

## **Mobile Application of Quran and Arabic Language for Interactive and Self Learning Assistant: A Review**

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### **ABSTRACT**

Mobile technology in learning process is quite demanding, nowadays. It has a huge potential as a learning tool and also can be used as distance learning environment. This kind of technology is believed able to solve the current problem in j-QAF learning, especially the Arabic and Quran learning process. It is because, the current method of Arabic and Quran learning method, become less effective and unattractive to be implemented, especially towards the young Muslim generation. Moreover, today's busy lifestyle needs a modern and technological approach that able to optimize the study time and improve the learning process. This paper seeks to provide a comprehensive review of any recent research related to mobile application for Arabic and Quran, due to fulfill the needs of students and teachers based on the survey reports obtained. Here, the findings regarding the j-QAF students and teachers' perceptions towards the mobile usage in Arabic Language's and Quranic learning process will be discussed in details. Mobile learning is considered as an interactive and self-learning method, which can improve and strengthen the current learning process through utilization of portable tools or device of any mobile application. This could be another alternative due to support the existing method in learning and teaching Arabic and Quran, which can considered as advance teaching tools/aids. In current time, this mobile tool is more preferable to be used during the leisure time and suitable to be implemented with current lifestyle for self-learning and improvement method, due to optimize the study time. Areas with potential of further expansion are identified for future research in supporting the j-QAF learning.

**Keywords:** j-QAF, mobile technology, Arabic, Quranic, teaching aids

## 1. Introduction

Mobile technology is a term that normally used to describe the various types of cellular communication technology. Since the beginning of this millennium and technological era, a standard mobile device has gone from being no more than a simple two-way caller of being cellular phone, GPS navigation system, an embedded web browser and many more. Many experts argue that the future of computer technology rests in mobile/wireless computing.

Currently, US Military is using mobile technology as a tool for information dissemination and collection in the battlefield arena. Because of that, educators, and instructional designers recognize the potential of mobile technologies as a learning tool for students and have incorporated them into the distance learning environment. Most of them, including researchers and practitioners have incorporated this technology into their teaching and learning process using mobile devices. Keegan (2002) [1] has anticipated that, "Mobile learning is a harbinger of the future of learning". Mobile learning is a method of learning accomplish with small and portable devices. Moreover, Mobile learning is not one of the new educational paradigms that suddenly blossom in the field of education, that become wildly popular for a few years, and then quietly fade away (Clark, 2007) [2]. Nowadays, with the latest technology, learners are being able to learn anything, at any place and any time they needed the knowledge. Thus, mobile phone is the perfect delivery vehicle for learning in near future.

Thus, in this paper we evaluate the data and findings from the survey we had already conducted towards the j-QAF students and teachers' perceptions of the mobile usage in Arabic Language's and Quranic learning process. Besides, we also review if there any research has done or been conducted on previous work, related with learning Al-Quran and Arabic language through mobile technologies. Alternatives method of learning for both Al-Quran and Arabic, and efforts to elevate those elements are highly beneficial indeed and considered as a good deeds in Islam. Moreover, Al-Quran is the foundation of Islam, Islam and the Muslim way of life is based on that. Islam is seen more as a way of life than a religion, and the Quran is seen as containing all the instructions for living a proper Islamic life. Learning and retrieving information from it therefore, is an important aspect and part of a Muslim's life. In fact, Arabic is the language of the

Quran. Thus, to understand the Quran and its interpretations properly, reading and learning Arabic is much more preferred and encouraged.

The Holy Quran should be put into our heart by reading it and developing that habit in leisure time, due to improve Quran reading skills and understand the meaning and lessons that can be derived from it. Implementation of Islam Hadhari concept in Malaysia, which in turn encourages the development of Islamic teaching and ethics with current available technology. ICT and technology has been used as one of the intelligent system mechanisms, due spread the words of Allah in a right way and appropriate manner with a better understanding of its contents and interpretation. Moreover, reciting Al-Quran in the appropriate way and well defined manner are very important for all Muslims and indispensable in Islamic worship, such as prayers. However, the role of Quranic learning in today's society is worrying, considering there are a lot of Muslim people still can't read Al-Quran properly with a better understanding of tajweed rules. Majority of them intend to find another alternative, due to improve their recitation and understanding of Al-Quran. Because of that, there is a growing market for self-learning method to learn Al-Quran as well as Arabic, which also compatible to be used in current busy lifestyle. Today's busy lifestyle needs a modern and technological approach that can improve learning Al-Quran, as well as Arabic and optimize the study time.

## **2. Background**

### **2.1 Linguistic properties of Arabic Language**

Al-Quran is in Arabic language, thus any small mistake in pronunciation of a letter or word may change the meaning of that word. It is an ancient classical language, which influenced by a lot of dialects. It has been used as an official language in more than 22 countries. Arabic is one of the languages that are often described as morphologically complex and the problem of language for Arabic are multipart by the variation of dialectal [3][4][5][6]. However, only Modern Standard Arabic (MSA) has been used for written and formal communication, because MSA has universally agreed upon the writing standard, as well as for communication purposes [3][4][5][6][7].

