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Design And Development Of Mobile-Learning Model For Teaching Arabic Language Reading Skills To Non-Arab Speakers In Higher Education Institutions.

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Abstract

Mobile-learning is gaining attention in the global teaching and learning circle. Today, different countries see the need to imbibe mobile-learning in the instruction process in schools. It provides educational content on personal pocket devices such as PDAs, palmtops, smartphones, and mobile devices. Therefore, this study aims at designing and developing mobile-learning model for teaching Arabic language to non-Arab speakers in the Institute of Arabic Language for Non-Arab Speakers, King Saud University, Kingdom of Saudi Arabi. It adopted a developmental research design. Experts opinion were sort for on activities. At the end, some activities were developed for teaching Arabic language to non-Arab speakers in the university. It was found that these activities will enhance effective teaching and learning of Arabic language by non-Arab speakers. If these activities were adequately and effectively implemented universities, non-Arab speakers will be eager to learn Arabic language and their difficulties in learning the language will be overcome. This will automatically improve students performance in learning Arabic language in higher education institutions.

Keyword: mobile-learning model, Arabic language reading skills, non-Arab speakers

Diseño Y Desarrollo Del Modelo De Aprendizaje Móvil Para La Enseñanza De Habilidades De Lectura En Lengua Árabe Para Ponentes No Árabes En Instituciones De Educación Superior.

Resumen

El aprendizaje móvil está ganando atención en el círculo global de enseñanza y aprendizaje. Hoy, diferentes países ven la necesidad de incorporar el aprendizaje móvil en el proceso de instrucción en las escuelas. Proporciona contenido educativo en dispositivos personales de bolsillo como PDA, computadoras de mano, teléfonos inteligentes y dispositivos móviles. Por lo tanto, este estudio tiene como objetivo diseñar y desarrollar un modelo de aprendizaje móvil para la enseñanza del idioma árabe a hablantes no árabes en el Instituto de Lengua Árabe para hablantes no árabes, Universidad King Saud, Reino de Arabia Saudita. Adoptó un diseño de investigación de desarrollo. La opinión de los expertos era adecuada para las actividades. Al final, se desarrollaron algunas actividades para enseñar el idioma árabe a hablantes no árabes en la universidad. Se descubrió que estas actividades mejorarán la enseñanza y el aprendizaje efectivos del idioma árabe por parte de hablantes no árabes. Si estas actividades se implementaran de manera adecuada y efectiva en las universidades, los hablantes no árabes estarán ansiosos por aprender el idioma árabe y se superarán sus dificultades para aprender el idioma. Esto mejorará automáticamente el rendimiento de los estudiantes en el aprendizaje del idioma árabe en instituciones de educación superior.

Palabra clave: modelo de aprendizaje móvil, habilidades de lectura en árabe, hablantes no árabes

INTRODUCTION

Mobile-learning is gaining attention in the global teaching and learning circle (Shili et.al.,2016). Today, different countries see the need

to imbibe mobile-learning in the instruction process in schools. In Saudi Arabia, it was estimated in 2015 that there were 3.747 million telephone lines and 52.8 million mobile cellular subscriptions which is more than the total population of the country and 21.96 million people (69.62 percent of the country's population) are connected to internet (The World Bank, 2016). Looking at these staggering figures, Quinn (2011) contends that mobile-learning is for real and there is no hype to it and it is not another big thing for the future. It is already a big thing for today. Also, as a result of this new development and growth of mobile learning, the United Nations Educational, Scientific and Cultural Organisation (UNESCO) formally recognized mobile-learning and spearhead the draft of policy guidelines for mobile learning (UNESCO, 2011).

The salient nature of language and its underlining significant in relations to other subjects of education implies that it requires a distinctive curriculum and approach to teaching. For students to attain fluency in any language they learn they need more than just what the traditional method of teaching language offers in terms of grammar and other aspects of language which can usually be mastered in classroom environment. It has been proven that learning certain aspects of language such as vocabulary, grammar, and so on is easier than speaking fluently in that language (Steve & Hiroshi, 2013). To solve such problem there is need for suitable teaching methods that suit the size of a class, the subject level as well as the language level of the students (Quing-Xue & Jin-Fang,2007; McKeachie et.al.,1990). Also, teachers usually follow traditional method of language teaching where students are given exercises related to various aspect of language such as structures, pronunciation, intonation and vocabulary learning. This often does not improve students' Arabic language fluency and need to succeed in their tertiary education ( ). Various scholars have studied reading and orthography skills in Arabic language (Taha, 2016; Taha & Saiegh-Haddad, 2016; Khateb, Abdelgani, Taha & Ibrahim, 2014; Hussein, 2014; Taha, 2013; Ibrahim, 2013; Taha, Ibrahim & Khateb, 2012). Due to the orthographic complexity and linguistic uniqueness, Arabic reading skills has been one of the major obstacles students face in learning Arabic language (Taha,

2013). Although all the studies stated here focused on Arabic reading skills, none of them proposed an implementation model that would help students deal with challenges they face in Arabic reading skills. Similarly, none of the studies has tried to look into the possibility of adopting technology in order to help students deal with the obstacles they face in learning Arabic reading skills. Therefore, this study aims at filling the gap observed in previous studies by examining the mobile-learning devices in enhancing teaching Arabic language reading skills to non-Arab speakers in higher education institutions..

