

Model of Android Application-Assisted Arabic Letter Teaching Material Development to Improve Reading Skills and Interests for Beginners

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ABSTRACT

This research aims at (1) developing the android application-assisted Arabic letter learning materials to improve reading skills and interests for beginners; (2) describing the effect of the developed model on the Arabic *makhraj* reading skills among the students with high, moderate, low reading interests; and (3) testing the effectiveness of the developed learning materials in reading the Arabic letter *makhraj*. This research used the procedure of Borg and Gall with three modified phases: (1) preliminary research; (2) development; and (3) testing of the effectiveness of the developed learning material "*Pengenalan Huruf Arab Bagi Pemula*" assisted by android application of "*Huruf-huruf Arab dan Cara Membaca yang Benar Bagi Pemula*". The preliminary research found that (1) the Arabic letter learning still encountered some obstacles because the Quran Learning Centers (TPAs) did not utilize the new learning technology for the basic level of Arabic letter; (2) 70% of the learners in Junior Secondary School had not read the Quran correctly; and (3) 60% the adult Muslim communities in the research area could not read the holy Quran. This research is still progress, and therefore for the next phases, the following shall be solved: (1) development phase: the determination of population and samples of the basic level of Arabic learning at the TPAs, product design, and product testing, and (2) testing phase: the testing of the effectiveness of android application-assisted learning materials.

Keywords: Learning materials, Arabic, android application, reading interests for beginners

1. INTRODUCTION

The population of Indonesian Muslim was 76.70%. (BPS: 2010). Arabic becomes applied language in every activity of Islamic religious worships so that its followers are required to learn Arabic. It becomes the fact that Arabic is also required by Indonesian Moslems. The curriculum of Islamic education in Indonesia is organized by two (2) ministries: (1) the Ministry of Education and Culture (at the level of Primary to secondary education units, namely: kindergarten, primary school, junior secondary school, senior secondary school, vocational high school and (2) the Ministry of Religious Affairs (at the education unit level of *RA (Islamic Kindergarten)*, *MI (Islamic Primary School)*, *MTS (Islamic Junior Secondary School)*, *MA (Islamic Senior Secondary School)*, *Madrasah Diniyah (Informal Islamic School)*, *Taman Pendidikan Al-Qur'an (Quran Learning Center)*).

The results of observation and preliminary study show that (1) 70% of the learners at Junior Secondary School where the research was conducted had not read the *Quran* correctly; (2) 60% of the adult Moslem communities in the research area could not read the holy Quran; and (3) the Arabic letter learning still encountered some obstacles as the

TPAs had not utilized the new technology of learning. The main problem of Arabic learning skill and interest was the low mastery of Arabic letter *mahkraja*.

The result of literature study shows that learning materials circulating in the communities vary, but most of the *TPAs* use the books entitled *Buku Iqra jilid 1–6* as the learning materials. Their utilization is relied on their reasonable price, easiness to get, and the solidarity consensus among the *TPA* teachers, and the urgent need demands. In addition, the books has already received a written response from Minister of Religious Affairs of the Republic of Indonesia. Therefore, the use of *Buku Iqra* is as the learning material, which is only focused on quality but also which meets the demands of rapidly growing information and communication technology development in the Moslem communities today. There are many learning materials circulating in the Indonesian Moslem communities as presented in the table below:

Table 1.
Types and Forms of Existing Arabic Learning Materials

No	The Name of Learning Material / Application	Printed / Operating System Based	Web Address (Url)	Characteristics of Learning Material										
				Textbook	Online	Offline	Letter	Audio	Video	Interactive	Example	Written Tutorial	Makhray Picture	Evaluation & Remedial
1	<i>Buku Iqra jilid 1-6</i>	Printed	No	V	-	-	-	-	-	-	-	-	-	-
2	<i>Buku Kharimah Arabion</i>	Printed	No	V	-	-	-	-	-	-	-	-	-	-
3	Badar online	Windows, Web Blog	Yes	-	V	-	V	-	-	-	V	V	-	-
4	<i>Belajar Bahasa Arab</i>	Windows, blogspot	Yes	-	V	V	V	V	-	-	V	-	-	-
5	Arabic Alphabet Song	Windows, tube	you Yes	V	-	V	V	V	-	V	-	-	-	-

