

POTENTIAL USAGE OF MOBILE LEARNING VIA SHORT MESSAGING SYSTEM (SMS) FOR ENHANCING ISLAMIC KNOWLEDGE OF ADULT LEARNERS

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Abstract: The study was to explore the potential usage of mobile learning via SMS for enhancing Islamic knowledge that focusing on the topic of *waqf*. The study used questionnaire survey data gathered from 80 adult learners in Universiti Sains Malaysia, Pulau Pinang. The application of short messaging system (SMS) in this study based on Adult Learning Theory, Andragogy. There were four illustrations of andragogical model used in this study. The method used was the Solomon Four Group Design and questionnaire based on *waqf* knowledge. The adult learners were divided into four groups which were two experimental groups and two control groups. The involvements of the adult learners were voluntary and randomly assign for each group. Study participants distributed into 20 each group. The experimental group received SMS and the control group did not receive SMS. Pre- and post-assessment was used to measure the level of achievement. Data were analysed using SPSS. The pre- and post-assessment results were analysed with two-way ANOVA analysis and descriptive analysis. The results showed that the usage of mobile learning via SMS is potential for enhancing the level of adult learners' achievement on *waqf* knowledge as indicated in the significantly improved marks for post assessment in the experimental group. Majority of students in the experimental groups agreed that the use of SMS increased their interest and ability to remember the contents. Therefore, the study suggests that the usage of mobile learning via SMS can be utilised and has potential as one of the tools in delivering of Islamic knowledge to the public.

Keywords: SMS, mobile learning, Islamic education, androgogy, adult learners

INTRODUCTION

Nowadays, mobile learning is very popular and has been accepted in the education sector. Some past researches proved that the usage of mobile learning can motivate and improve the passion for learning amongst students as the example of study done by Nadire and Dogan (2009), Horstmanshof (2004), Mackay (2007) and Holzinger, Nischelwitzer and Meisenberger (2005). In Malaysia, the usage of mobile learning is still in the initial stage of implementation. However, the study of mobile learning had attracted many researchers from local universities to implement it in various sectors.

Fadzilah (2012) also agreed that mobile learning is an additional necessity to facilitate students' learning, revision, reflection and further reading. It indirectly gives an opportunity for them to learn in their own way whenever and wherever they need or want (Pisey, Ramteke, & Burghate, 2012). It was also supported by Valk, Rashid and Elder (2010), asserting that mobile learning gives improvement to learners in learning which ultimately impacts educational outcomes by providing efficient and inventive methods so that students can learn with better understanding.

El-Hussein and Cronje (2010) reported mobile learning as an educational activity involving the learner and lecture to fully-utilise the mobile technology during the learning process. It means that they use mobile as a reference in learning sessions or their activities. Mobile learning changes their assumption to be more positive in the usage of technology according to paradigm shift and also promotes the abandoning of constraints of our habitual ways including thinking, communicating and so on.

El-Hussein and Cronje (2010) also emphasised that the concept of mobile learning can be divided into three significant areas: mobility of technology, mobility of learners and mobility of learning. Mobility of technology refers to mobile devices involved in delivering contents of learning to the learner. Mobility of learner refers to students who get new opportunities and experiences in the usage of mobile technologies for educational activities no matter where they are. It helps students to make reference for their learning and indirectly motivates them to learn. The mobility of learning refers to the transmitting of the full contents of learning by mobile devices. It is different from the traditional classroom because it does not involve face-to-face interaction.

According to the definitions of mobile learning, the use of mobile learning provides impacts and advantages to the educators as well as learners. Some previous studies have proven that the use of mobile learning in education brought advantages and

helped improve the performance of students. Mobile learning as an electronic mode that can provide convenience, is ubiquitous and improves collaboration regardless of time and location at a fast and cheap rate (Siti Sarah, 2011). It has even been potentially developed in areas other than education.

OBJECTIVES OF THE STUDY

The main objective of this study is to determine the potential of mobile learning via SMS in improving Islamic knowledge of adult learners.

The specific objectives are:

1. To measure the effect of SMS on adult learners in improving Islamic knowledge by comparing the pre- and post-assessment results.
2. To measure the effect of mobile learning via SMS in enhancing the level of adult learners' achievement based on the *waqf* knowledge by comparing the pre- and post-assessment results.