LITERATURE REVIEW

Mobile-learning is defined as the ability to obtain or provide educational content on personal pocket devices such as PDAs, palmtops, smartphones, and mobile devices (Keegan, 2005). Behera (2013) defined mobile-learning as deliverance of education or learning activities through the use of portable devices. Ally (2009) conceived mobile-learning as process of using mobile devices to access, study learning materials and communicate with fellow students, instructors and institutions. In addition, Peters (2007) defined mobile-learning as a division of electronic-learning which helps in making the educational process just in time, just enough and just for me. The educational content can be in any form, written, audio, video and so on. As defined by Quinn (2000), it is simply learning that takes place with the help of mobile devices, or the intersection of mobile computing (the application of small, portable and wireless computing and communication devices). Wierzbicki (2002) who underscores the importance of wireless mobile devices in education by stating that it will help in bridging the gap that the developing and third world countries have been suffering from because mobile phones are more affordable than computers. The mobile-learning integration into formal education will take advantage of the ample technological opportunities pertaining to mobile learning, teaching and education. This, therefore, will bring together formal and informal and social learning (Quinn, 2011).

Importance of Mobile-Learning Devices in Teaching and Learning Process

A number of articles and scholarly works were published at that

stage pointing to certain issues faced by wireless networking, its development as well as report keeping update with the wireless and mobile enabled schools (Pascopella, 2006; Norris and Sloway, 2008). With this growing interests, challenges and increasing application of the integration of technology in higher learning, NCEF published in 2007 an article on resource list regarding the integration of technology in higher learning institutions. Also, given the kind of success mLearning registered in education, Shin et.al.,(2007) reviewed the effectiveness of mLearning in lower education. They found that mLearning makes a positive impact to students' motivation and achievement and it is effective in research, management and sharing of ideas, data gathering and analysis, as well as facilitating communication and coloration. In addition, different countries in developed and developing countries have adopted the use of mobile-learning in education institutions(Al-Hujran et.al.,2014; Muhammed Ridhuan, 2014; UNESCO,2012; Attawel et.al.,2010). This actually impact positively on their educational system (Muhammed Ridhuan,2014; Norris & Sloway,2008; Shn et.al., 2007; Pascopella,2006). It was also found to be responsible for education transformation in Saudi Arabia (Allam, 2011). The optimization of mobile frequencies to 4G means that even the developing countries are going to start demanding for more affordable devices and connectivity which will, by extension, spill over into the educational institutions (Kyriazakos, Soldatos and Karetsos, 2008).

In the case of language learning, the use of mobile devices is thought to help in making impact on content delivery as well as collaborative learning (Kukulska-Hulme, 2010; Godwin-Jones, 2011) for the accessibility, immediacy, interactivity and situating of instructional activities (Bachore,2015; Ogata & Yano, 2005). This was confirmed by the study of Sandberg et.al.(2011) who found that mobile learning could compliment formal learning in classroom by permitting students to take home their devices for the purpose of self-practice. Mobile devices are also believed to improve students' behavior as they can serve as pull factor, when they allowed in class, that attract students to improve their attendance, motivation, higher commitment when working on learning tasks as well as decreasing behaviour-

al problems (Elfeky & Masadeh, 2016; Pollara & Broussard, 2011; Wang et.al., 2009; Swan et.al., 2005).

Newspaper	*Numbers of articles before 9/11*	*Numbers of articles after 9/11*	*Increase percentage*
Guardian	817	2,043	250%
Independent	681	1,556	228%
Times	535	1,486	278%
Daily Mail	202	650	322%
Daily Express	139	305	219%

mobile-learning promotes active participation of learners as well as profitable negotiation of knowledge and creativity. Several other previous studies have pointed to collaboration as the approach that aid students' engagement in mobile-learning(Gay et.al., 2002). The major advantage of collaborative learning is the fact that it enables learning to shift from being teacher-centered learning to learner-centered learning promoting decision-making skills, management skills, and equal students' participation of all (Ormrod, 2004).Collaborative learning is effectively supported through the use of mobile computer devices (Zurita & Nussbaum,2004)

METHODOLOGY

Research Design: In this study, the researchers adopted developmental research design. Adamski (2000) conceived developmental research design as a systematic study of the process of developing, designing and evaluating instructional programs effectively and in a manner that meets criteria of internal consistency. This type of research design was adjudged to be useful in creating, planning and designing models that can enhance effective teaching and learning process (Creswell & Piano-Clark, 2011; Richey & Klein, 2005).Therefore, we develop model for teaching and learning religious-based subject using the in-class debate.