## **2.2 Al-Quran Learning and Tajweed Rules**

From the generation of the Prophet Muhammad PBUH till now, no one has ever denied the fact that Tajweed is definitely important. It is only now in our generation that people have lost respect and forgotten the status of Tajweed. The role of Quranic learning in today's society is worrying, considering there are a lot of Muslim people still can't read Al-Quran properly with a better understanding of tajweed rules [8]. In current situation, Quranic lesson only been taught and stressed out while at school, which is one of the main syllabus in PI (Pendidikan Islam) and j-QAF [9]. Meanwhile, young working adults, as well as older community need to find another alternative, due to improve their recitation and understanding of Al-Quran. Because of that, there is a growing market for self-learning method to learn Al-Quran, which also compatible to be used in current busy lifestyle. Besides, there is also a need to independently evaluate the user reading and understanding abilities of Al-Quran. The existing solutions only provide learning in one-way direction, which is very subjective in determining improvement, and also difficult in evaluating user performance.

## **2.3 Mobile Learning Technologies**

Mobile Learning is a method of using wireless and mobile technologies for education by extending access to a desktop-based online environment to handheld devices such as mobile phones or personal digital assistants (PDA's) used as part of a mobile community (Farooq, et.al, 2002) [10]. Thus, instructional designers and teachers need a solid theoretical foundation for mobile learning in context of distance education and how to utilize the emerging mobile technologies and integrate them into teaching more effectively.

### 3. Survey

A survey has been conducted focus on “Internet and Mobile Usage in Arabic’s Learning”, during the field trip started from 22<sup>nd</sup> June 2010 until 24<sup>th</sup> June 2010 at Sekolah Kebangsaan Padang Garong 2, Kota Bharu, Kelantan. The data of survey has been collected from 2 groups, which are 1) Teachers and 2) Students. The results of the data obtained from both group are described below [11]:

#### 3.1 Teachers

The j-QAF teachers in this school only 4, while another 4 teachers teach Pendidikan Islam and 10 other teachers for KAFA. The table shown below is the most significant findings of the data survey taken from these 2, out of 4 teachers (j-QAF):

**Table 1:** Teachers response

NO.	QUESTIONS	ANSWERS	
		TEACHER 1	TEACHER 2
1	<i>Gender</i>	Women	Women
2	<i>Age</i>	33	35
3	<i>When did you start teaching of j-QAF’s subject, Arabic?</i>	2005	2007
4	<i>Were you given specialized training to teach this subject?</i>	Yes	Yes
5	<i>If yes, please indicate the form of training provided.</i>	Training in group, HSP Training, PKSR Training	Training and exercising
6	<i>State teaching’s aid that you commonly used in the P&amp;P process of this subject:</i>	Exercise Book and Text Book Others: BBM	Exercise Book and Text Book
7	<i>If you are using computer software, indicate the name of the software and software manufacturers.</i>	-	-
8	<i>The effectiveness of using that software in P&amp;P process.</i>	-	-
9	<i>Have you provide self-instructional materials (own creation) with the use of ICT applications?</i>	No	No
10	<i>If so, what software do you use in</i>	-	-

	<i>preparing the teaching materials?</i>		
11	<i>What form of testing that you normally use to evaluate the performance of students?</i>	Speaking Test Writing Test	Speaking Test Writing Test
12	<i>In your opinion, is the usual method of P&amp;P process for this subject already sufficient without the assistance of ICT?</i>	No	No
13	<i>The overall performance of students in this subject.</i>	Satisfied	Satisfied
14	<i>Do you have a computer and internet connection at home?</i>	Yes, both	Computer only
15	<i>The level of expertise in the use of ICT, especially computer:</i>	Expert	Expert
16	<i>Have you ever used the Internet in the P&amp;P process of this subject?</i>	No	No
17	<i>If so, what is the frequency of this application applies?</i>	-	-
18	<i>Have you ever used mobile applications in the P&amp;P process of this subject?</i>	No	No
19	<i>If so, what is the frequency of this application applies?</i>	-	-
20	<i>In your opinion, how far both applications (the Internet and mobile) can help in improving the P&amp;P process of this subject?</i>	Very Help	Very Help

According to above table, both teachers were expertise and specialized in teaching Arabic language. Both of them also expert in ICT, especially computers and they agreed and believed the ICT, through implementation of Internet and Mobile application may help improving the P&P process of Arabic and Quranic learning. Furthermore, the implementation for those technology still not yet been implemented in Malaysia.