LITERATURE REVIEW

Islamic Education

Islamic education is a way to spread the Islamic teachings amongst students and also the guidance for Muslims to practice their routines in daily life. Islamic education covers whole aspects of human life including spiritual, intellectual, emotional, physical and social (Ab. Halim, Muhammad Faiz, & Kamarul Azmi, 2012; Mohd Roslan & Wan Mohd Tarmizi, 2011). According to Douglass and Shaikh (2004), Islamic education is the reflection to the original important sources of knowledge which are Qur'an and Sunnah (known as Hadith). Both sources are kindly important for Muslims as the mechanism to study and recognise various spheres of human action including aqida (articles of belief), ibadat (forms of worship) and 'ilm (embracing knowledge of the first two as well as worldly knowledge).

In order to form a true Muslim amongst communities based on Islamic teaching, the method of delivery need to be right and facilitate the community to understand the content in it deeply. Teaching and learning process must be always evaluated; therefore its weaknesses can be improved. In hopes, knowledgeable community can be provided as an outcome of this learning and the way of Islam can be practiced in their daily life.

Waqf

Waqf is derived from the Arabic word of which the original word is *waqafa* which means “detention”, “to prevent” and “to restrain” (Siti Mashitoh, 2006). According to Ahmed (2004) in Farhah, Kyadibi, Polat, Fidan and Kayadibi (2014), the word of *waqf* in language perspective means stand still, hold still and let go which it means hold the *waqif* from using or selling the properties. Baharuddin, S. Salahudin and Asmak (2006) stated that the *waqf* term means holding on to the properties that were donated and then spend the benefits of such properties in the ways of Allah (The All Mighty) without changing the physical aspects of the properties. This means the properties cannot be sold. The benefit of the *waqf* properties must be used for the good purpose by following the conditions determined by *waqif*.

In the Islamic teachings, *waqf* is one of important practices taught by Islam but it is less emphasised in Islamic education. *Waqf* education should be emphasised in Islamic education because it is one of the important economic instruments, which have many roles and significant contributions toward society development. It is not only as a sign worshipping of Allah, but it will educate Muslims from undesirable characteristic such as stingy.

In the context of understanding and awareness among Muslims on *waqf*, the past research showed that it still at a moderate level. Research done by Farhana and Asmak (2014) stated that, most Muslims in Malaysia have not awareness about *waqf* and their understanding of *waqf* is low and up to a point of neglect (Farhana & Asmak, 2014). It also supported by Mohd Afandi (2010) which in his study showed that the level of knowledge among Muslims on *waqf* still in moderate even though Islam has been widely practiced in this region of Malay Archipelago or Nusantara. Research done by Ahmad Fatin, Safura, Mohammad Aizam and Hazlin Falina (2017) stated that in general, Muslims in Malaysia has been long know on *waqf* but the majority of them still not aware and understand how to be practiced it in their life.

The perception of the community towards *waqf* is still minimal and *waqf* is regarded as a non-sensitive issue that holds no great importance (Mohammad Zaim, Khader, Mohd Farhan, & Muhammad Ikhlas, 2013). In fact, Mohammad Syah Firaizal (2005) stated that due to the community’s lack of exposure and knowledge of *waqf*, it brings a lot of inconvenience for the trustee in managing *waqf* properties. Therefore, measures to solve this problem should be executed to provide better exposure and create awareness among members of the community.

Besides, majority of Muslims' opinion towards *waqf* is increasingly different. According to Muhammad Syukri (2005), the general public made an assumption that the people who have a lot of wealth are the only ones who can participate in *waqf*. This assumption has led to *waqf* being increasingly ignored among Muslims. In fact, everyone is encouraged to contribute in charity. Their contribution to *waqf* is seen as an alternative in developing the economy of the ummah and fosters a strong bond of the members of the community.

The *waqf* has a possible potential in enhancing economic welfare and reducing government burden. However, this potential must be supported by the awareness and understanding of the community on *waqf* which is considered to need more exposure to ensure they understand the concept of *waqf*. It needs a lot of activities and alternative ways to deliver the *waqf* knowledge among Muslims in Malaysia.

Technology in Islamic Education

Several previous studies have been conducted in the use of technology in Islamic education. A study done by Hamzah, Ismail and Embi (2009) explored on the impact of technology change in Malaysian Smart Schools on Islamic Education teachers and students. This research found that ICT technology is beneficial for Islamic education teachers. Most of participants agreed that technology helped them in teaching and learning process with the diversification of creativity by using PowerPoint presentation, use of educational software and also downloaded the pictures from the internet. However, this study also stated that there are barriers in the implementation of technology usage amongst participants. The participants said that the facilities of computer are limited, whereby internet connection is slow, software provided was not compatible with the national textbooks and time constraints to use a computer lab for teaching are the causes why the technology is not yet widely used amongst Islamic education teachers.