Population and Sampling: The population used in this study consists of 8 experts. These experts consist of 3 Professor, 3 Associate Professors and 2 Assistant Professors. It is worthy to mention that these experts have over 5 years work experience teaching Arabic language. Also, some of them are in the field of curriculum and instruction in their respective universities. Furthermore, purposeful sampling method was adopted in selecting these 8 experts. Purposeful sampling enables researcher to select those that are considered

appropriate for a particular study (Fraenkel, et.al, 2015). It also helps in ensuring that those who are expert and capable of evaluating the activities are only considered. As a result, these experts were considered appropriate for this study.

Data Analysis: In order to analyze results of the findings, these researchers used nominal group technique in ascertaining and determining the views of experts based of the information provided. After gathering opinion of these experts, we broke down the opinions into different activities using the nominal group technique method. Thereafter, we develop a mobile-learning model for teaching Arabic language to non-Arab speakers in Arab speaking universities as a way of stimulating students' interest and enhancing their readiness to learn Arabic language at university level.

DATA ANALYSIS/FINGDINGS

This section presents the result of the findings that have been generated from the modified nominal group technique (NGT). The result of the findings determined the language activities that qualified to be included in the final model. At the end of the second NGT session, the final list of activities were proposed and consensually agreed upon by the group of experts to use for development of the m-learning implementation model. The experts ranking and prioritization of the learning activities are shown in Table 1 based on each expert's individual voting decision. The aim of the voting session was not to drop any of the learning activities at the final stage of NGT for the fact that all the experts had already made a decision on the final list. Rather it was for the ranking of the each expert's individual preference on each of the learning activities on a scale of 1 to 7.

Table 1: *NGT Findings: Ranking and Prioritization of Learning Activities*

	Learning Activities	Ex 1	Ex 2	Ex 3	Ex 4	Ex 5	Ex 6	Ex 7	Ex 8	Total	Priority
1	Reading short stories via mobile learning devices in the classroom	5	6	5	6	5	4	6	6	43	16
2	The use of mobile learning devices in reading specialized scientific studies on the development of reading skills in Arabic for non-native speakers	6	6	6	7	6	6	6	6	49	6
3	Record and upload presentations and track comments from lectures and various groups via mobile devices	6	5	6	6	5	4	6	6	44	14
4	Exchange of text messages, e-books and or written documents with other students in order to improve proficiency in reading skills	6	6	7	7	6	6	6	5	49	7
5	Form small groups on the Internet (social blogs) in order to exchange and improve the skills of reading of Arabic language.	7	7	6	7	5	7	7	6	52	3
6	Form an online reading club where its members can read books and encourage each other to read more	6	6	7	6	4	5	5	5	44	15
7	Form online small groups where students can discuss and support each other on reading problems	4	4	4	5	4	5	5	5	36	25
8	Form heterogeneous groups of students to help each other in terms of reading.	5	6	6	6	6	6	6	6	47	10
9	Attend a class or seminar to discuss reading problems for non-Native Arabic speakers	7	7	6	7	7	7	7	7	55	1
10	Use mobile devices to play language games that contain reading exercises, individually or in groups.	7	7	6	7	6	6	6	5	50	5
11	Share Arabic literature materials via mobile devices.	6	6	7	7	6	7	6	6	51	4
12	Conduct asynchronous online assessment for students' reading activities through mobile devices by other students.	7	7	6	7	7	7	7	6	54	2
13	The instructor assesses the level of reading skills of students using a mobile learning device by reading an electronic text.	4	4	5	5	4	5	5	5	37	22
14	Create virtual classes and develop reading texts where student can participate	4	5	4	4	4	5	5	5	36	26
15	Establish a group on WhatsApp application where it is possible to share the texts of reading.	6	6	7	6	5	6	5	5	46	11
16	Use a social networking media application to create Groups to share reading texts where students can participate by recording their voice and send it to the group where everyone can know the errors of the reading and provide the correct reading for everyone to listen	4	4	5	4	6	6	5	5	39	20
17	Use SMS as part of the Arabic language course, where students receive repeated vocabulary messages (which also serve as a reminder to review)	7	6	6	5	6	5	5	6	46	12
18	Engage students in a reading comprehension contest based on text in a mobile application.	6	6	7	7	6	5	5	4	46	13
19	Students participate in a play loaded on mobile phone where the students read their	5	4	5	4	4	4	5	5	36	27