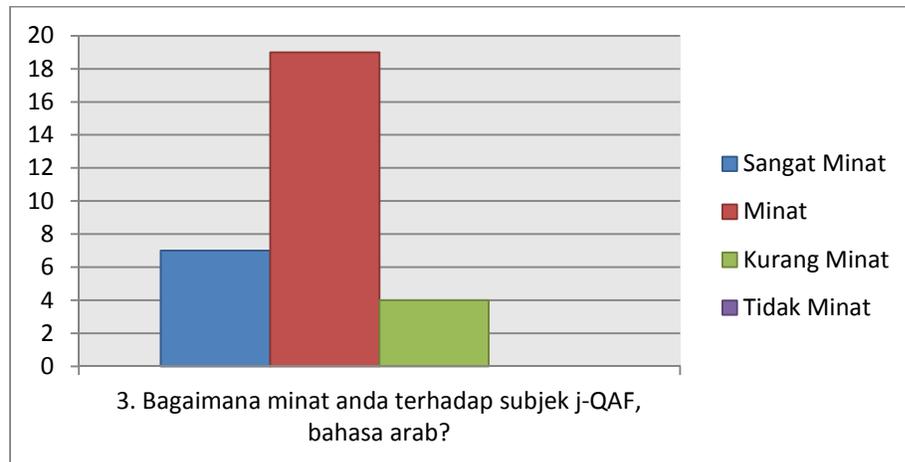
### 3.2 Students

Survey data was obtained from 30 students of standard 5 (11 years old), which is j-QAF students. 60% (n=18) of this sample was female, while 40% (n=12) of the sample was male. The results of the findings are based on the questions from the questionnaire, which have been divided and categorized as below:

**i. Interest**

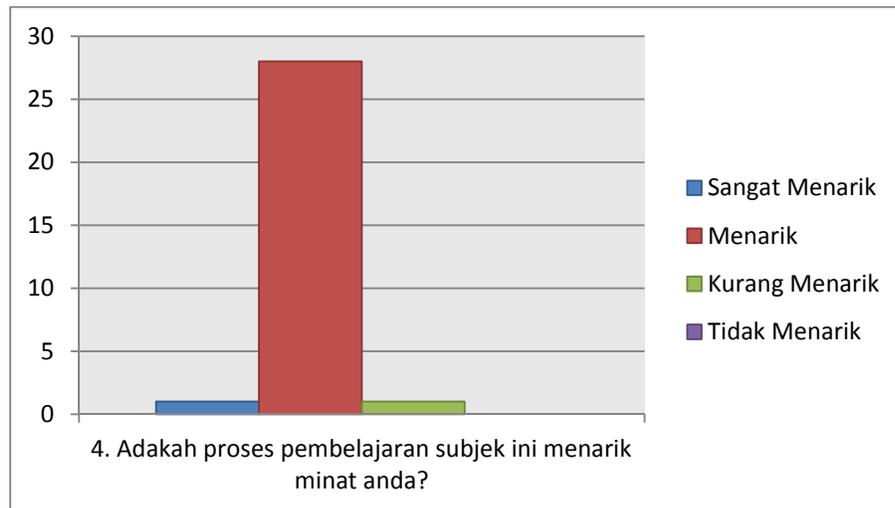
*1) How does your interest in the j-QAF's subject, Arabic?*

23% of students say that they are very interested in this j-QAF's subject, Arabic Language, while another 63% (n=19) say that they are interested and the rest (n=4) are less interested in the subject.



*2) Is the process of learning this subject interest you?*

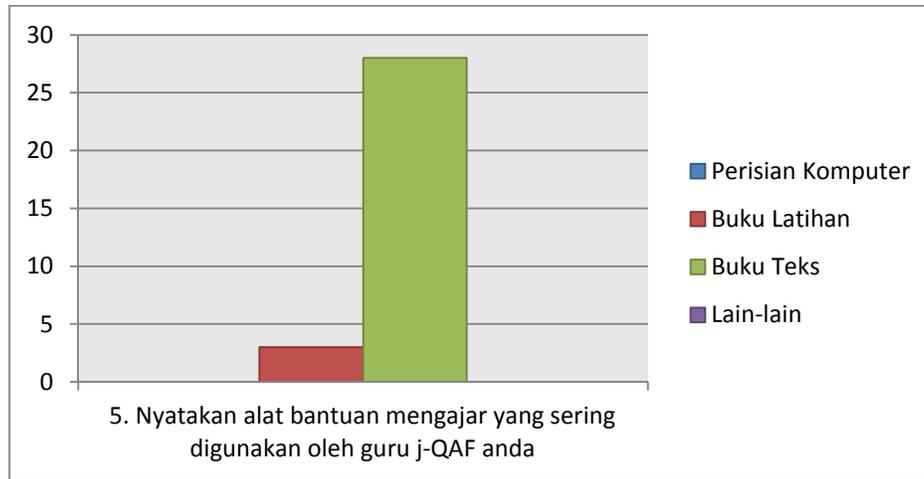
Almost all students (n=28) said that learning of this subject is interesting.



