

APPLICATION ARABIC LEARNING BASED ON MULTIMEDIA USING ASYNCHRONOUS METHOD

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Abstract

Every school has different featured programs but it has similar goals to educate the nation based on faith and piety on Quran and As-Sunnah. Daily conversation will often be used between the school and the student's parents, both basic and later. To obtain maximum results in the learning process, it is necessary to use Arabic communication between the parents and the students outside the school. There are Parents difficulties to speak Arabic daily conversation to support the teaching and learning process at school and home. There is a deadlock between parents and students due to parents' lack of understanding in Arabic. How to helping the realization of the Arabic learning process given to students outside the school environment by repeating the learning process with parents with multimedia application tools and building Arabic learning applications by using asynchronous based multimedia applications.

1.0 INTRODUCTION

Considering Muslims are the majority religion in Indonesia, there are so many Islamic schools in every region, either it's named by Islamic elementary school or integrated Islamic elementary school[1]. Every school has different featured programs but it has similar goals to educate the nation based on faith and piety on Quran and As-Sunnah[2]. Some of the established Islamic schools have school curricula that applied to strengthen not only tahfidz, tahsin, character building, civilized learning, but also the use of Arabic language.

Featured curriculum that implemented by Integrated Elementary Islamic School is the ability to use the Arabic language for its students who are introduced from grade 1 (one), so it needs a good and continuous cooperation between the schools or foundations with parents. This daily conversation will often be used between the school and the student's parents, both basic and later. To obtain maximum results in the learning process, it is necessary to use Arabic communication between the parents and the students outside the school, so that the knowledge gained from the school will be practiced repeatedly in the neighborhood, especially the family environment. Due to the reason above, many parents of students still have not had the basic skills regarding Arabic daily conversation.

Based on research that has been done using blended learning in multimedia states that learning provides more benefits to students in terms of achievement compared to conventional face-to-face[3]. Other research states that with web-based multimedia learning helps students understand the material and also provides better motivation [4].

Previous research, which has been done for multimedia applications, is only in the form of hardcodes, so that educators cannot add material directly and it cause the teaching material in multimedia applications does not develop. Suggestion given in previous studies is to develop learning of combining basic word by word[5] It can be done if the addition of learning is done dynamically. Current developmental technology can make possibly for parents to resolve the problem by doing the learning anywhere and anytime[6] in order to support the vision and mission of the school.

Refers to the background of the problems in this study, the problems can be identified as follows (1) There are Parents difficulties to speak Arabic daily conversation to support the teaching and learning process at school and home; (2)There is a deadlock between parents and students due to parents' lack of understanding in Arabic; (3)The character of learning material is static due to the use of hardcodes in making multimedia applications.

Considering the small number of Arabic language learning uses multimedia, this study raises Arabic language learning using Android-based multimedia to make it easier for parents to provide Arabic learning assistance to their children. Based on the identification of the problem, the purpose of this study is: (1)Helping the realization of the Arabic learning process given to students outside the school environment by repeating the learning process with parents with multimedia application tools; (2)Building Arabic learning applications by using asynchronous based multimedia applications.

The benefits of this research are expected: (a)Adding understanding and experience in using multimedia as a teaching medium for parents of SDIT AL-FATIH students. (b) Producing applications that can help learning daily conversations using Arabic dynamically.

2.0 THEORETICAL

2.1. Multimedia

According to Ellis that multimedia can be defined as a computer-based product that enhances information communication by increasing two or more elements of text, senior graphics, sound, animation, video, or interactivity[7], as shown in table 1 the results of using multimedia and before the use of multimedia. According to Ratnasari that multimedia applications must support all content access and communicate with native speakers or other users to support learning[8].

Tabel 1 Results of using multimedia and before the use of multimedia

Statement	Average number of correct answers		P values	Statistically Significant
	Pre-test	Post-test		
Factual questions	3.473684	6.631579	0.00000122	Yes
Concept questions	2.526316	4.578947	0.00039724	Yes
Combined score	6	11.21053	0.00001336	Yes

Based on Wijaya's research that almost 80% of 26 respondents agreed that multimedia is able to attract students' attention and interest in anticipating the learning process, encouraging active students to understand learning and the images and animations presented can increase student enthusiasm in understanding basic level vocabulary[9]. Table 2 presents the results of the questionnaire using ADDIE Method about multimedia learning [9].

