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Perceptions and challenges of mobile learning in Kuwait

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Abstract   The rapid development and growth of mobile technology has motivated developers to introduce a wide range of mobile applications, changing users' behavior and expectations and reshaping industries and businesses. In implementing any learning system such as mobile learning, users' expectations should be taken into consideration. However, there is a lack of studies on this aspect, particularly in the context of Kuwait higher education (HE) institutions. Therefore, the aim of this study is to investigate students' and instructors' perceptions toward the use of mobile devices in learning, and to understand the challenges that affect its implementation. Although m-learning is used in the developed countries and considered as an effective educational tool, it is not yet fully utilized in Kuwait, as a developing country. This study reports on the results of a survey conducted on 623 students, and 132 instructors from HE institutions in Kuwait, in order to understand their perceptions and opinions about the effectiveness of the use of mobile learning. An analysis of the quantitative survey findings is presented in this article, and the findings indicated that students and instructors are very familiar with mobile devices and its applications. The results also revealed that students and instructors have positive perceptions of m-learning, and indicated that video-based social media applications are widely used among them. However, the study reports some social and cultural issues that may act as barriers to m-learning implementation.

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1. Introduction

The use of mobile devices has integrated into all aspects of life even in the developed countries. The rapid development and implementation of mobile technologies made social changes in many fields such as financial institutions, tourism, and entertainments (Cavus, 2011). These developments also led to the introduction and use of mobile devices in education, which is considered the latest introduced type of learning (Ebrahim et al., 2015). New interactive technologies are

providing us with a challenge and an opportunity evenly. Mobile technology is providing us with a challenge that is to find out how to construct environments that can support different kinds of learning settings and activities, and how to be accepted in different cultures and traditions (Alhajri et al., 2011, 2013). M-learning is also providing us with an opportunity that is to change the existing learning strategies to give students much flexible approach to managing their learning experiences. Thus, many researchers and educators are currently exploring the potential of mobile devices in supporting the learning process.

Many researchers defined m-learning, Quinn (2000) stated that m-learning is a new learning method that takes place using mobile devices (Quinn, 2000). Furthermore, Ozdamli and Cavus (2011) define m-learning as a kind of learning that allows learners to obtain learning materials anytime anywhere, using mobile devices (Ozdamli and Cavus, 2011). In addition, Kinash et al. (2012) describe m-learning as using mobile technology for educational purposes (Kim and Kankanhalli, 2009). It is worth pointing out the difference between e-learning and m-learning, e-learning is identified as an online learning which can be carried out in and out of the classroom (Rosenberg, 2001). Sharples (2005) sees m-learning as an extension of e-learning (Sharples, 2005), while the work of Winters (2006) concludes that m-learning is a subset of e-learning (Winters, 2006).

There is a widespread penetration of mobile devices among Arab young students (Al-Shehri, 2012). The mobile market in Kuwait experienced strong growth in mobile penetration to over 200 percent in 2015 (Kuwait Telecommunications Report Q4, 2015). The high mobile phone availability among people in Kuwait as well as the good mobile infrastructure are all important factors that can enhance the shift to mobile learning. Therefore, the authors of this article believe that it is important now to seek both students' and instructors' perceptions and attitudes toward m-learning, especially that the Ministry of Education in Kuwait (MOE) distributed 80,500 one to one mobile devices (Tablets) among students and instructors in the academic year 2015/2016 to activate mobile learning as part of the national e-learning project in Kuwait based on Kuwait e-learning strategy that was developed in 2008.

The rest of this article is organized as follows: Section 2 introduces related studies. Section 3 provides challenges of m-learning that affect the implementation of this technology and the educational process. A case study about m-learning in Kuwaiti HE is introduced in section 4. Section 5 concludes the study.

2. Related studies

Mobile learning has a significant impact on teaching and learning (Klassen et al., 2013). That urged researchers to investigate the impact of using m-learning to support teaching and learning. Ozdamli and Cavus (2011) listed some characteristic of mobile learning such as: ubiquitous, portable, blended, private, interactive, collaborative, and instant (Ozdamli and Cavus, 2011). M-learning is characterized as *portable*, students can use it anytime, anywhere (Cavus and Ibrahim, 2009; Ahonen et al., 2004); *ubiquitous* because it transforms the traditional classroom into anytime and anywhere education (Kukulska-

Hulme et al., 2009; Cavus and Ibrahim, 2009); *blended* in which instructors can blend m-learning with traditional learning (Al-Sharhan, 2016), and can maximize the face-to-face and online interaction (Ocak, 2010); *interactive* in which it can provide an interactive learning environment (Cavus and Uzunboylu, 2009); *collaborative* because it creates collaborative learning activities (Uzunboylu et al., 2009); *immediate,* it allows instant access to learning materials and educational instruction (Eteokleous and Ktoridou, 2009). Furthermore, Chen et al. (2013) pointed out that mobile platforms allow learners to collaborate with their classmates, search information, find and search locations (Chen et al., 2013).

The valuable features of mobile computing bring both opportunities and challenges to the development of Mobile Social Media Applications (MSMA). Social media applications offer opportunities to enrich students' collaboration, engagement, and interactivity. Valtonen et al. (2011) used mobile devices with his students to enable them to collaborate and share lecture notes via Twitter. His students discussed class activities, exchanges course related resources, and commented on classroom experiences using this social media program. They said that twitter allows them to interact, share, express, and build constructive relationships which affect the quality of learning (Valtonen et al., 2011). In addition, Alhazmi and Rahman (2013) believe that social media applications create collaborative teams that advance students' participations and engagements (Alhazmi and Rahman, 2013).