	own lines from the play script												
20	Instruct students to read about a specific topic and then discuss it with the instructor using mobile learning devices	5	5	5	5	4	5	6	5	40	18		
21	Assign students to read about reading skills, how to develop them using mobile learning devices, and then discuss this with colleagues in a discussion session and supervised by the instructor	5	6	6	7	6	5	6	7	48	9		
22	Conduct a "What did you understand from your reading" contest where the instructor uploads an e-book to the group of students who are participating in the WhatsApp, with a date for discussion	5	5	6	5	6	5	5	5	42	17		
23	Ask students during class lecture to present what they read from the headlines in the local electronic newspapers	6	6	6	7	6	5	6	6	49	8		
24	Show samples of texts full of linguistic mistakes, and then conduct a contest for those who found the largest number of errors, where responses will be via an application in mobile device.	5	5	6	4	4	4	5	4	37	23		
25	Students read feature articles and then express the best article that was read	4	4	5	4	5	4	5	4	35	28		
26	Students read a list of tweets and chose the best of the tweets	4	5	5	6	5	4	4	4	37	24		
27	The teacher tweets through his account by asking his students about matters that concern them and the students follow the tweet from their own mobile device	4	5	5	5	6	5	5	5	40	19		
28	Make a presentation about reading in Arabic and then send it to the group via a social application.	5	5	6	5	5	4	5	4	39	21		

Note: Fr = Frequent

Table 1 above showed that the result of NGT identified 28 learning activities that have been consensually agreed upon by the experts to be the elements for the construction of mobile-learning implementation model. In addition, the table also displayed the ranking number for each one of the learning activities as ranked by the experts. The learning activities were graded in a scale of 1 to 7 with indicating the lowest score whereas 7 indicating the highest score. The lowest score given by the experts was four (4) which represents 'favourable' whereas the highest value given was seven (7) representing 'most favourable'. Thus, the learning activities could be arranged in the following order based on the priority values calculated as demonstrated in Table 1:

1. Attend a class or seminar to discuss reading problems for non-Native Arabic speakers.
2. Conduct asynchronous online assessment for students' reading activities through mobile devices by other students.
3. Form small groups on the Internet (social blogs) in order to exchange and improve the skills of reading of Arabic language.
4. Share Arabic literary materials via mobile devices.
5. Use mobile devices to play language games that contain reading exercises, individually or in groups.
6. The use of mobile learning devices in reading specialized scientific studies on the development of reading skills in Arabic for non-native speakers.
7. Exchange of text messages, e-books and or written documents with other students in order to improve proficiency in reading skills.
8. Ask students during class lecture to present what they read from the headlines in the local electronic newspapers.
9. Assign students to read about reading skills, how to develop them using mobile learning devices, and then discuss this with colleagues in a discussion session and supervised by the instructor.
10. Form heterogeneous groups of students to help each other in terms of reading.
11. Establish a group on WhatsApp application where it is possi-

ble to share the texts of reading.
12. Use SMS as part of the Arabic language course, where students receive repeated vocabulary messages (which also serve as a reminder to review).
13. Engage students in a reading comprehension contest based on text in a mobile application.
14. Record and upload presentations and track comments from lectures and various groups via mobile devices.
15. Form an online reading club where its members can read books and encourage each other to read more.
16. Reading short stories via mobile learning devices in the classroom.
17. Conduct a "What did you understand from your reading" contest where the instructor uploads an e-book to the group of students who are participating in the WhatsApp, with a date for discussion.
18. Instruct students to read about a specific topic and then discuss it with the instructor using mobile learning devices.
19. Use of Tweeter by the lecturer and discuss with the students about matters that concern their reading problems and encourage the students to tweet.
20. Use a social media app to create Group to share reading texts where students can participate by recording their voices and send it to the group for everyone to assess
21. Make a presentation about reading in Arabic and then send it to the group via a social application.
22. The instructor assesses the level of reading skills of students using a mobile learning device by reading an electronic text.
23. Show samples of texts that contain linguistic mistakes, and then conduct a contest for those who found the largest number of errors, where responses will be via an application in mobile device.
24. Students read a list of tweets and chose the best of them.
25. Form online small groups where students can discuss and support each other on reading problems.
26. Create virtual classes and develop reading texts where student can participate.

