

THE DEVELOPMENT OF LEARNING APPLICATION TO WRITE THE QUR'AN BASED ON MOBILE LEARNING

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Abstract: Writing is a language activity for pouring ideas or concepts. We can write in the form of character or number a systematic way so that we can understand the subject more accessible. Writing is one of the essential abilities in the learning process, besides the abilities to read and to memorize. Learning and understanding the Qur'an is the main exercises in Qur'an subject. However, with the development of technology such as smartphones, writing habits can shift from book to device. That is due to the convenience and practicality offered by smartphones such as the writing can be written repeatedly, and can be done anywhere and anytime compared to traditional writing. and the result is their ability to write with their hands is lower than their reading ability. We can see in the Qur'anic studying, student writing ability is less than the ability to read and memorize. In this research mobile learning applications used as one of the solutions to improve writing skills, because the benefits of this mobile learning application. The smartphone potentially to enhance as the complement of writing subject. The positive impact of writing Al-Qur'an character using smartphone is that we can calculate the similarity. This method reduce the teacher task in evaluate of student activity.

Keywords: Al-Qur'an, Mobile Learning, Writing

1. INTRODUCTION

Writing is an important part of the learning process to pour ideas or thought along to reflect existing knowledge and experiences with written language [1][2]. However, the habit of writing during learning began to be replaced with digital writing or typing. The caused is the development of technology such as smartphones that make most students can not be separated from their smartphones. Even the research reveals that the level of student addiction to smartphones is higher than internet addiction [3]. Most students assume that writing is performed at a particular condition only, and many of them prefer to type their essays compared to writing it [4]. Though students can remember better when writing by hand because most mental and verbal processes that involve emotions thinking, and speaking are used in writing while writing digitally can negatively affect their performance in doing a task [5], [6].

The level of writing the Qur'an is also relatively low because the Arabic writing system that starts from right to the left caused difficulties for students who are familiar with the Latin writing system [7], [8]. In the case of the practice of writing the Qur'an one of the common methods that often used is by *imla'i/ imlak*, namely writing letters according to their correct position in words to prevent the occurrence misconception of meaning [9], [10]. Therefore, a

specific exercise book is needed to apply the method, "Follow the Line" is a method that lately popular and resembles the method of imitation because students are only asked to write the Qur'an merely following the lines or patterns. However, exercise books like this are fairly wasteful and not environmentally friendly because they have to print sheets multiple times. Aside from that, other things become an obstacle, such as the scoring from the exercise result is still manual, so the score is not too accurate and time-consuming. Also, students usually still have to be accompanied by a person who understands about writing the Qur'an.

Nowadays, the use of mobile learning is one of the learning support that can be accessed almost anywhere and anytime [11] as well as cellular technology that offers to learn to all ages of the students without being bound by place and time [12]. It showed that students are more willing to learn with cellular technology [13]. Also, they can improve their learning achievement and motivation because the information from mobile learning seems more attractive to learning, not to mention learning can be done both formally and informally [14]–[16]. This offers much broader educational potential than just accessing resources [15] because the use of mobile learning can help cost efficiency, instant portability, sensitivity context, better use of idle time, ease of organizing dates, and certainly flexibility and convenience [11][17]. If concluded,

mobile learning is one of cellular technology as a medium to help to learn both formally and informally that can be accessed anywhere anytime. Therefore, we developed a mobile application for learning that can display writing on verses in the Qur'an. We also added features so that students can write by following the letter line only. Then, the results that obtained from the accuracy will display in the form of a percentage. The advantages of developing this application are for learning to write numbers and letters. This can be applied to writing lessons in the first year of K-12 students, especially for lessons to introduce numbers and Latin writing.

2. APPLICATION DESIGN

We developed the application of the mobile learning module and name it "Stylus-Q" it is easy for people to remember. The main purpose of developing this application is to assist users to learn writing the Qur'an and at once build people's affection to the Qur'an. We designed this using an Android-based application because it will use the current technology to improve their efficiency [18]. Moreover, it can do anytime, anywhere.

This application was developed using CourseLab software as an implementation of learning media, HTML5 and JavaScript as a programming language, and PhoneGap as a mobile application build then the results of this combination are APK files that can run on smartphones.

In this application, we design a system architecture first to describes the structure, interaction, and technology of computer system components [19] (Figure 1). After that, to meet the required requirements, we designed a system regarding how the process works in the student modules (Figure 2).