In addition to the literatures above, the result of field research conducted in the form of observation on the learning activities held by the *TPA* teachers can be described as follows: 1) The Arabic learning in the *TPA* was still teacher oriented, the learning was conventionally run, and a teacher (*ustadz*) demonstrated the pronunciation of each letter through facial expression, while pointing his finger to his face, then gave the example of releasing the letters repeatedly. 2) The teacher did not pay attention to the introduction of learning material and pronunciation of Arabic letters used; many teachers used the learning materials, which were less equipped with pictures of *makhraj* position, and had not utilized the ICT learning media as tools. 3) There were many *TPA* teachers who did not pay attention to test material of Arabic letter pronunciation so that the degree of difficulty in reading for every learner was still unknown. 4) The *TPA* teachers did not pay attention to other factors that could affect the abilities and skills in pronouncing/spelling Arabic letters so that the learning quality was not optimal.

Megbo et, al. (2015) claim that “Instructional materials as suggested by schools are materials of visual and audio-visual categorically which are aimed at helping learners

to understand the concepts, abstract and concrete ideas in the learning and learning environment.”

Scanlon, E et al (2015) state that the next major technology to change the face of education will be based on the widespread use of artificial intelligence (AI). Progress in AI has led to a deeper understanding of how to represent knowledge, to reason, and to describe procedural knowledge. Progress in cognitive science has led to a deeper understanding of how people think, solve problems, and learn. AI scientists use results from cognitive science to create software with more humanlike abilities, which can help students learn better.

Mlitwa & Wanyonyi (2015) suggest that mobile-learning is on this basis that an innovative integration of mobile-based learning management systems with the new mobile applications for an interactive m-Learning solution.

Holla, et. al (2012) state that android is a new, next-gen mobile operating system that runs on the Linux Kernel. Android Mobile Application Development is based on Java language codes, as it allows developers to write codes in the Java language. These codes can control mobile devices via Google-enabled Java libraries.

Purwanto et al., (2013) says that “Android is a software used in mobile device that consists of an operating system, middleware, and core application”. According to Satyaputra et al., (2014) android is “an operating system for smartphone and tablet”. The operating system can be illustrated as a bridge between device and user, so that the user can interact with his/her device and available applications on the device.

Middleton (2016) says that audio needs to be recognized as an integral medium capable of extending education’s formal and informal, virtual and physical learning spaces. It considers the diverse methods being used that enhance and redefine podcasting as a medium for student-centered active learning. The case study shows how audio created a rich learning space by meaningfully connecting tutors, students and those beyond the existing formal study space. The approaches used can be categorized as new types of learning activity, extended connected activity, relocated activity, and recorded, captured activity which promote learner replay and re-engagement.

Based on those definitions, we can conclude that android is software in mobile ICT device which is installed inside of it and also an operating system to turn on and operate that mobile ICT device.

Foundation of Al-Qur’an Translator Organizer (2006) states about the Guidelines of Arab-Latin Transliteration in accordance with Joint Decree of Minister of Religious Affairs of the Republic of Indonesia and Minister of Education and Culture of the Republic of Indonesia. The Arabic letters transliterated into Latin (Indonesian language) consist of the following:

kh خ	h ح	j ج	's ث	t ت	b ب	alif ء=أ=إ
s ص	sy ش	s س	z ز	r ر	'z ذ	d د
q ق	f ف	g غ	' ع	z ظ	t ط	d ض
y ي	h هـ	w و	n ن	m م	L ل	k ك

Figure 1. The Forms of Transliteration of Arabic Letters into Latin Letters

According to the Ministry of Religious Affairs of Indonesian Republic (2010) there are 19 characteristics of Arabic letters;