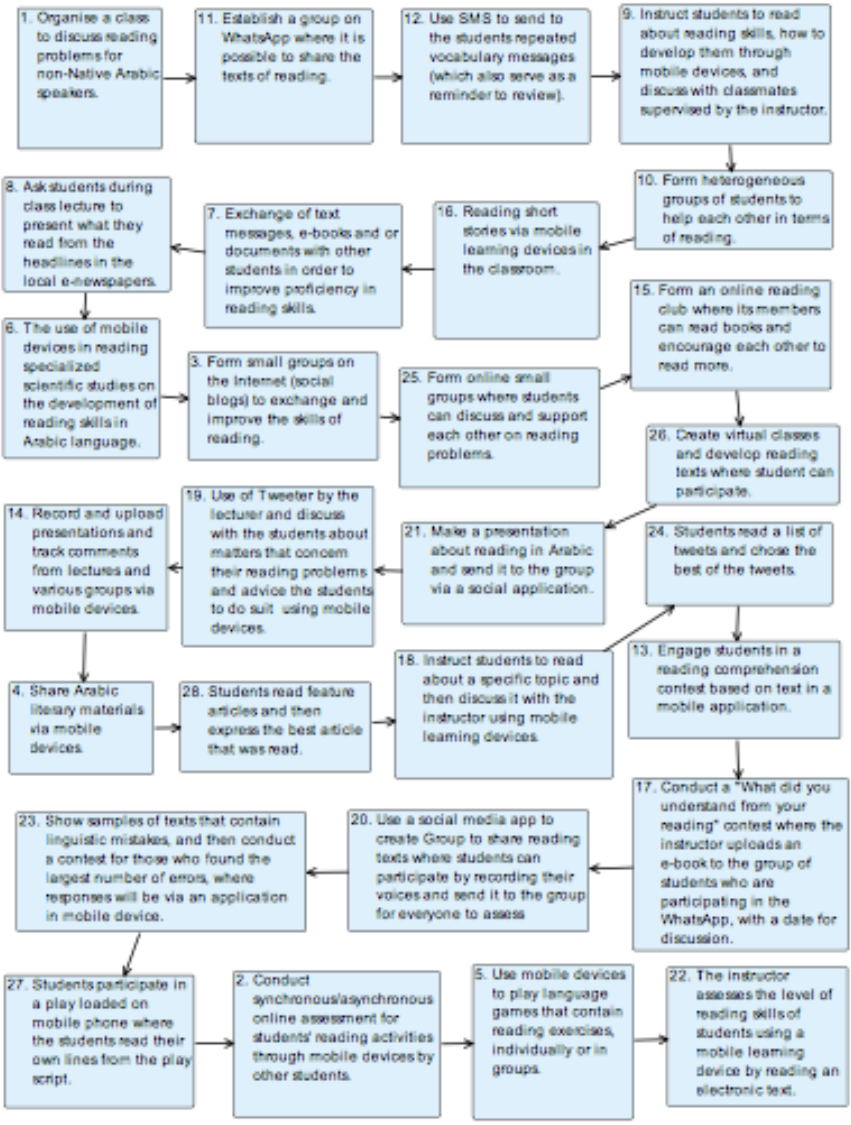
27. Students participate in a play loaded on mobile phone where the students read their own lines from the play script.
28. Students read feature articles and then express the best article that was read.

The next step is to develop the model. It is pertinent to reiterate that the intention of developing the model is to augment the formal classroom learning experience not to use it solely as a mobile learning that would replace the formal classroom learning. It should also be added that mobile-learning could be employed in teaching and learning full courses. However, as opined by Quinn (2011a) and Quinn (2011b), the major advantage of mobile-learning comes in using it as a performance support and complementary tool. Thus, on this basis the model herein developed should serve as a guide on how to incorporate formal classroom learning and informal mobile-learning in augmenting learners' learning needs in the process of learning reading skills of Arabic language. By using the ISM software, it means that the model is structural by design developed interpretively by experts. The model has been constructed by a series of related learning activities described as elements of the model. The learning activities are related based on the 'contextual phrase' and the 'relation phrase'. Both contextual phrase and relation phrase have been determined in accordance with the course objectives of Arabic programme for the non-native speakers. The following are the course outcomes:

1. To know the Arabic letters and their pronunciation verbally as well as in written.
2. To be able to read Arabic texts correctly and competently.
3. To be able to comprehend Arabic texts correctly and competently.
4. To know Arabic language literature feature and how to put them in use.
5. To know fundamental ideas of Arabic culture and applying in reading skills.