Tabel 2 ADDIE Method about multimedia learning

Statement	Index Formula % = Total Score/ 130 * 100	Result	
		%	Category
Multimedia is able to make students happy in following the basic level English vocabulary learning process.	114	87.69	Strongly Agree
Multimedia methods are able to make students enthusiastic in answering lesson questions.	104	80.00	Strongly Agree
Multimedia can facilitate students in adding basic level English vocabulary	112	86.15	Strongly Agree
Learning vocabulary through multimedia is considered less useful for	71	54.62	Neutral

students.			
Multimedia learning methods allow students to learn independently.	106	81.54	Strongly Agree
Learning English vocabulary through multimedia makes students get bored quickly	64	49.23	Neutral
Multimedia is able to help elementary level students in achieving English vocabulary learning competencies.	97	74.62	Agree
In your opinion, elementary level students need to be given a multimedia method as an English vocabulary learning tool	106	81.54	Strongly Agree
Students easily learn well about what the teacher explains when using multimedia rather than the lecture method.	100	76.92	Agree
Display of images and colors in the application adds enthusiasm for students to learn	111	85.38	Strongly Agree

2.2. Android

Android Studio has several built-in features that really help developers to maximize the process of making applications such as Gradle, Code Completion, and integrated with several services from Google such as Firebase. In addition to the process of making multimedia, the use of Android can also be used as a business process or procedure using the RSA asymmetric cryptographic algorithm and the AES asymmetric cryptographic algorithm for file security attachment with a very large size when sent via social networking applications. The entire implementation of the RSA asymmetric cryptography algorithm and AES asymmetric cryptography use the "javax.crypto" library utilization from the java development environment on the Android system. All of them use class relations and methods that can be implemented successfully and without problems during the development of system application features[10].

2.3. Asynchronous Method

Based on the results of research that has been done that based on a survey that has been done it was found that 82.33% of respondents liked learning with the asynchronous method, increasing in number by 22.33% when compared to before doing the method[11] as shown in table 3. In addition, other research that has been done states that 82% of students stated the asynchronous method was declared valid to be used for the learning method[12] as shown in table 4.

Tabel 3 Interactivity learning uses asynchronous

Statement	Score	%	Statistically Significant
User to system	20.34	84.7%	Very High
User to user	9.84	82%	Very High
User to document	12.63	78.9%	High

Tabel 4 Results of using multimedia and before the use of multimedia

Statement	acquisition score / maximum score	%	Statistically
Design Expert	28 / 35	80 %	Valid
Media Expert	86 / 90	96 %	Valid
Material Expert	53 / 65	82 %	Valid
Field trials	1064 / 1300	82 %	Valid

3.0 METHODOLOGY

Data collection methods used in this study are:

1. Observation method. Observation or direct observation of the research object. Observation technique is done by structured observation by preparing a list of data requirements and data sources
2. Literature study methods. Data collection methods are obtained by studying, researching, and reading books, information from the internet, journals, theses, theses related to Arabic applications and daily conversations.