1. *Jahr*, the letter is pronounced in bated breath flow, due to strong pressure on letter's *makhraj*.
2. *Rikhwah/Rakhaawah*, when the letter is pronounced, the sound is detached/walks along the letter.
3. *Istifaaal*, when the letter is pronounced, the tongue is overlaid from upper palate into the bottom part of the mouth (Tongue is moving down).
4. *Infitaah*, when the tongue is opened on the palate.
5. *Ishmaat*, When reading, it is done cautiously.
6. *Syiddah*, The sound is muffled when pronouncing letter due to perfect pressure on the letter's *makharj*.
7. *Idzlaaq*, the lightness of sound when pronouncing the letter comes out the tip of tongue to the tip of mouth.
8. *Qalqalah*, additional strong and clear sound that occurs on consonant after pressing it (bouncing).
9. *Hams*, the air flows out through the mouth when saying a word, along with a hiss.
10. *Isti'laa*, the tongue is lifted toward upper side of mouth cavity so that the voice is heard slightly enlarged and thickened.
11. *Tawassuth*, the middle of holding and releasing.
12. *Inhiraaf*, the inclination of the letter after emerging from its *makhraj* to the tip of tongue, so that *makhraj* will incline from the tip to rare part of the tongue.
13. *Takriir*, two vibrations that appear on the tip of the tongue.
14. *Shafiir*, additional strong sound (harpoon) that comes out from a gap between tip of tongue and incisors.
15. *Tafasyi*, air diffusion inside the mouth when pronouncing letter so that a strong hiss will be coming out.
16. *Ithbaaq*, tongue pressing movement against upper side of mouth cavity, so that the voice is heard slightly enlarged and thickened.

17. *Istithaalah*, lengthening sound from the side to the rarest part of the tongue.
18. *Liin*, pronouncing letter without incriminating word-of-mouth. The pronounced letter will be softer and less exertion.
19. *Ghunnah*, pronouncing letter with buzz.

When reading *Al-Quran*, all letters have to be pronounced correctly with their *makhraj*. The most common mistake is pronouncing a letter or a *makhraj* incorrectly with the letter position inside the mouth and the nature of the letter. The mistake will make the meaning distinct or wrong of the pronounced letter. A mistake of mispronouncing letter will cause a sin, especially when reading *Al-Quran* willfully and consciously. Example 1: there are several ways in pronouncing “amin”; 1). “amin” (*alif* and *mim* are equally short), it means “peace”, 2). “aamin” (long *alif* and short *mim*), it means “I am asking for protection and safety”, 3). “amiin” (short *alif* and long *mim*), it means “honest”, 4). “aamiin” (*alif* and *mim* are equally long), it means “o God, grant our wishes.

Makhraj is a place to hold the air when *Hijaiyyah* letters (Arabic letters) are pronounced. *Hijaiyyah* letters can be categorized into 8 places (Qomari. 2010), they are:

Table 2.
Arabic Letter's Makhraj

1. Halqiah (Throat)			
هـ	ء	Deep part of the throat (Below)	
ع	ح	Middle part of the throat	
غ	خ	Outer part of the throat	
2. Lahawiyah (Pharynx)			
ق		Rare part of the tongue beside the throat, in line with the soft palate	
ك		Rare part of the tongue in line with the soft palate, lower than makhraj Qaf (q)	
3. Syajariah (Middle part of the tongue)			
ج	ش	ي	Middle part of the tongue in a line with upper side of hard palate

ض	Both sides of the tongue in line with the upper side of molars
4. Asaliyah (tip of the tongue)	
ص س ز	Tip of the tongue is moving through the upper incisors, above lower incisors with a little looseness.
5. Zalaqiyah (side of the tongue)	
ل	Tip of the tongue is parallel with the upper gum
ر	Tip of the tongue is placed lower than Lam's <i>makhraj</i> (L)
	Tip of the tongue is placed lower than Nun's <i>makhraj</i> (N)
6. Nit'iyah (palate)	
ط د ت	Tip of the tongue is moving through upper incisors
7. Lisawiyah (gum)	
ظ ذ ث	Attaching the tip of the tongue at the end of the upper incisors
8. Syafawiyah (lips)	
و م ب	Between two lips
ف	Inside lower lip and in the end of upper side of incisors

According to Aceng (2015), Arabic is one of the world's languages that hold certain vital roles. Today, the economic activity in the Middle East region has become the world appeal. People that come to this region realize that the Arabic, other than English, is the main means of communication and diplomacy and at the same time as a way to approach the society and the Middle Eastern countries. Martinis (2012) "There are several obstacles to developing learning models, namely (1) internal factors, such as interest, motivation, and talent, (2) external factors, such as lectures, curriculum, facilities, syllabus, and learning materials".

2. RESEARCH METHOD

The Model of Android Application-Assisted Arabic Letter Learning Material Development belonged to research and development (R&D). It was done to develop and to validate the product of android application-assisted Arabic letter learning materials, to review research findings related to the android application-assisted Arabic letter learning material development, and to develop the product based on the findings, to examine the product scientifically and operationally, to revise the lack of Arabic letter learning materials found in the field testing.