In general, the course objective is to produce students who are capable of reading complex Arabic texts correctly and comprehending them thoroughly and competently. It is on the basis of the learning activities determined through nominal group technique. Therefore,

the interpretive structural mobile-learning model was developed for the reading skills of the pre-university program of Arabic for the non-native speakers. This was done through the experts' collective decision using the ISM computer software as to be presented in Figure 1 below.The learning activities were keyed in into the ISM computer software in accordance with the priority list as listed above. It is clear from the priority list that the learning activity 'Attend a class or seminar to discuss reading problems for non-Native Arabic speakers' came first in the list. Therefore, this activity will lead the pairing with other elements during the ISM session being the most important activity as stated by Janes (1988).



Interpretive Structural Model - Model Completed

After completing the model, it was presented to the experts for minor amendments before its final version. It was during this process that the experts suggested that the model should be classified into three (3) domains: Knowledge Input Activities, the Enabling Skills Activities, and the Evaluation and the reflection activities. The first classification, Knowledge Input Activities, consists of learning activities (learning activities 1, 9, and 21) that help the students in obtaining the necessary information and knowledge about reading skill of Arabic for the non-native speakers program. The second category is the Enabling skills activities (all learning activities except seven, three for Knowledge Input and four for Evaluation and reflection activities) which are considered probably the most important activities that aid the students in developing their reading skills through formal and mobile-learning. The third category is the evaluation and reflection activities (learning activities 2, 20, 22 and 23) which are set of learning activities to evaluate the students' reading skills and for their reflection of their acquired skills paving the way for them to either improve on them or develop a set of new ones.

With reference to Figure 1, the experts also suggested and agreed that learning activities 3 (Form small groups on the Internet (social blogs) in order to exchange and improve the skills of reading of Arabic language) should be connected with learning activity 15 (Form an online reading club where its members can read books and encourage each other to read more) and learning activity 25 (Form online small groups where students can discuss and support each other on reading problems). The experts stated that once the online site is created, it can be used by the students to exchange Arabic reading materials for their improvement, also as a reading club where the students can share and discuss the books they read and as a platform where they discuss and support each other on problems they encounter in the process of acquiring the reading skill. Likewise, the experts also proposed that learning activity 11 should be a precursor for the learning activities 3, 7, and 17. This is because forming a group via the social media application such as WhatsApp will help conduct the other three activities mentioned. The three activities and

Table 2

Classification of the Learning Activities into three (3) Domains:

Knowledge Input Activities	Enabling Skills Activities	Evaluation/Reflection Activities
1. Attend a class or seminar to discuss reading problems for non-Native Arabic speakers	3. Form small groups on the Internet (social blogs) in order to exchange and improve the skills of reading of Arabic language	2. Conduct asynchronous online assessment for students' reading activities through mobile devices by other students.
9. Assign students to read about reading skills, how to develop them using mobile learning devices, and then discuss this with colleagues in a discussion session and supervised by the instructor	4. Share Arabic literary materials via mobile devices	20. Use a social media app to create Group to share reading texts where students can participate by recording their voices and send it to the group for others to assess
21. Make a presentation about reading in Arabic and then send it to the group via a social application.	5. Use mobile devices to play language games that contain reading exercises, individually or in groups	22. The instructor assesses the level of reading skills of students using a mobile learning device by reading an electronic text.
	6. The use of mobile learning devices in reading specialized scientific studies on the development of reading skills in Arabic for non-native speakers	23. Show samples of texts that contain linguistic mistakes, and then conduct a contest for those who found the largest number of errors, where responses will be via an application in mobile device.
	7. Exchange of text messages, e-books and or written documents with other students in order to improve proficiency in reading skills.	
	8. Ask students during class lecture to present what they read from the headlines in the local electronic newspapers.	
	10. Form heterogeneous groups of students to help each other in terms of reading	
	11. Establish a group on WhatsApp application where it is possible to share the texts of reading	
	12. Use SMS function as part of the Arabic language course, where students receive repeated vocabulary messages (which also serve as a reminder to review).	

	13. Engage students in a reading comprehension contest based on text in a mobile application.	
	14. Record and upload presentations and track comments from lectures and various groups via mobile devices.	
	15. Form an online reading club where its members can read books and encourage each other to read more.	
	16. Reading short stories via mobile learning devices in the classroom.	
	17. Conduct a "What did you understand from your reading" contest where the instructor uploads an e-book to the group of students who are participating in the WhatsApp, with a date for discussion.	
	18. Instruct students to read about a specific topic and then discuss it with the instructor using mobile learning devices.	
	19. Use of Tweeter by the lecturer and diveuss with the students about matters that concern their reading problems and encourage the students to tweet.	
	24. Students read a list of tweets and chose the best of them.	
	25. Form online small groups where students can diveuss and support each other on reading problems.	
	26. Create virtual classes and develop reading texts where student can participate.	
	27. Students participate in a play loaded on mobile phone where the students read their own lines from the play script.	
	28 Students read feature articles and then express the best article that was read.	