**ii. Teaching Aids**

*1) State teaching aid which is normally used by your j-QAF's teacher*

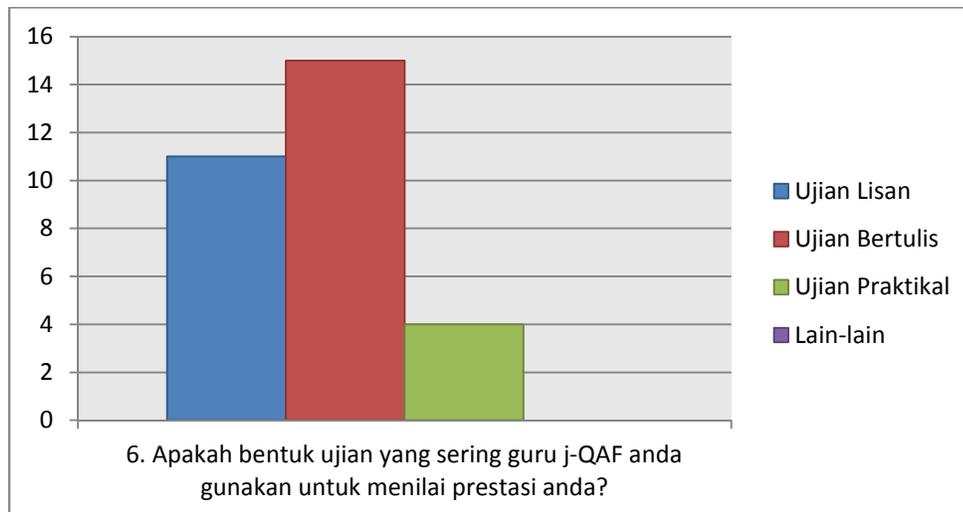
Text books (n=28) are teaching aids, that the most commonly used by teachers, followed by exercise books. From this survey, we can found the computer software and other teaching aids are not used in the process of learning.



### iii. Test and Assessment

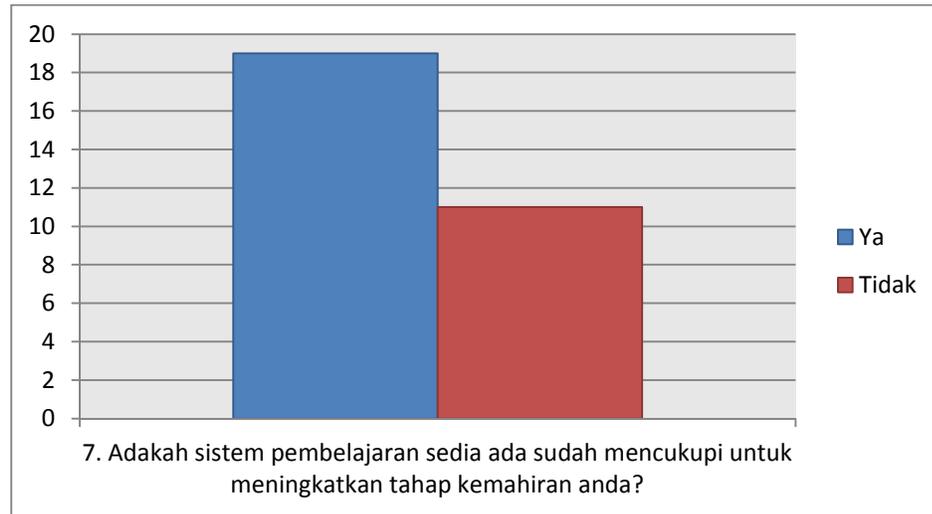
1) *What is a test that your j-QAF's teachers frequently used to assess your performance?*

37% (n=11) of students say that a test that teachers frequently use to evaluate their performance is a verbal test; whereas 50% (n=15) of students say the written test and that the remaining students, 13% (n=4) say the practical test.



2) *Is the existing education system is sufficient to improve your skills?*

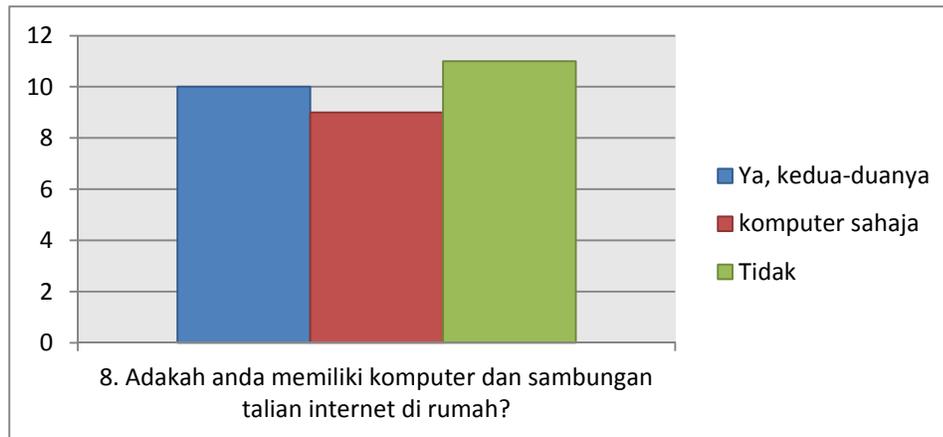
63% (n=19) of students said that the existing education system is sufficient to improve the skills of the students, while 37% (n=11) say it is still not sufficient.