This finding is consistent to the finding of research conducted by Khadijah, Tengku Norhayati, Mohd Isa and Hafizhah (2014) who reported that ICT usage is still low in the teaching and learning process amongst Islamic education teachers. It is due to weakness in mastering computers and information and communications technology (ICT) infrastructure. Technology usage is depending on ICT skills of educators (Khadijah et al., 2014).

Another study done by Mohd Alif, Mohd Isa and Surina Akmal (2014) explored on multimedia usage amongst Islamic education lecturers. The data was collected from 250 students by involving three types of higher institution in West Sumatera,

Indonesia. From the analysis in this study showed the usage of multimedia amongst Islamic education lecturers was at the moderate level. Lecturers did not have enough time to prepare any video or animation for their lectures.

Another study on multimedia usage by Wan Noor Hazlina and Kamaruzaman (2009) had shown that a mixed of multimedia tools in learning and teaching process are able to change students' negative mindset on the subject of Islamic teachings. The various multimedia tools had been used such as PowerPoint slides, video clips, mind map and internet to make teaching and learning process interesting and enjoyable. Study indicates multimedia usage is able to change from a dry and plain subject to be fun and interactive lesson.

Study conducted by Norlidah, Saedah, Mohd. Khairul Azman and Zaharah (2013) was to examine the effectiveness of Facebook-based learning in enhances creativity amongst Islamic studies students learning in the secondary education. From this research, Facebook-based learning has potential to increase outcome learning and generate creativity amongst students in Malaysia. Students can improve their creativity and motivate them to be more successful.

Generally, the use of technology is the fastest way in helping teachers and students to learn Islamic teachings. Technology has tremendous beneficial effects in spreading the religion of Islam. However, from the previous studies, the usage of technology is still lacking and need to be improved. Therefore, this study tries to introduce the usage of mobile learning in Islamic education as an alternative way for Muslims in gaining Islamic teachings at their convenience. Hopefully, SMS could help to spread the Islamic teachings amongst the community in Malaysia and make learning available to them at anytime.

Adult Learners

Based on study by Nurul Azni and Nailul Murad (2018), adult learners can be identified as adults who are working and further their study in higher education in universities. They are known as a worker in one place and in the same time they need to attend the classes. Normally, adult learners will be mostly motivated to further their studies by internal rewards such as job promotion, status, their own needs and interests for self-esteem and life enrichment (James, 1994). A study conducted by Nailul Murad (2011) indicated that adult learners are highly motivated, eager to learn, have effective time management, have good social skills, no financial difficulties and have strong family support. This statement was supported by Karen (2011) who stated that the life satisfaction of adult learners are

influenced by their family, work commitments and financial consideration as they come from different backgrounds. Therefore, their good environment will help increase their desire to pursue their studies. Besides, they are motivated to study to solve problems in their life.

According to Kidd (1959), adult learners have accumulated prior skills and a unique store of experience in their life which make a person mature. Some factors which make adult learners more experience are the engagements with responsibility for families, career and social commitments. Adult learners will use problem solving exercises and an analysis of those experiences in their life situation as well as indirectly, and can bring this depth of knowledge to their studies (Kemba, 2006).

Adult learners have the desire to know about the advantages and obtain knowledge before pursuing the study. They always focus on time and do not want to waste their time. They will make sure that they will get the appropriate benefit of learning to be applied to their lives (Kemba, 2006). Besides, adult learners need to know the purpose of learning as well as whether their goals can be achieved or otherwise. Adult learners have their own principles in life. Therefore the desire of adult learners to study is different from children whose desires exist in them without any compulsion.

Theory of Adult Learning, Andragogy

The application of SMS in transmitting *waqf* knowledge among adult learners in this study based on Adult Learning Theory, Andragogy. Andragogy is derived from Greek which combined of two words, “Andre” meaning “man leading” and “gogy” meaning “method”. Andragogy is developed by Malcom Knowles, an American educator in 1973. According to Knowles (1973), “andragogy is an art and science which helps adults to learn”.