The research procedures were the same as those used in the research and development (R&D). According to Sanjaya (2013), the procedural steps of the research are as follows:

1. Researching and gathering information including literature study and class observation.
2. Planning, which includes setting the objectives, deciding study sequences, and testing in a limited scale.
3. Developing preliminary form on product including preparing learning material, manual books, and assessment devices.
4. Field testing of preliminary product, which involved one to three subjects, engages six to twelve subjects, and uses in-depth interview, observation, and questionnaire. The results were analyzed to find the weaknesses. The field testing was emphasized on the process more than the learning result.
5. Based on the analysis result, the preliminary product was revised to get a better product.
6. Field testing of the product was maintained in an extended scale. In this step, the data were collected; they were not only the qualitative data to assess the process, but also the quantitative data from pretest and posttest.
7. The product revision was based on the result of the product testing.
8. The extended scale of field testing uses in-depth interview, observation, and questionnaire. Then, the collected data were analyzed.
9. Final product revision was based the result of data analysis from the last field testing.
10. Disseminating and reporting the final product of the last result of research and development.

According to the concept above, the phases in the research and development of the model of android application-assisted Arabic letter learning material development was divided into three, which was appropriate with the research need. They include Phase I: Preliminary Study, Phase II: Model Development, Phase III: Model Testing and Acceptability Testing.

3. RESEARCH PRODUCT AND PROTOTYPE

The development and the utilization of ICT have an impact on learning process changes for all subjects, including Arabic. This model development also utilizes ICT based on smartphone as a complement of printed textbook learning material. There are two products of learning materials, which are produced from this research; 1) text book 2) Android application program. The textbook learning material and Android application have more characteristics and facilities than the common learning materials (Table 1).

Hopefully, it can assist teachers in doing the learning process and also help the learners especially in the mastery of basic types and forms of Arabic letters in improving the reading skills and interests comprehensively. The expected product's specifications are as follows:

1. The textbook learning materials should fully describe the characteristics of the shape and types of Arabic letters. It should also describe the nature and the image of makhraj position of each letter. The textbook is created in order to be used in self learning or learning without the guidance from a teacher and also to accommodate learners who have a high learning speed.
2. The Android application created as the assisting instrument will equip the textbook above. The reasons why the developed textbook is equipped or supported with this Android application are as follows: 1) the application is to give examples of how to pronounce letter's makhraj in sound and action, substituting teacher's facial expression exemplifying the sound pronunciations of each Arabic letter; (2) evaluation and remedial program created and presented are independent in nature in the hope that the learners' absorbability toward the materials can be monitored during the learning in the classrooms or extra learning outside the classrooms; (3) the flaws and weaknesses of printed learning materials are corrected; and (4) Smartphone installed with the Arabic letter application is more practical and economical when compared to other learning media.

Prototype is designed according to: (1) initial hypothesis which is based on literature research and preliminary research (field research in the *TPAs*), questionnaire to junior secondary school students, and field research on adult Moslems' reading skills; (2) personal experiences; and (3) learning motivation by utilizing smart phones.

The textbook prototype of Arabic letters is entitled "*Pengenalan Huruf Arab bagi Pemula*". This textbook contains various materials of Arabic letters as many as 28 letters. Each letter is created in individual page apart one and another with the contents of letter image, mouth sectional set up image of *makhraj* position, explanation about the place of *makhraj*, given pronunciation practice with adding *harakat* (punctuation).

The Android application prototype is entitled "*Huruf-huruf Arab dan Cara Membaca yang Benar Bagi Pemula*". This application has some interface pages; (1) first interface is about the Arabic letter icons as many as 28 letters which contain written description, spoken description (audio), mouth sectional image of *makhraj* position equipped with *makhraj* locator signal; (2) second interface contains various *harakat* description; (3) third interface is Reading Skill Test, (4) closing interface is about preface and bibliography.

4. CONCLUSION

The model of android application-assisted Arabic letter learning material development has been done up to the preliminary research currently, and the preliminary form of product is prepared by creating prototype design.

The prototype of model of Arabic letters learning material development consists of a package that includes: 1) textbook prototype entitled "*Pengenalan Huruf Arab bagi Pemula*", 2) Android application prototype entitled "*Huruf-huruf Arab dan Cara Membaca yang Benar Bagi Pemula*".

The next phases of the research to be conducted are product development, field testing of product effectiveness

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