**iv) Computer and Internet**

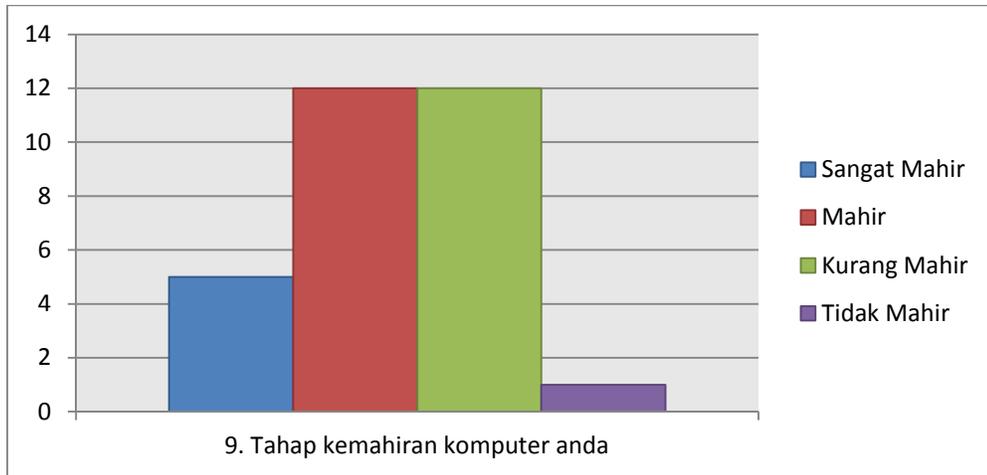
1) *Do you have a computer and internet connection at home?*

33% (n=10) of students have both computer and internet connection at home; while 30% (n=9) of students only have computer as the other 37% (n=11) did not have both.



2) *Your computer skills:*

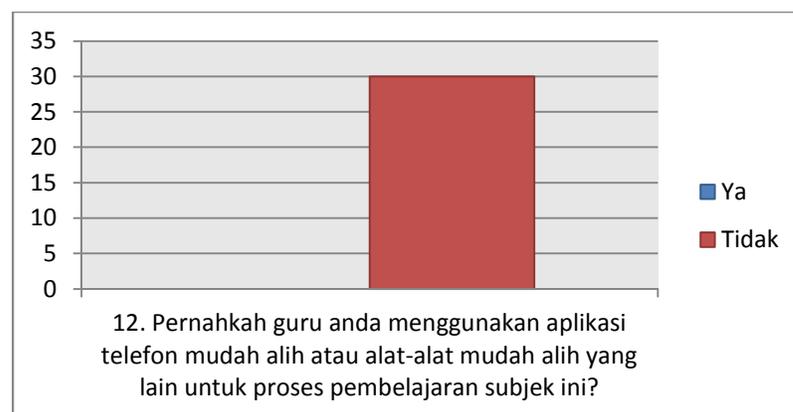
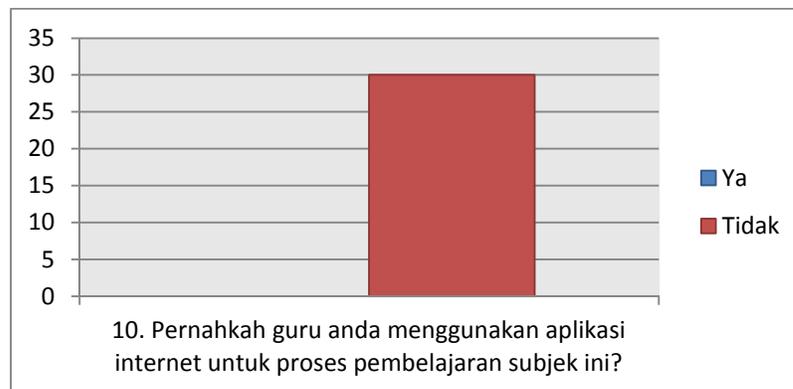
17% (n=5) of students say they are very skilled with computers; 40% (n=12) say they are skilled; 40% (n=12) more say they are less skilled; while 3% (n=1) say they are not skilled.