DISCUSSION

Based on the result of this study, we found that some activities are important in adopting mobile-learning in teaching reading skills to non-Arab speakers in higher education institutions. These activities if well implemented and adopted in the teaching program for non-Arab speakers, students will be able to appreciate, understand and comprehend the essence of learning Arab language in universities with the aid of mobile-learning devices. This study found that mobile-learning devices are useful especially in teaching and learning in modern day universities. With the aid of mobile devices like smartphones, whatsapp, youtube, etc, students can compliment what they have learnt in the classroom. This can be done by ensuring that students learnt at their own pace and convinience. This view was shared by Sandberg et.al(2011) who argued that using mobile-learn-

ing devices in education system will compliment the formal learning in classroom because these devices will encourage self-practice and give room for personalized learning.

Furthermore, the study found that the activities stated in the mobile-learning model if properly and effectively followed, will impact positively on the behaviour of the students towards learning Arabic language. It will also improve the reading skills of non-Arab speakers learning in Arab speaking countries. This view corresponds with the position of Wang et.al(2016) who found that mobile-learning impacts positively on students' learning behaviours and performance. In the same vein, Elfeky and Masadeh (2016) support this based on the result of their study. They found that mobile-learning has positive effect on students achievement and conversational skills. Therefore, the findings supports the need to develop and design mobile-learning model for teaching Arabic language reading skill to non-Arab speakers as a way of arousing the interest of non-Arab speakers and enhance their academic performance.

RECOMMENDATION/CONCLUSION

Mobile-learning devices like the use of smartphones, WhatsApp, youtube and so on can aid teaching and learning of Arabic language especially for teaching non-Arab speakers. With the aid of the mobile-learning devices, students can learn some difficult words on their own and at their own pace.Furthermore, higher education institutions need to train their staff and students on how to adopt the mobile-learning devices in teaching and learning process.This can be done by organizing seminars and workshops on the impact of e-learning and use of mobile-learning devices in enhancing effective teaching and learning in higher education institutions. In addition, management of various higher education institutions must encourage students (both local and international) to adopt mobile-learning devices to the optimum. Also, management must provide adequate facilities like computer laboratories, language centers, stable internet facilities, and so on to facilitate quality research and for proper implementation of e-learning. In summary, if students from non-Arab

speaking background adopt mobile-learning devices appropriately and efficiently in learning Arabic language, they will find learning of the language easy. It will also improve their reading skills and academic performance in Arabic language in their respective higher education institutions.

REFERENCES

Al-Hujran, O., Al-Lozi, E. & Al-Debei, M. M. (2014). Get ready to mobile learning:
Examining factors affecting college behavioural intentions to use m-Learning in Saudi
Arabia. Jordan Journal of Business Administration, 10 (1), 111-128.
Attewell, J., Savil-Smith, C., Douch, R. & Parker, G. (2010). Modernizing education and
training: Mobilizing technology for learning. London, Mobile Learning Network
(MoLeNET).
Bachore, M. M. (2015). Language learning through mobile technologies: An opportunity
for language learners and teachers. Journal of Education and Practice, 6 (31), 50-53.
Creswell, J.W., & Plano-Clark, V.L. (2011). Designing and conducting mixed methods
research (2nd ed.). Thousand Oak, CA: Sage Publication.

Elfeky,A.M., & Masadeh, T.S.Y.(2016). The effect of mobile learning on students' achievement and conversational skills. International Journal of Higher Education, 5 (3), 20 - 31.
Gay, R., Rieger, R., & Bennington, T. (2002). Using mobile computing to enhance field
study. In T. Koschman, R. Hall, and N. Miyake (Eds.), CSCL 2: Carrying forward the
conversation (pp. 507-528). Mahwah, NJ: Erlbaum.
Godwin-Jones, R. (2011). Emerging technologies: Mobile apps for language learning.
Language Learning & Technology, 15 (2), 2-11.
Hussein, A.M. (2014). Reading Arabic shallow and deep genres: In-