The andragogy concept is distinguished from the origin theory of pedagogy where the pedagogical theory is applied to child education. Pedagogy is defined as “the art and science of teaching children” (Zaidatun, 2008). The pedagogy is inappropriate to be applied on adult learners because they cannot be treated the same as children. Adult learners have the concept of the self and independent decision-making compared to children who are fully dependent on teachers to teach them. According to Jing (2009), adult learners also have the desire to learn to better them. The adult learners are mature and possess richer experience in learning environment. Therefore, to appropriate amongst adult learners in learning situation, the theory of andragogy was introduced and popularised.

Andragogical model was originally based on four assumptions which developed by Knowles (1973) and later, Knowles, Holton and Swanson (1998) added two assumptions to the andragogical model. According to Knowles (in Cris, 2007), adults have self-direction where they are total dependent and they are also able to solve their problems in learning environment themselves. Adults have more experience that becomes increasingly rich resources for learning environment. Knowles also stated adults have the readiness to learn where they put the education as a way to achieve for their success in life. Besides, adults tend to have a problem-centred orientation to learn. They also have the motivation to learn and solve the problems in their life. In the meantime, the adults need to know the learning objectives before undertaking any learning and they have reasons why they learn that subject.

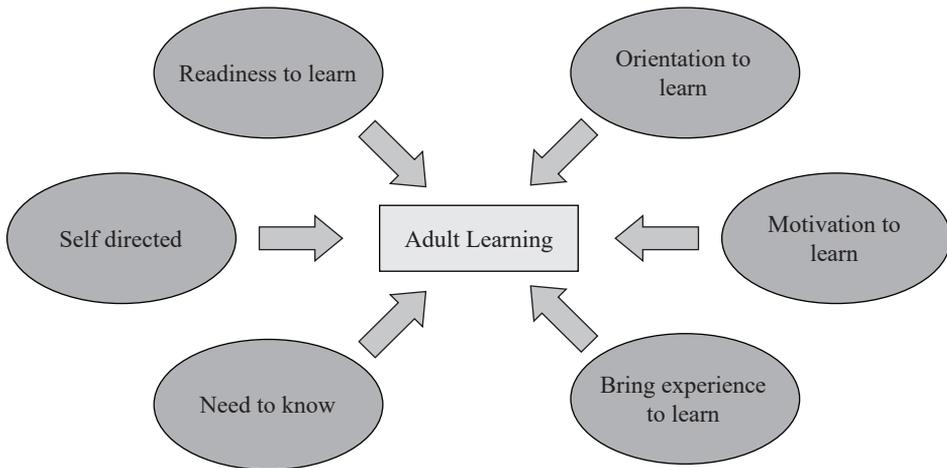


Figure 1. Andragogical model (adopted from Knowles et al., 1998)

Besides, the adult learners can also spread *waqf* knowledge to others. By using SMS, it expands learning because they do not need to be involved in formal or informal learning. It is also able to support an increased diversity of adult learners' knowledge. The role of SMS in andragogy among adult learners are presented in Table 1.

Table 1. The role of SMS in andragogy among adult learners

Function	Andragogy
Content planning	Adult learners mutually satisfied on content and process
Primary duty of SMS	Guides the learning process
Assumption about adult learner	Valuable experience and ability to be involved, knowing learner
Participants	Voluntary
Affective reactions	Adult learners' feelings about content and process are important
Evaluation	Adult learners continually evaluates the utility of past learning and needs for further learning
Assumption about the SMS	SMS is co-learner

METHODOLOGY

The study presented here was based on data collected from 80 adult learners who are pursuing degree courses at the School of Distance Education in Universiti Sains Malaysia, Pulau Pinang. The participants were assigned randomly to one of the four groups which were known as group A, group B, group C and group D. Each groups consists of 20 participants. In this study, some participants were given treatment through SMS based on *waqf* knowledge on two experimental groups while the rest of the participants were not given any treatment. These groups were known as control groups.

Pre- and post-test are used to examine the effects of using SMS on adult learners' knowledge of *waqf*. The main purpose of pre-test is to obtain and gauge the level of prior knowledge about *waqf* knowledge among participants before the treatment is transmitted. The groups that were required to attend the pre-test session were group C and group D. The pre-test consists of 14 multiple choice questions. The researcher has developed the questions based on *waqf* knowledge. Questions were reviewed by two supervisors and a panel of *waqf* experts. Before the post-test session, the participants were required to follow the treatment for six months. The contents are known as treatment or intervention which is transmitted to two of the experimental groups via SMS based on *waqf* knowledge.

