Interactive Learning Application (Hijaiyah Letters) for Early Age Children

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Keywords	Abstract.
Interactive, Al-Qur'an,learning	Interactive learning media is needed to encourage desire students in studying a science. In the learning process, children also learn about the science of reading the Koran. The use of technology is needed to create learning media that can support the learning process. One learning media that can support the learning and teaching process is an interactive learning application. The Hijaiyah Letter Interactive Learning Application is an Android-based learning application created with the aim of making it easier for children to learn how to read the Al-Qur'an via cellphone. This application aims to make it easier for children to learn the Koran and make the learning process more enjoyable pleasant.

1. INTRODUCTION

The learning process cannot be separated from media that supports the learning and teaching process to become easier, more effective and easier to understand. Learning media is created so that students can more easily understand the knowledge conveyed by teachers or instructors and also make the learning process better [3]. Technology which is currently increasingly developing can be used to create a more practical and effective learning media in the field of education. By utilizing existing technology, learning activities can be carried out anywhere and at any time. With learning media that is more active than existing technological developments, learning can be more enjoyable so that students will have more enthusiasm for learning [5].

The learning process can now be done face to face or online. In online learning, both students and teachers will utilize supporting media such as virtual face-to-face meeting applications, e-Learning learning media, educational game applications, and other applications that can support the online learning process from anywhere and at any time. Education can be complete if it combines several aspects, these aspects are intellectual, spiritual and social education. The balance of these three aspects is intended to shape teachers and students to become better [4]

The Koran was revealed to the Prophet Muhammad SAW through the intercession of the angel Gabriel not only as a life guide, but also as a guide for Muslims who will lead them to the right path. Apart from the importance of studying formal education, we must make a habit of reading the Qur'an in order to become useful and noble human beings, as well as improving our welfare in fear of Allah SWT [2]. Therefore, it is important to have learning to learn about the Qur'an and how to read Al-Qu'an.

Based on the importance of learning to read the Al-Qur'an, the author created learning media in the form of 'Interactive Learning Applications at MI (Hijaiyah Letters)'. With this application, it is hoped that the learning process will be more effective, interactive and fun even though it is done online. This application is made based on Android so it is hoped that it will make it easier for students to learn how to read the Koran from anywhere. Making this application uses a system design method that utilizes an object-oriented approach with the Unified Modeling Language (UML). The UML model is often used to visualize, understand, and communicate the structure and flow of a system. UML activity diagrams are often used to outline and visualize system use cases by system users [1]

2. METHOD

The methodology that will be applied in this research is:
System Requirements Analysis
System requirements analysis is needed to determine the types of requirements and processes that will run on the application to be created (j4). The author will carry out an analysis of functional and non-functional requirements.

Functional Requirements

The application only has one user role, namely student. Students are users who can access all menus in the application. Students can do: Learn how to read hijaiyah, harokat and tanwin letters, Doing quizzes.

Non-Functional Requirements
a. Software Required In building this application the author used several software including:
1. Lucidchart
2. Android Studio
3. BlueStacks
4. Programming Language (JavaScript)
b. Hardware used to build the application:
1. Laptops
2. Android cellphone
c. Required data:
1. Hijaiyah letter data
2. Data on harokat fathah, kasroh, dhomah, fathah tain, karoh tain, and dhomah tain.
3. Audio: feature voice recording, pronunciation voice recording, background music
d. Features created:
1. Study
2. Quiz
3. Learn Hijaiyah
4. Learn Harokat: fathah, kasroh, dhomah
5. Learn Tanwin: fathah tain, kasroh tain, dhomah tain
6. Guess Hijaiyah
7. Guess Harokat
8. Guess Tanwin

3.   RESULTS AND DISCUSSION

Users can access the 'Interactive Learning Application at MI (Hijaiyah Letters)' on an Android cellphone. Users are required to download the application first in order to access the application. To access the user application, a sufficient internet network is needed to support the application to run smoothly.

Gambar 1. Main page display.

The 'Interactive Learning Application at MI (Hijaiyah Letters)' produces 2 main features, namely learning and quizzes. The learning feature itself has 3 menus, namely learning hijaiyah, learning harokat (fathah, kasroh, and dhomah), and learning tanwin (fathah tain, kasroh tain, and dhomah tain). When the user selects the desired learning menu, the user can select the available hijaiyah letters to find out the pronunciation of that letter via audio that appears after selecting the related letter.