dispensible variables
to science of reading. Journal of Education and Learning, 3(1), 60-69.
Ibrahim, R. (2013). Reading in Arabic: New evidence for the role of vowel signs.
Creative Education, 4(4), 248-253.
Inkpen, K. M. (1999). Designing handheld technologies for kids. Personal Technologies,
3, 81-89.
Keegan, D. (2002), The future of learning: ZIFF papiere 119: From eLearning to
mLearning. Retrieved October 2, 2017 from http://www.fernuniha-gen.de/ZIFF/
ZP_119.pdf., 19.08.2010.
Kukulska-Hulme, A. (2010). Learning cultures on the move: Where are we heading?
Journal of Educational Technology and Society, 13 (4), 4-14.
Kyriazakos, S., Soldatos, I., & Karetsos, G. (2008). 4G mobile & wireless communication
Centaurns technologies (1st. ed.). Aalborg, Denmark: River.
McKeachie, W. J., Asghar Iran-Nejad, & Berliner, D. C. (1990). The multi-sourcenature
of learning: An introduction. Review of Educational Research, 60(4), 509-516.
Muhammad Ridhuan, T.L.A. (2014). Development of activity-based mLearning
implementation model for undergraduate English language learning. (Doctoral
Dissertation Submitted to the Faculty of Education, Universiti Malaya).
Norris, C., & Soloway, E. (2008). Getting mobile. District Administration, 44 (8), 20-24.
Ogata, H., & Yano, Y. (2005). Knowledge awareness for computer-assisted language
learning using handhelds. International Journal of Learning Technology, 5 (1), 435-449.

Ormrod, J.E. (2004). Human learning. (4th ed.). Uppersaddle River, NJ: Pearson Prentice
Hall.
Pascopella, A. (2006). Wireless communication. District Administration, 42 (2), 52-55.
Pollara, P., & Broussard, K. K. (2011). Mobile technology and student learning: What
does current research reveal?. International Journal of Mobile and Blended Learning
3 (3), 34-42.
Quinn, C. N. (2000). mLearning: Mobile, wireless, in your pocket learning. LineZine,
Fall 2000. Retrieved November 3, 2017 from http://www.linezine.com/2.1/
features/cqmmwiyp.htm
Quinn, C. N. (2011). Designing m-Learning: Tapping into the mobile revolution for
organizational performance. San Francisco: Pfeiffer.
Shili, M, Moez, C., Santosh, K. B.,(2016). Pervasive mobile learning system in the new millennium. American Journal of Educational Research, 4(18),1257-1264.
Shin, N., Norris, C., & Soloway, E. (2007). Findings from early research on one-to-one
handheld use in K-12 education. Ubiquitous Computing in Education, 19-39.
Steve, T.F. & Hiroshi, F. (2013). Time is of the essence: factors encouraging
out-ofclassstudy time. ELT Journal, 67(1), 31-40. Retrieved January 21, 2013from
http://eltj.oxfordjournals.org/content/67/1/31.short.
Swan, K., van't Hooft, M., Kratcoski, A., & Unger, D. (2005). Teaching and learning
with mobile computing devices: Closing the gap. Mobile Technology. In H. van der
Merwe & T. Brown, Mobile Technology: The Future of Learning in Your Hands, mLearn

2005 Book of Abstracts, 4th World Conference on mLearning, Cape Town, 25-28
October 2005. (pp. 157-161). Cape Town.
Taha, H.Y. (2016). Deep and shallow in Arabic orthography: New evidence from reading
performance of elementary school native Arab readers. Journal of Writing Systems
Research Volume, 8 (2), 133-144.
Taha, H.Y. & Saiegh-Haddad, E. (2016). The role of phonological versus morphological
skills in the development of Arabic spelling: An intervention study. Journal of
Psycholinguistic Research, 45 (3), 507–535.
Taha, H.Y. (2013). Reading and spelling in Arabic: Linguistic and orthographic
complexity. Theory and Practice in Language Studies, 3 (5), 721-727.
Taha, H.Y. (2012). How does Arabic orthographic connectivity modulate brain activity
during visual word recognition: An ERP study. Brain Topography, 26 (2), 292–302.
The World Bank.(2016). World development indicators. Retrieved on July 1, 2017 from
http://data.worldbank.org/data-catalog/world-development-indicators
UNESCO.(2011). Mobile learning week report. Retrieved on July 5, 2017 from
http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/ED/ICT/pdf/UNESCO%20
LW%20report%20final%2019jan.pdf
UNESCO. (2012). Turning on mobile learning in North America: Illustrative initiative
and policy implications. Retrieved on June 10, 2017 from
http://unesdoc.unesco.org/images/0021/002160/216083E.pdf
Wang,M., Novath, D., Shan, R., & Pan, X. (2009). The impact of m-learning on students' learning behaviours and performance:Report from large blended classroom. British Journal of Educational

Technology, 40 (4), 673 - 675.
Wierzbicki, R.J. (2002). Emerging issues in m-Learning.In Proc. of Mobile Open Society
through Wireless Technology (MOST) Conference(October),Poland:Warsaw.
Zurita, G., & Nussbaum, M. (2004). Computer supported collaborative learning using
wirelessly interconnected handheld computers. Computers & Education, 42 (3), 289-314.