material have been improved to be clearer and more precise. c) Some vocabulary was replaced well, clearly, and precisely; in essence, writing and *font used* traditional Arabic, which previously used *Time New Roman.*

Furthermore, validation by media experts in this study was carried out by two validators, namely Ahmad Nur Mizan, S. Hum., M. A. and Dr. H. Agus Jatmiko, M. Pd, a lecturer at the Faculty of Tarbiyah and Teacher Training UIN Raden Intan Lampung. Evaluation of individual tests by media experts along with a table of individual test evaluation results by media experts.

No	Aspects	The Number of Each Aspect	Max Score	%	Criterion
1.	Software Engineering	53	60	88,33	Very Worth It
2.	Visual Communication	92	120	76,67	Proper
Sum					145
Max Score					180
Present criteria					80,56
					Proper

According to media experts, multimedia developed after improvement is good/feasible to be applied in learning. a) The initial multimedia display has been improved according to the advice of media experts by improving the color of the initial display cover that is more attractive and clearly visible. b) *The font color* for the material was changed to black which was previously blue. c) *The font* was changed to *traditional Arabic*, which was previously *Times New Roman*.

Then, the students' response to Android-based Arabic vocabulary learning media. The first step in taking data from this student questionnaire began with a small-scale test and continued with a large-scale test to further explore the results of product attractiveness and feasibility.

Small-Scale Product Trials

The following are the results of small-scale product trials obtained based on the results of student response sheets totaling 20 students, taken from 10 students of grade V MIN 2 South Lampung and ten students of grade V MI Ma'arif NU South Lampung, giving responses that Android-based interactive multimedia is very interesting and suitable for use in the learning process, with revisions, to add pictures in clarifying the content of the material. The results of the student assessment can be seen in the following table:

No	Student Code	Number of Aspect Assessments	Present	Criterion
1.	R1	51	72,9	Proper
2.	R2	62	88,6	Very Worth It
3.	R3	58	82,9	Very Worth It
4.	R4	66	94,3	Very Worth It
5.	R5	59	84,3	Very Worth It

6.	R6	61	87,1	Very Worth It
7.	R7	63	90	Very Worth It
8.	R8	64	91,4	Very Worth It
9.	R9	50	71,4	Proper
10.	R10	64	91,4	Very Worth It
11.	R11	57	81,4	Very Worth It
12.	R12	63	90	Very Worth It
13.	R13	60	85,7	Very Worth It
14.	R14	62	88,6	Very Worth It
15.	R15	68	97,1	Very Worth It
16.	R16	62	88,6	Very Worth It
17.	R17	59	84,3	Very Worth It
18.	R18	55	78,6	Proper
19.	R19	58	82,9	Very Worth It
20.	R20	59	84,3	Very Worth It
Sum		**1201**	**85,78%**	**Very Worth It**

Based on the recapitulation results of the student response questionnaire results in the table above, it can be concluded that the overall results of small-scale trials taken by ten respondents from class V MIN 2 South Lampung and ten respondents from class V MI Ma'arif NU South Lampung for product trials, obtained a percentage result of 85.78% with the criteria of "very feasible". That way, the products developed by researchers are able or feasible to be used as a support for the learning process in learning Arabic vocabulary in class V MIN 2 South Lampung and class V MI Ma'arif NU South Lampung.

Large-Scale Product Trials

Based on the results of student response sheets totaling 44 students, 23 students from class V MIN 2 South Lampung and 21 students from class V MI Ma'arif NU South Lampung, gave responses that Android-based interactive multimedia is very interesting and suitable for use in the learning process, with revisions, to add pictures in clarifying the content of the material. The results of the student assessment can be seen in the following table:

No	Student Code	Number of Aspect Assessments	Present	Criterion
1.	R1	66	94,29	Very Worth It
2.	R2	66	94,29	Very Worth It
3.	R3	62	88,57	Very Worth It
4.	R4	70	100	Very Worth It
5.	R5	62	88,57	Very Worth It
6.	R6	65	92,86	Very Worth It

7.	R7	63	90	Very Worth It
8.	R8	65	92,86	Very Worth It
9.	R9	66	94,29	Very Worth It
10.	R10	68	97,14	Very Worth It
11.	R11	51	72,86	Proper
12.	R12	70	100	Very Worth It
13.	R13	62	88,57	Very Worth It
14.	R14	65	92,86	Very Worth It
15.	R15	56	80	Proper
16.	R16	68	97,14	Very Worth It
17.	R17	61	87,14	Very Worth It
18.	R18	70	100	Very Worth It
19.	R19	66	94,29	Very Worth It
20.	R20	58	82,86	Very Worth It
21.	R21	67	95,71	Very Worth It
22.	R22	65	92,86	Very Worth It
23.	R23	67	95,71	Very Worth It
24.	R24	63	90	Very Worth It
25.	R25	68	97,14	Very Worth It
26.	R26	60	85,71	Very Worth It
27.	R27	61	87,14	Very Worth It
28.	R28	65	92,86	Very Worth It
29.	R29	62	88,57	Very Worth It
30.	R30	67	95,71	Very Worth It
31.	R31	59	84,29	Very Worth It
32.	R32	61	87,14	Very Worth It
33.	R33	58	82,86	Very Worth It
34.	R34	67	95,71	Very Worth It
35.	R35	65	92,86	Very Worth It
36.	R36	65	92,86	Very Worth It
37.	R37	70	100	Very Worth It
38.	R38	66	94,29	Very Worth It
39.	R39	62	88,57	Very Worth It
40.	R40	65	92,86	Very Worth It
41.	R41	55	78,57	Proper
42.	R42	65	92,86	Very Worth It
43.	R43	66	94,29	Very Worth It
44.	R44	60	85,71	Very Worth It
Sum		**2809**	**90,72%**	**Very Worth It**

Based on the recapitulation results of the student response questionnaire results in the table above, it can be concluded that the overall results of large-scale trials taken by 23 respondents from class V MIN 2 South Lampung and 21 respondents from class V MI Ma'arif NU South Lampung for product trials, obtained a percentage result of 90.72% with the criteria of "very feasible". That way, the products developed by researchers are able or feasible to be used as a

support for the learning process in learning Arabic vocabulary in class V MIN 2 South Lampung and class V MI Ma'arif NU South Lampung.

So, the update that the researchers did with previous researchers is a product that is packaged in the form of an Android-based interactive multimedia application in learning Arabic vocabulary so that students can learn it anywhere and anytime, both independently and in the classroom. Next explain vocabulary material that is poorly understood by students. As for if students want to repeat learning at home or anywhere, students can see Arabic vocabulary explanation material in each Android and learn to solve vocabulary matching questions with appropriate images and multiple choice that have been presented in the Android-based interactive multimedia.

CONCLUSION

Based on the results of research on the development of Android-based interactive multimedia in learning Arabic vocabulary carried out, it can be concluded that for the feasibility of Android-based interactive multimedia. Based on the assessment by the expert team, obtained a percentage score of 80.56% by media experts, 83.89% by material experts. Android-based interactive multimedia in learning Arabic vocabulary is suitable for use as a learning medium. With a recapitulation of student response questionnaires on a small scale, a percentage result of 85.78% was obtained with the criteria of "very feasible", on a large scale a percentage result of 90.72% was obtained with the criteria of "very feasible". The researcher suggested to the next researcher that Android-based interactive multimedia in learning Arabic vocabulary can be used by students as an independent learning resource that can be accessed anytime and anywhere and can be used by teachers to deliver Arabic vocabulary material effectively and efficiently.

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