3) *Have your teachers use the Internet for learning process of this subject?*

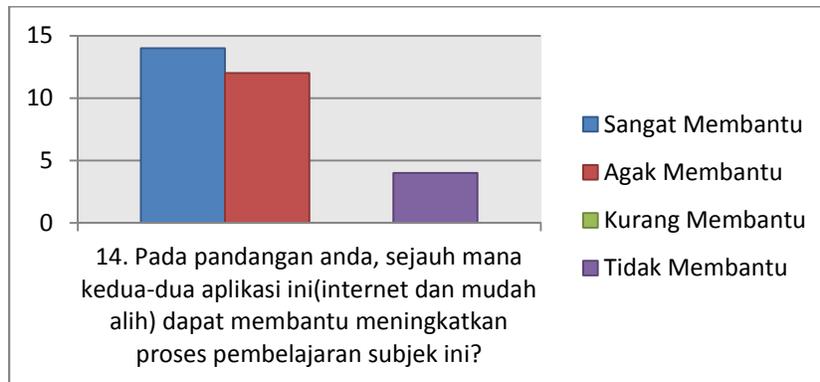
4) *Have your teacher using a mobile phone application or other mobile devices for learning process of this subject?*

Both questions shown above, that all students say that their teachers never used the Internet and mobile applications for learning in the classroom.



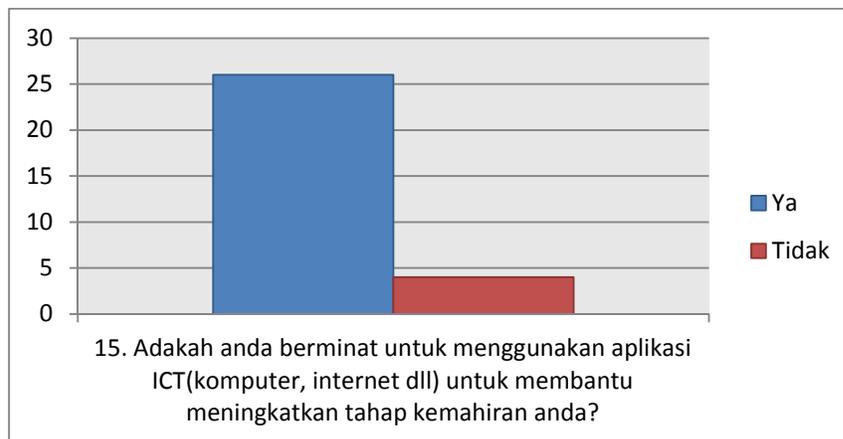
5) *In your opinion, how far both applications (the Internet and mobile) can help in improving the learning process of this subject?*

47% (n=14) of the students say that both applications are very helpful in enhancing the learning process; 40% (n=12) say somewhat helpful and 13% (n=4) are saying it does not help.



6) *Are you interested in using ICT applications (computers, internet etc.) to help enhancing your skills?*

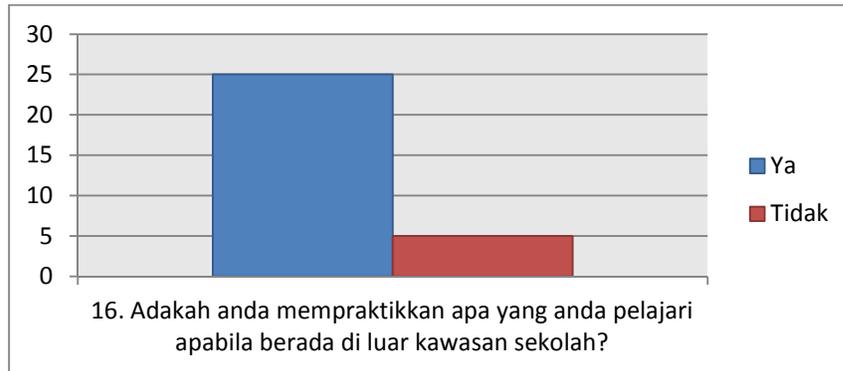
Most of the students (87%; n=26) interested in using ICT applications (computers, internet etc.) to help improve the skills.



**v) Learning Practices**

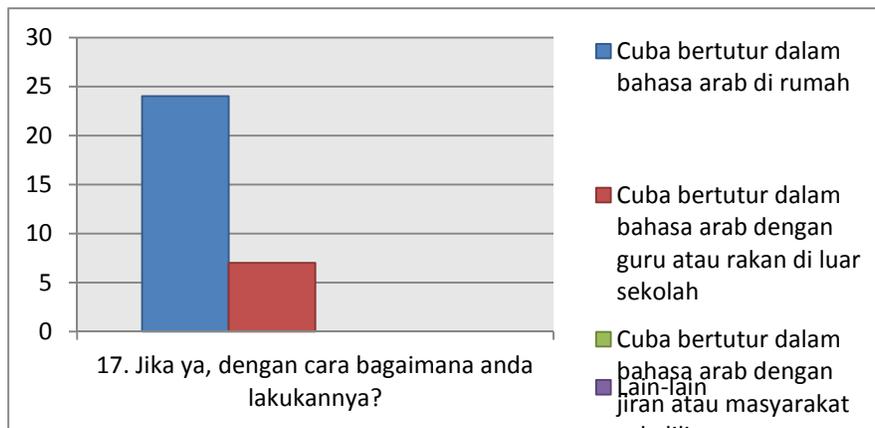
1) *Do you practice what you learn outside of school?*

About 83% (n=25) of the students to practice what they have learned in school while he was outside of school.