The contents were reviewed by supervisors. Next, the contents go through the first stage of correction. At the end of the first stage of correction, the contents have been reviewed by a panel of Muslim scholar. The groups that received the SMS were group B and group C. After finishing the treatment, the participants from all groups were invited to attend the post-test session.

The pre- and post-test results were analysed statistically using the SPSS. Data analyses were performed by using SPSS software 20. Descriptive analysis and two ways ANOVA were used in analysing the data to examine the significance of the pre- and post-test results between the control and experimental groups.

RESULTS

Background of Respondents

In this section, the result of the study was presented. This study involved 80 participants which consist of 20 participants for each randomly assigned group. Data were analysed into simple percentages and frequencies. This demonstrates that participants distribute in both experimental and control groups are shown in Table 2.

Table 2. *N* values for the four groups

Group	<i>N</i>	Pre-test	Treatment (SMS)	Post-test
Group A (Control Group)	20	No	No SMS	Yes
Group B (Experimental Group)	20	No	SMS	Yes
Group C (Experimental Group)	20	Yes	SMS	Yes
Group D (Control Group)	20	Yes	No SMS	Yes

Table 3 shows the total number of participants who participated in this study based on gender. Participants of group A consist of 7 males (35%) and 13 females (65%). Participants of group B also consist of 7 males (35%) and 13 (65%) females. Participants of group C consist of 12 males (60%) and 8 females (40%). Participants of group D are also made up of 12 males (60%) and 8 females (40%). The finding shows that the groups have equal gender distribution.

Table 3. Cross tabulation table according to gender

Gender	Group			
	Group A (No SMS)	Group B (SMS)	Group C (SMS)	Group D (No SMS)
	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)
Male	7 (35)	7 (35)	12 (60)	12 (60)
Female	13 (65)	13 (65)	8 (40)	8 (40)
Total	20	20	20	20

Table 4 shows the total number of respondents who participated in this study based on age. Group A consists of 11 respondents (55%) who are 20–30 years old, 7 respondents (35%) who are 31–40 years old and 2 respondents (10%) who are 41–50 years old. Next, group B consists of 7 respondents (35%) who are 20–30 years old, 9 respondents (45%) who are 31–40 years old and 4 respondents (20%) who are 40–50 years old. Group C consists of 11 respondents (55%) who are 20–30 years old, 7 respondents (35%) who are 31–40 years old and 2 respondents (10%) who are 41–50 years old. Lastly, group D consists of 7 respondents (35%) who are 20–30 years old, 11 respondents (55%) who are 31–40 years old and 2 respondents (10%) who are 41–50 years old. The finding shows that the distribution of respondents according to age is almost equal among the four groups.

Table 4. Cross tabulation table according to age

Age	Group			
	Group A (No SMS)	Group B (SMS)	Group C (SMS)	Group D (No SMS)
	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)
20–30	11 (55)	7 (35)	11 (55)	7 (35)
31–40	7 (35)	9 (45)	7 (35)	11 (55)
41–50	2 (10)	4 (20)	2 (10)	2 (10)
Total	20 (100)	20 (100)	20 (100)	20 (100)

Analysis on the Effect of the Treatment (SMS) on *Waqf* Knowledge among Adult Learners

Table 5 shows the result which was analysed using two-way ANOVA test. The test confirms that the treatment (SMS) [$F(1, 76) = 26.71, p < .05$] has significant effect on post-test score. The pre-test alone did not show the change in post-test score [$F(1, 76) = .247, p > .05$]. The two factors (pre-test*SMS) do not interact to produce any further effect [$F(1, 76) = .469, p > .05$]. This finding shows that there is no interaction between pre-test and treatment in determining the effect of post-test score. Therefore, it can be concluded that the effect of post-test score is due to the treatment (usage of SMS). This implies that the usage of SMS has a significant effect in enhancing *waqf* knowledge of adult learners.

Table 5. Analysis on the effect of the treatment (SMS)

	Sum of square	Df	Mean square	<i>F</i>	Sig.
Pre-test	68.45	1	68.45	.247	.621
SMS	7411.50	1	7411.25	26.71	.000
Pre-test*SMS	130.05	1	130.05	.469	.469
Error	21089.00	76	277.49		

DISCUSSION

In the last 100 years, the growth of mobile learning has attracted a lot of attentions. Some researchers involved in studying on the use of mobile learning especially in education field (Mohamed Amin & Ebrahim, 2013). This has been proved from several previous studies that mobile learning has brought various contributions and positives changes to the selection of a preferred path for learning in education sectors. However, the use of mobile learning in Islamic education is still limited. Thus, as the result, this study tried to investigate the potential usage of SMS in enhancing *waqf* knowledge among adult learners.