As shown in Figure 1 is a display of research methodology in solving problems

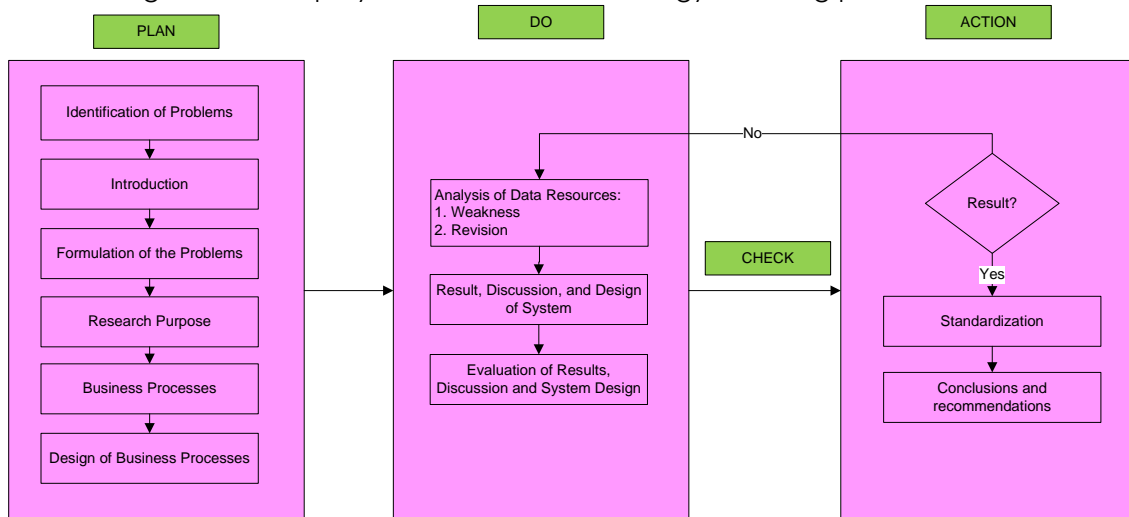


Figure 1 Research Methodology

In this process several steps will be carried out in the research on figure 1, including:

1. Planning Phase
 - a. At this stage the researcher identified the problems that arose during the Arabic learning process at home, because parents did not understand the Arabic language material taught by the school to students.
 - b. After that determine the formulation of problems that can be used in order to facilitate learning Arabic to students when at home, and determine the boundaries of what problems will be developed to solve the problems that have been mentioned.
 - c. After that determine the purpose of this study based on the problems that have been identified.
 - d. Planning a visit to SDIT to conduct interviews with the students and also students, and see the teaching and learning process for Arabic lessons followed by data retrieval in the form of sound recordings and videos.
 - e. After the successful process in point d, then design for the ongoing process on SDIT AL-FATIH
2. Activity Stages
 - a. Conduct a visit to SDIT to conduct interviews with the students and also students, and see the teaching and learning process for Arabic lessons followed by data retrieval in the form of sound recordings and videos.
 - b. After the data is retrieved, then check the sound recordings and also the video whether it is as expected or not so that it can later be used to be embedded in the multimedia application that will be developed.
3. Checking Stages

Ensure that the captured data is correct and can be utilized in an Android-based multimedia application.
4. Stages of Action
 - a. After the documents have been collected, then do the application coding in accordance with the designs that have been made previously at the planning stage.
 - b. Test the application internally to ensure that this application can be run both by the teacher through the web page and also by the user through the android application.
 - c. Validate the application to ensure the suitability of this teaching material with an asynchronous model.

4.0 RESULTANTS AND DISCUSSION

4.1. Implementation

Here is a view of implementation of the results of design and coding in applications that have been made for teachers, and we call that is admin interface. Once the user opens the application by entering a user name and password, the screen dashboard will automatically display main menu to entry activity of learning and will be shown in Figure 2.