Gambar 2. Display the learning menu page.

Gambar 3. Display the hijaiyah learning menu page.

Gambar 4. Harokat learning menu page display.

Gambar 5. Display of the learning menu page for applying harokat to hijaiyah letters.


Gambar 6. Tanwin learning menu page display.

Gambar 7. Display of the learning menu page for applying tanwin to hijaiyah letters.

There is also a quiz menu in this application. There are three menu options on the quiz menu, namely guess hijaiyah, guess harokat, and guess tanwin. Users are required to select one of the available quiz menus and answer the questions provided. The questions will appear one by one and the user can choose the right answer. If the user correctly chooses the answer, the user's score will be added by 10 points. If the user chooses the wrong answer, the user's score will be reduced by 5 points. Users will increase one level on the quiz if they have received a score increase of 100 points.
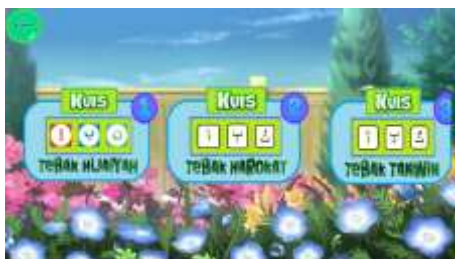
Gambar 8. Quiz menu page display.

Gambar 9. Display of the quiz question page

Gambar 10. Display the correct answer page.

Gambar 11. Wrong answer page display.

Gambar 12. Page views level up.

Black Box Testing

After the application has been built, the next step is user application testing. The application testing this time is calculated using the Black Box testing method. In this test, the author aims to find out that the functions of the application being built are running properly.

a.   Home Page Testing

Tabel 1 Black Box Testing on the main page.

No	Case	Case Overview	Expected results	Test results	Conclusion
1.	Students choose the learning menu		The application shows a menu for learning hijaiyah, harokat and tanwin.		Valid
2.	Student select the quiz menu		The application shows a quiz menu for guessing hijaiyah, guessing harokat, and guessing tanwin.		Valid

b.   Learning Menu Testing

Tabel 2. Black Box Testing on the learning menu.

No	Case	Case Overview	Expected results	Test results	Conclusion
1.	Students choose the hijaiyah menu		The application shows a page of hijaiyah letters with the pronunciation of the hijaiyah letters when students choose one of the letters.		Valid

No	Case	Case Overview	Expected results	Test results	Conclusion
2.	Students choose the harokat menu		The application shows a page of harokat fathah, kasroh and dhomah menu options.		Valid
3.	Students choose the fathah/kasroh/dhomah menu		The application shows a page of hijaiyah letters with the application of selected harokat accompanied by the pronunciation of the hijaiyah letters when students choose one of the letters.		Valid
4.	Students choose the tanwin menu.		The application shows the tanwin menu options page for fathah tain, kasroh tain, and dhomah tain.		Valid
5.	Students choose the fathah tain/ kasroh tain/ dhomah tain menu.		The application shows a page of hijaiyah letters with the application of selected tanwin accompanied by the pronunciation of the hijaiyah letters when students choose one of the letters.		Valid

c. Quiz Menu Testing

Tabel 3. Black Box Testing on the quiz menu.

No	Case	Case Overview	Expected results	Test results	Conclusion
1.	The application shows a quiz menu to guess hijaiyah/ guess harokat/ / guess tanwin.		Students go to the quiz page with one hijaiyah letter question and students must choose the correct answer option.		Valid

No	Case	Case Overview	Expected results	Test results	Conclusion
2.	Students choose the correct answer option		There will be a notification in the form of a 'Correct' sound. Add 10 points to your score and move on to the next question.		Valid
3.	Students choose the wrong answer option		There will be a notification in the form of a 'Well Wrong' sound. Deduct the score by 5 points and move on to the next question.		Valid
4.	Students get an additional 100 points to the score		Students receive an additional lever of 1 level.		Valid

4.   CONCLUSION

The Interactive Learning Application at MI (Hijaiyah Letters) is an Android-based application created with the aim of creating learning media for reading the Al-Qur'an that is easy to understand and fun, especially for children. By creating this application, it is hoped that students can learn from anywhere using their mobile phones. This application still needs to be developed to add new features to make learning more effective. It is hoped that for future similar research, the author can add features for teachers to be able to add new material or quizzes to the application.

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