Figure 1 is an architectural design of the Stylus-Q application where the system is made using HTML5, JavaScript, CSS, and Resources which functions to make the program display structure, logic, and interactions that occur within the application system. After that, PhoneGap will convert and compile the module and enter the server. For student modules that use Stylus, the module will display data into the form of Input, Graphics, and Services in the mobile applications. The Input data carried data when user tries to write using Stylus-Q and sends it to the server, then the data in the Graphics category is to make system displays verses that user need to write along with the results of user's writing, and data that include in Services are all features that applied in the system. For the teacher module, the module will create a PhoneGap Native API with plug-ins in the form of media, network, file, notification, storage, and custom plug-ins. We also added an API of Whatsapp and Telegram in the teacher module for communication purposes.

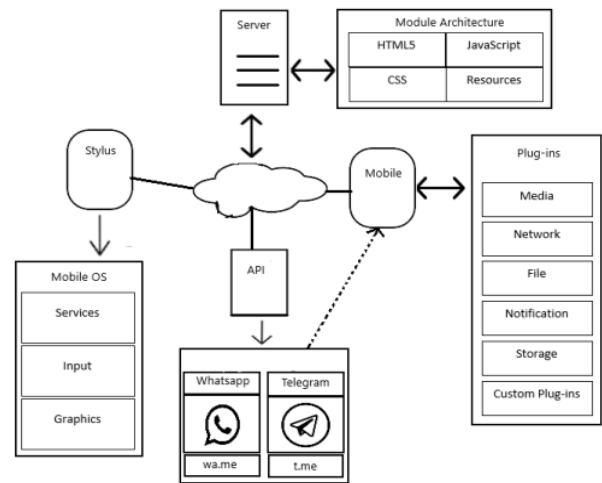


Figure 1. System Architecture

In Figure 2, illustrates how the process occurs in system design. The first stage is. Both the writing of the user and the original text converted into an array. Then, the system will combine and compare the accuracy of the array from the user with the original. Comparison in the form of a number of the user's writing accuracies with the original writing will determine the system to decide the next stage whether to go to the next verse or not. Finally, the score obtained by the total score divided by the number of verses worked on.

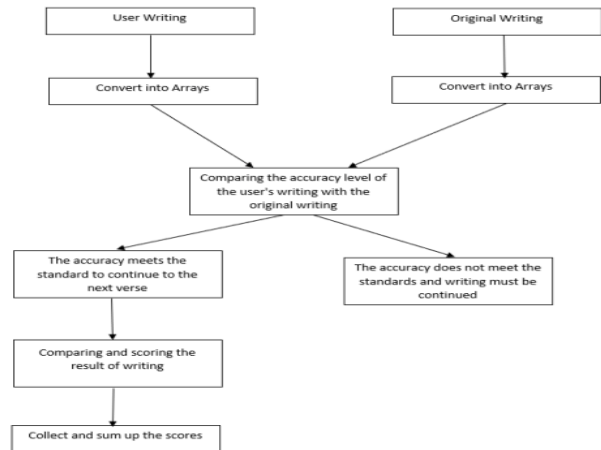


Figure 2. System Design

3. RESULTS AND DISCUSSION

In this paper, we develop two modules, the teacher module, and the student module. Figure 3 is a teacher module. This module intends to provide instructional support and increase functionality to increase interaction between teachers and students [20]. For this reason, this module functions to monitor and collect student grades after students have finished their work and the teacher can do feedback because there are links in the form of

Whatsapp and Telegram numbers to communicate directly with students privately.

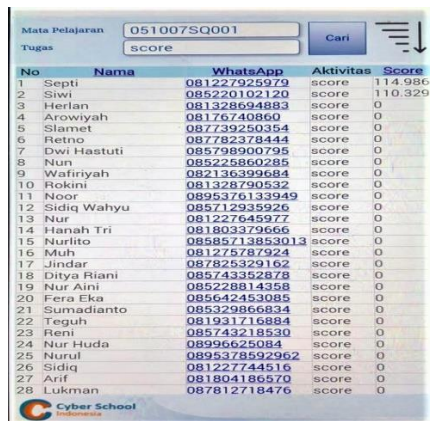


Figure 3. Teacher Module

This paper discusses student modules that function as a learning tool for writing Al-Quran using the Stylus. As shown in Figure 4, registered users need to log in to the application and perform the authentication process by input their username and password. When the login is successful, then the user will be directed to the learning page with a view and a section consisting of:

1. Section for learning to write according to the line. When the user writes, the user's writing is in red.
2. Refresh button to repeat writing.
3. Additional features for listening to the verses
4. Button to see the results of writing that had done. When the user sees the results of their writing, the user's writing is cyan, and the accuracy of the user's writing is red. Then a button appears to proceed to the next verse
5. Additional features for viewing translate of the current verse in the form of slide buttons.