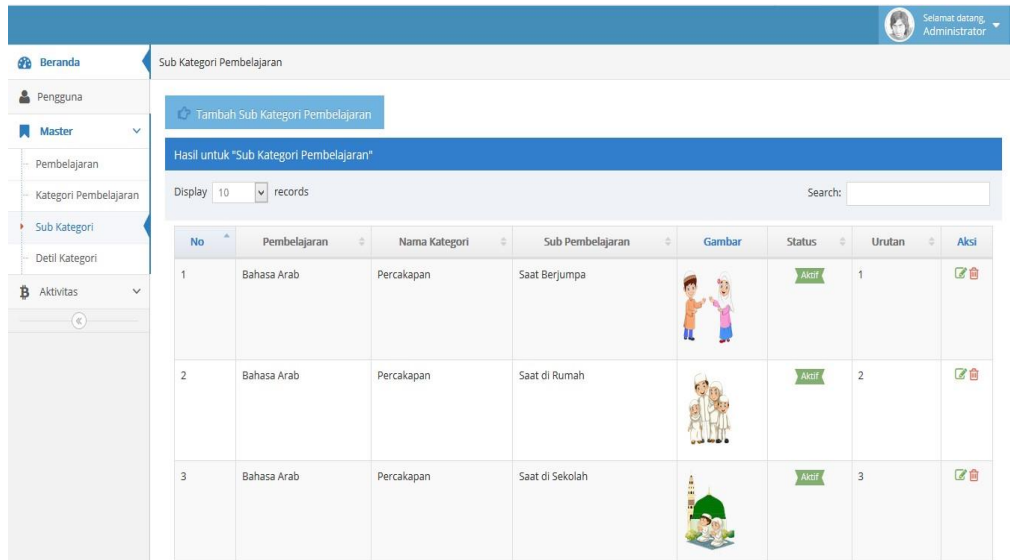
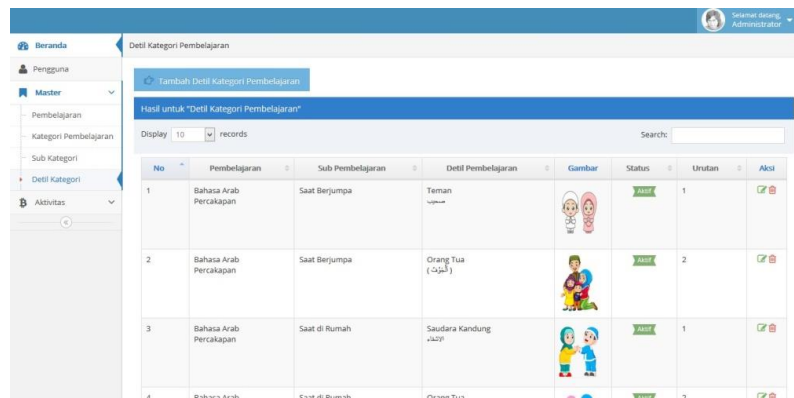
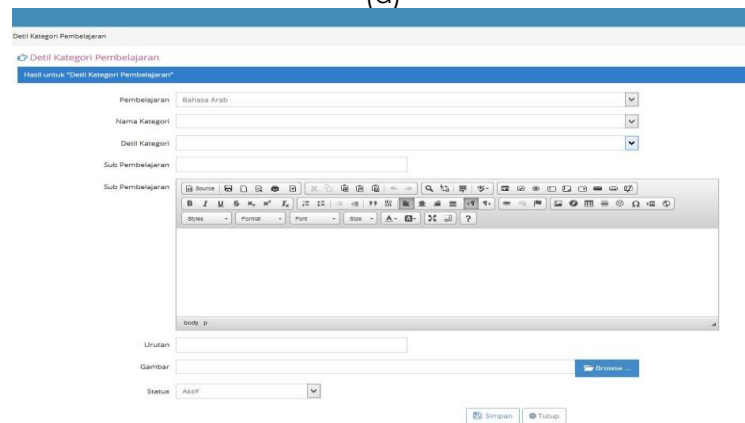


Figure 2 Main menu application

To add learning material, the teacher can add to the learning detail menu as shown in Figures 3(a) and 3(b), so students can see the learning using their Android mobile as shown in Figure 4.



(a)



(b)

Figure 3. Adding arabic learning form

the learning applications used by students and parents are made very easy to learn, so that the learning process and vision and mission of the school will be achieved. The application created has grouped Arabic learning based on the needs of the school such as conversation, vocabulary, Arabic intonation, etc. as shown in Figure 4.

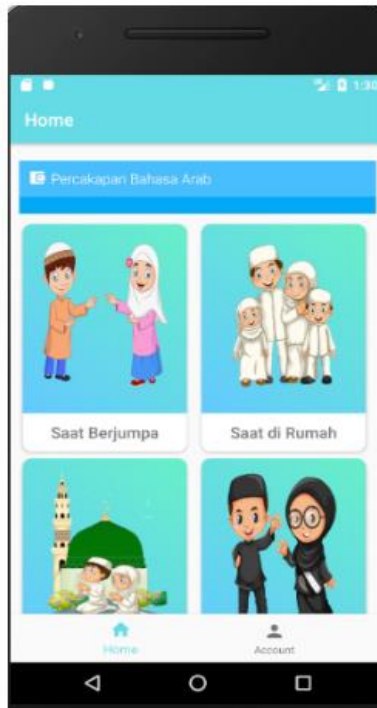


Figure 4. Arabic learning application with android

4.2. Testing

a. Black box testing

Black box testing is a test that is only carried out observing the results of execution through test data and functional checking of the software. We can only see the outer appearance, without knowing what's behind the black wrapper. Just like testing a black box, evaluating it only from the outside appearance, its functionality without knowing what really happened in the detail process, only knowing the input and output.