2) *If so, by how do you do it? (Check all that apply)*

Most of the students try to speak in Arabic at home and some of them also try to speak with their teachers and friends outside of school.



### 3.2.1 Analysis

According to the above data collected from the students, majority of them very interested in learning Arabic. They practically learned those subjects at school with friends and teachers. Although the students and both teachers, know how to use computers and internet, but they still do not been exposed with any technologies or ICT in their learning (P&P), just using the conventional method such as text book and exercise book. Majority of the students believed that,

both applications (the Internet and mobile) can help them to improve the learning process, as well as able to motivate them to learn more about Arabic and Quran.

#### 4. Existing technologies

Mobile learning is implemented using different type of technologies and platforms. Each implementation has specific characteristics in terms of user interface and content and influences the quality management process. The software used in mobile learning process can be either; 1) *Web Browser (Web-based platform)* or 2) a specific application (standalone or a client application).

##### 4.1 Web-based Platform (Web Browser)

Web-based platform also referred as Web-based mobile learning platform. This type of platform is commonly used in mobile learning process. According to Paul Pocatilu, 2009 [12], the architecture of this platform is based on figure 1 shown below:



**Figure 1:** Web-based mobile learning platforms architecture [12]

##### 4.2 Specific application (standalone or client application)

Meanwhile, the *Standalone applications* do not require the network access. However, the update of contents needs access to device, which is similar to the client applications for distributed platforms. This is main disadvantages of the standalone applications. Almost all mobile operating systems support for multimedia applications developments, while some

technologies and libraries exist in desktop versions (like Open GL, DirectX etc), other are specific to some operating system [13], [14], [15], [16].

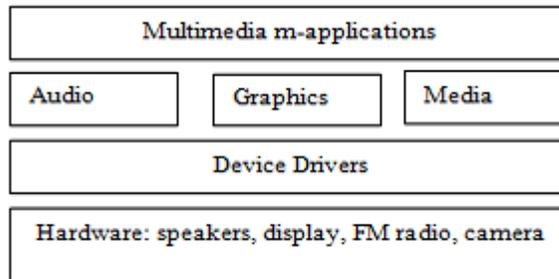


Figure 2: Multimedia system [17]

Multimedia m-applications will access audio, graphics and media API through operating system or third party libraries. The API communicates with multimedia related hardware through device drivers. The display resolution, audio and video system, 3D support and operating system influence the multimedia application development for mobile devices. The audio and video resources involve the playback and recording capabilities.

#### 4.2.1 Java Micro Edition (Java ME)

Java Micro Edition platform is intended for all mobile devices that have limited hardware and software resources. Currently, there are a few of Quran and Islamic software for Java enabled mobile phones already existed in the market.

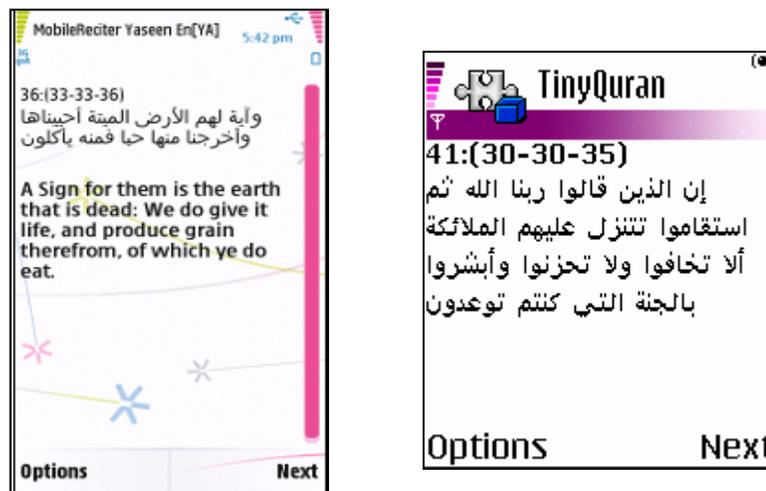


Figure 3: Screenshot for the MobileReciter 1.0 and TinyQuran software [18]

For example, **MobileReciter 1.0**, which is Quran Reciter for mobile (java enable phones) [18]. The initial version of this software already available with Surah Yaseen and Juz Amma. As well as, **TinyQuran 1.5**, which is a program designed that help memorize Quran for Java enabled mobile phones and handheld devices.