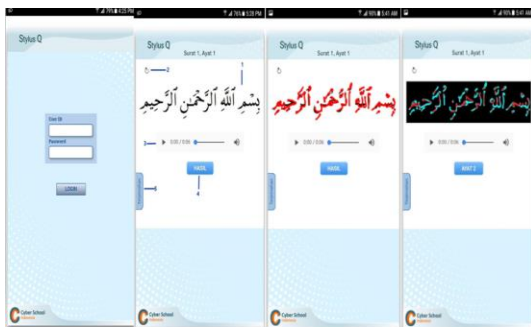


Figure 4

In Figure 5, the display that occurs when the user has not finished working on the verse. When the user has reached the last verses, the user can see the score

obtained from the results of the writing that had done. When the user presses the refresh button, the system will delete the user score data and repeat the learning from the beginning.

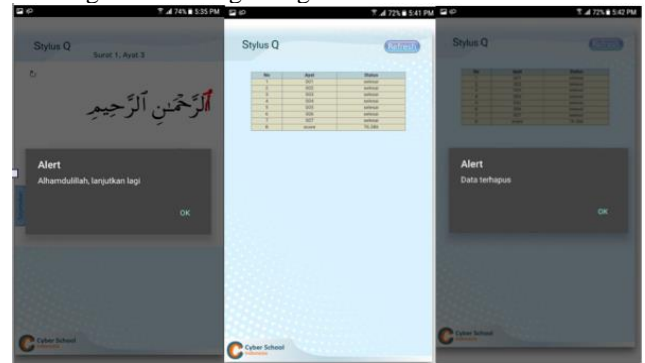


Figure 5

This application got tested on 30 users to find out whether the application has the potential as a tool to help teachers in learning and make students more active by utilizing the latest technology. We measure the standard of speed, accuracy, attraction, and writing interest. Before the test, 30 users are asked to write manually using paper and then write using Stylus-Q. This needs to do for comparing the method of writing with conventional and with the Stylus-Q application. The following table is the result that we collected with using a 1-5 scale:

Writing Method	Speed	Correction	Attraction	Interest
Manual	3	3	2	1
Stylus-Q	2	3.5	3.5	4

*1 = Very low 2 = Low 3 = Moderate 4 = High 5 = Very high

Figure 6. Exeriment Result

From the results above, it shows the speed in writing using Stylus-Q is low because most users still adjust to writing using applications. For correction, there are no significant differences in the result. However, both in the attraction and interest of use, there are quite significant in using the application.

During the test process, we received some pretty good feedback on the development of this application, including the enthusiasm of users to work on the next material, as well as the increasing number of using the app in learning to write, because so far, the user still write the verse using the paper

In the same event, we also get limitations from this application, such as the user's writing, sometimes not quite right so the user can not continue to the next verse. Also, the app can not jump or select particular verses, and sometimes applications can only be run on a certain OS.

CONCLUSIONS

The development of the Stylus-Q application based on mobile learning as a learning tool for writing the Qur'an proved to be able to increase the user's motivation to write, but the practice was still low. According to the results of the conversion that had performed, the data of writing speed using the application are classified as low because the user is not familiar with the stylus yet. For correction does not effect because it is only slightly different from the results of writing manually. For attraction of the application, it was showing quite high results. Similarly, with interest, the users show interest in writing with the app is high. Furthermore, this application still requires further development in the scoring system and application accessibility.

ACKNOWLEDGMENTS

This research is part of the research Growing Self Directed Learning (SDL) Using Gamma Feedback Learning Model (GFLM). We want to say many thank to the Ministry of Research, Technology and Higher Education of the Republic of Indonesia based on the Decree of the Director-General of Research and Development Strengthening number 7/E/KPT/2019. We are also grateful to the University of Muhammadiyah Yogyakarta for fully supporting this research by providing additional funding and research facilities.

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