Tabel 5 Menu testing

Test Result			
Input Data	Is Expected	Observation	Validation
Learning button	Display the learning menu	Choose the study menu	Success
Exercise button	Display the exercise menu	Choose the exercise menu	Success
About button	Display information	Information appears	Success
Sound button	Turn on or turn off backsound	Sound on or off	Success
Exit button	Press "x" button	Quit of application	Success

Tabel 6 Learning testing

Test Result			
Input Data	Is Expected	Observation	Validation
Daily conversation button	Display daily conversation	Press one button conversation, and sound is on	Success
Conversation when meet up button	Display conversation when meet up	Press one button conversation, and sound is on	Success
Conversation when separating button	Display conversation when separating	Press one button conversation, and sound is on	Success
back button	Back to menu before	Display menu before	Success

b. White box testing

The test is not carried out on the whole application intact, but is carried out on applications that are run as sample tests.

White box testing for Learing

The flow of the learning menu is that if we press one of the conversation buttons, a reading will appear.

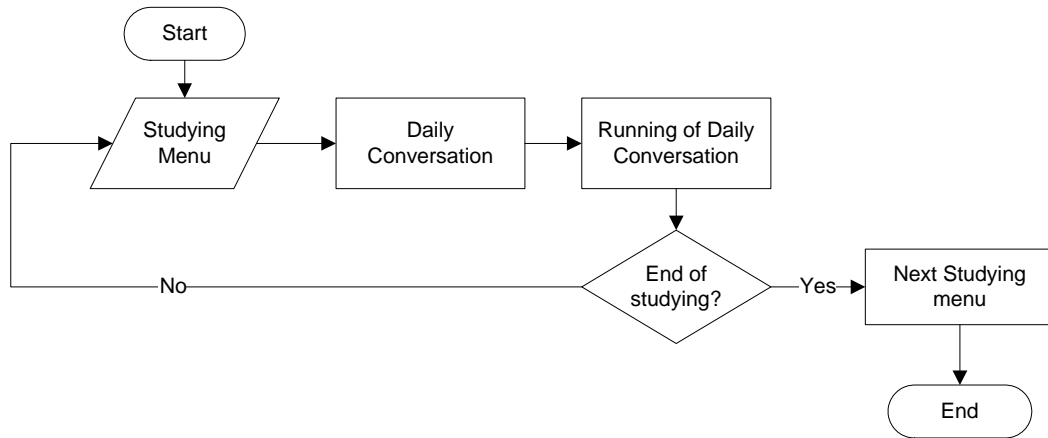


Figure 5 Flow chart of learning conversation



Figure 6 Flow chart of learning conversation

Cyclomatic complexity from figure 2 can be obtained by the equation 1

$V(G) = (E - N) + 2$	$V(G)$ = Number of regions E = Number of sides is determined by the arrow N = Number of flow graph vertices is determined by a circle
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(1)

So that we get the result is $V(G) = (7 - 7) + 2 = 2$

$V(G) < 10 \rightarrow$ its cyclomatic complexity.

Data sets generated from independent paths are as follows:

- a) 1 – 2 – 3 – 4 – 5 – 6 – 7
- b) 1 – 2 – 3 – 4 – 5 – 2

5.0 CONCLUSION

5.1. Conclusion

Asynchronous learning applications are expected to be a learning medium for children and also parents. From the description above, the following conclusions can be drawn: (1) Teachers can add daily conversations in accordance with the curriculum in force in the school; (2) This program can help parents find out daily Arabic conversations; (3) This program provides exercises that can measure the level of user understanding of Arabic conversation;

(4) This application can be run for android versions version 4.0 (Jelly Bean) and above; (5) From the questionnaire distributed to 30 (thirty) respondents who were parents of students from various professions, the results were summarized as follows: a) 53.3% of respondents felt helped by the learning application using Android. b) As many as 60% of respondents claimed to get new knowledge with the application of learning c) As many as 60% of routine respondents can communicate with their children

5.2. Suggestion

Based on an evaluation of the process and results of this application, the suggestions for further application development are as follows. (1) It is hoped that this program will be developed by providing knowledge for even higher conversation; (2) This application was developed not only based on Android but can be developed for IOS.

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