According to the results of the study, the usage of SMS is suitable to use as an additional method in the delivery of Islamic teachings among adult learners that does not involve classroom learning considering the fact that they have so many responsibilities and also need to divide their commitment to job, family, etc. SMS can also motivate adult learners to improve their *waqf* knowledge from chunks of messages delivered to them daily (Siti Sarah, 2011).

Moreover, SMS can be applied in various fields of learning including in Islamic education. This is because the use of SMS is quicker, efficient, cheaper and also offer convenience in communicating. According to Hafizul Fahri and Khairulanuar (2012), the SMS should be developed because it can be more fun, interactive, intuitive and personalised education. SMS also provide the facility to review the information from everywhere at every time and helps learners to get the right information (Donalson, 2011).

In addition, the SMS also contributes in collaborative learning. Learners can share their information with others quickly and fast without incurring high costs. Besides, they can use the SMS as a tool for informal learning. The information received can motivate them to study on their own and be able to support independent learning.

It is also as an alternative way for Muslims to get the information about Islamic teachings quickly and accurately. Finally, the usage of SMS can also contribute to the global commitment to provide quality education for children, youth and adults.

Besides, this study also supports the theory of adult learning, Andragogy. The characteristics of andragogy used in this study are as follows:

1. Motivation to learn

The use of SMS in transmitting of *waqf* knowledge attempts to provide a different approach systematically. Adult learners have self-esteem and self-satisfaction. Therefore, the usage of SMS is as an additional way to guide adult learners to acquire *waqf* knowledge which has been validated by the Muslim scholars. According to Wall (2010), adult learners are motivated to learn when there is a significant relationship between contents provided and their life. The syllabus content covers the basic *waqf* information and it is designed for easy understanding. Furthermore, Mohd Alif et al. (2014) in their study on teaching training online surveillance showed that the increase of motivation will occur due to support or guide from any form of mechanism. Issham, Rozhan and Thenmolli (2010) also supported the notion that using SMS will produce motivation amongst students in learning environment with the use of simple language. Therefore, the researcher used SMS as a mechanism to increase the motivation and exposure of *waqf* knowledge among adult learners by transmitting the contents on weekly basis.

2. Self-direction

A self-directed person is a person who matures from being dependent to being independent. In a learning situation, it is known as learner-centred where the adult learners are not entirely dependent on the teacher. The usage of SMS should be learner-centred. Adult learners should be able to use SMS and the information provided to increase self-direction in learning. The contents provided in the SMS application serve as additional resources for them. According to Janet (2011), SMS gives the opportunity for underprivileged students or geographically disadvantaged in the selection of suitable courses in higher education academic degree. Thus, the usage of SMS is very flexible for convenience especially in terms of timing where adult learners can direct their own learning at any time and place.

3. Orientation to learn

Orientation to learn is a person tendency to a problem-centred learning that is related to real life situations. For adult learners, what they learn are beneficial to them and applicable to real life situations. The *waqf* knowledge syllabus provided can be as a guide to them and it also allows adult learners to relate to their past and current life experiences. It is appropriate because *waqf* information is associated with relevant issues to human, in general. According to BenMoussa (2003) in the study of Motiwalla (2007), it is stated that the usage of SMS can enhance the users' orientation by having better access in addition to do a better job in balancing their work life through a productive use of time. Besides, through the usage of SMS, the adult learner can control or filter the information individually.

4. Need to know

Adult learners want something that adds value to their life. In the context of adult learners, they want to know why they need to learn something and why they need to receive the contents through SMS. In this study, the researcher provided the contents syllabus that focus on real-life scenarios. Through the content of SMS, the adult learners can add their knowledge of *waqf* without attending any lectures on religious matters. It delivers educational opportunities as it is considered to be more flexible and convenient in learning environment.

CONCLUSION

Generally, the usage of SMS affects adult learners' knowledge about *waqf* knowledge whereby the finding shows the adult learners' score increased after the treatment. They also show positive acceptance of SMS. Therefore, the usage of SMS has potential as an additional tool to enhance the Islamic knowledge and to spread the Islamic teaching among all communities. It is suggested that the SMS-based learning should include two-way communication between learners and researcher. The learners can ask any questions to the researcher and then they will get feedback and response from the researchers immediately.

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