Meanwhile, for Arabic learning language there are a few software also used for learning the Arabic languages through mobile phone available right now, such as **L-Lingo Learn Arabic Free Ver. 4.51**, **Arabic129 1.0**, and **Speak Arabic Free 1.0** etc [19]. All these softwares are freeware license, and those software were practically allowed users to learn Arabic with smart and effectively, through different type of learning approach such as puzzle, audio and spoken Arabic phrases and others.

#### 4.2.2 Windows Mobile

By using the windows mobile, it is highly recommended to play the media files in a separate thread. Here, DirectShow is available to start with Window Mobile or Windows Media Player control, which is based on COM technologies. Beside the Java platform, most Quranic and Arabic software also used this type of platform to store its certain application and software in mobile phones. The application that have been developed using this type of platform are **Pocket Islam** and **eIslamExplorer** [18] for Quran software, while **BEIKS Talking English-Arabic Travel/Phase Book** [19] for Arabic learning software.

#### 4.2.3 Symbian OS

Certain mobile also used the Symbian OS as their main platform. The Symbian audio components here, allows playing and recording audio files depends on installed codecs. Besides, symbian's multimedia framework has support for playing and recording videos. The source can be a file on disk or a stream of data. **Pocket Quran** [20] for Nokia Series mobile phone runs natively on Symbian OS and does not require Arabic support. The text has full "Tashkeel", which includes the verse numbers, division markers, and search capabilities function.



Figure 4: Screenshot for the Pocket Quran with Symbion OS platform [20]

Please refer to table 2 and 3 below, to see the comparison within those Quran and Arabic software, which currently available in the market:

Table 2: Quran learning software through mobile [18]

No.	Name of Product	Description	Platform
1.	eIslamExplorer	Quran software with nice display of Arabic text. 2 different versions are available	Java/ Windows Mobile
2.	Quran 1.0	Another program which also display the Quran in Arabic with full “Tashkeel”	
3.	Pocket Quran	Free Quran softwares for variety of pocket electronic devices with complete Arabic text with “Tashkeel”, search features, bookmarks etc.	
4.	Pocket Islam	Free Quran Recitation software for Pocket PC running Windows Mobile. Nice display of Quran Arabic text and also includes optional translations in different languages	Windows Mobile

Table 3: Arabic learning of mobile software [19]

No.	Name of Product	Description	Platform
1.	LingvoSoft FlashCards English-Arabic	The most effective way to build your vocabulary includes more than 8000 words	
2.	Speak Arabic Free 1.0	Hear and learn the most important spoken Arabic phrases	
3.	BEIKS Talking English-Arabic	The English-Arabic talking phase book for Windows Mobile	Windows Mobile

	Travel/Phase Book		
4.	Dictionary Arabic 1.0	Well-arranged and comprehensive Arabic dictionary for all Pocket PC	

All the above listed are the software, which currently available at the market right now. Some of them are the freeware license and some of them are paid license software. Most of them only can run on smartphone mobile either using the Java platform, Windows Mobile, or Symbian OS. Latest version of mobile phone that equipped with android platform also able to run and functioning, such as Pocket Quran. This Pocket Quran has a complete Holy Quran in Arabic for Android devices, and it is very lightweight and able to be optimized for high speed browsing.

The existing product/technology available and listed above focus on Quranic learning, were only capable to show Al-Quran texts and/or play stored Al-Quran recitation. They just provide learning in one-way direction, which is very subjective in determining improvement, and also difficult in evaluating user performance. Thus, new development of mobile application needs to be invented due to provide a two-way direction of Al-Quran learning tool, with capabilities to evaluate the user performance. Meanwhile for Arabic, the learning methods are slightly different from Quran because it only focuses on languages, pronunciation, and teach on how to use each vocabulary, nouns and others. Same with Quran, the Arabic learning software also do not provide two way learning direction, in which difficult to evaluate the user performance.

## 6. Conclusion

In this paper, all different methods or approaches have been discussed and reviewed, due to find the most suitable and significant method used for learning Quran as well as Arabic, for support in j-QAF programme. Although there are a lot of software available free from the market, we need to consider the demands and needs of students, as well as teachers due to improve their learning process. Implementation of mobile technology application in Quran and Arabic learning is more preferable to be used during the leisure time and it is more suitable to be implemented with current lifestyle for self-learning and improvement method, due to optimize

the study time. Due to that matter, a new design of mobile technology for Quran and Arabic need to be developed, to fulfill the needs of targeted users (j-QAF students and teachers), in which considered as portable device, used as assistive tools learning. The proper actions need to be put into consideration, due to improve the development of this mobile application and make it more compatible and useful for the end users, as it is designated for that purposes

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