Since the authors are focusing on Kuwait HE in which a case study was conducted to understand students' and instructors' perceptions of m-learning, here are some studies conducted in Kuwait and in Saudi Arabia, a country which is very close to Kuwait in terms of culture, traditions, and social life. Dashti and Aldashti (2015) examined students' perceptions toward the use of mobile learning at the College of Basic Education in Kuwait. Their results obtained from the questionnaires distributed among 300 undergraduate female students, indicated that 80.3% were satisfied with using mobile devices in learning, and believe that it enhances their knowledge of English language (Dashti and Aldashti, 2015). In addition, Alfarani (2015) conducted a study to investigate the influence on the adoption of mobile learning in Saudi women teachers in HE. She found that m-learning has the potential to enhance collaboration with students, however, she listed some obstacles which had negative effects on mobile learning acceptance. The findings also revealed that resistance to change, social, and cultural issues are significant factors of using m-learning (Alfarani, 2015). Furthermore, Almutairy et al. (2015) conducted a survey study to explore the possibility of integrating m-learning into Saudi Arabian HE institutions. The findings indicated that m-learning provides great opportunities, and pointed out that the use of mobile phones inside the classroom increases knowledge acquisition (Almutairy et al., 2015). Al-Fahad (2009) examined students' attitudes and perceptions toward the effectiveness of m-learning. He conducted a survey of 186 undergraduate female students at King Saud University in Saudi Arabia, the results of the survey indicated that m-learning improves students' retention of knowledge, and enhances students' learning process (Al-Fahad, 2009). Similar study conducted by Nassuora (2013), to examine students' acceptance of mobile learning in Saudi Arabia. The author used a quantitative approach and distributed a questionnaire to 80 HE students. The study results demonstrated

that m-learning has a high level of acceptance among the Saudi students (Nassuora, 2013).

Cultural and social considerations are important factors when integrating technology into any learning settings. Baker et al. (2007) gave an example of Saudi Arabia a country with cultural traditions relating to gender. They stated that the gender segregation in the Saudi educational system, have a significant impact on the attitudes and perceptions toward the use of mobile technology in learning (Baker et al., 2007). In addition, a recent study by Al-kandari et al. (2016) was conducted to understand the influence of culture on Instagram use by male and female students in Kuwaiti HE institutions. The results of the analysis indicated that males are more likely to disclose their personal information than females who prefer private accounts. They related this to the Kuwaiti conservative norms and traditions (Al-kandari et al., 2016).

3. M-learning challenges

Mobile learning offers considerable benefits to build and support creative, collaborative, and communicative learning environments (Alhazmi et al., 2014; Pollara, 2011; Sharples et al., 2009). However, within educational environment, it is a challenge to implement efficient m-learning projects due to the complex environment that incorporates management, pedagogical, technological elements, social, and cultural issues. The following sections address and discuss some of the challenges imposed by the implementation of m-learning projects, these are: Management and Institutional Challenges; Design Challenges; Technical Challenges; Evaluation Challenges; and Cultural and Social Challenges, as illustrated in Fig. 1.

3.1. Management and institutional challenges

Managements of educational institutions are increasingly acknowledging both the external factors (technology, Stakeholders, competition, etc.), and internal factors (technological and pedagogical approaches). Management needs to define a clear policy, and technical and pedagogical support, to go for a wide-scale implementation of m-learning. Lack of support and institutional policies were cited as institutional obstacles (Ismail et al., 2013). Wilen-Daungenti (2009) pointed that university management is aware of the impact of rapidly changing technology, and said to be extremely conservative

and reluctant to make large investments (Wilen-Daungenti, 2009).

One of the most crucial challenges facing educational institutions, when implementing m-learning project, is managing the change within the institution. Managing such change will affect processes and activities, as well as the people such as: students, instructors, managers, developers, and employees (Al-Sharhan, 2016). The principles of change management should be applied properly for the change process to succeed (Dublin, 2007). The goal of the change management is to change the attitudes and behaviors that includes different organizational and individual layers such as students, instructors, management, employees, and families. Adopting a new m-learning strategy is a major change and naturally, people resist it, therefore, using the change management techniques will support moving toward the new era with confidence.

3.2. Design challenges

Mobile devices are equipped with various features such as camera, sensors, search, calculator, location, media player, notes, calendar, etc. Understanding these capabilities of mobile devices will help designers to explore the potential of mobile learning. Designers and developers should consider both the technical features and the design principles when developing educational materials for mobile devices. Designers of m-learning programs need to consider the three types of design, that is: instructional design, which is the educational design of the application; interface design, which is the transparent to the user; and screen design, which is the design of the graphics and the visual display. Al-Hunaiyyan pointed that the more emphasis the developer puts on these designs, the more useful and functional the application will be (Al-Hunaiyyan, 2000).

The various instructional design methodologies can help in deciding on different learning situation that achieves the educational objectives using various types of mobile devices. Instructional designers must explore new methods that assist mobile learning situations to create effective learning solutions. Goel (2014) stated that it is essential for instructional designers to design e-learning courses effectively for mobile devices, he pointed out that m-learning should be viewed differently from that of traditional e-learning, due to mobile limitations such as the screen size, memory, screen brightness, and network bandwidth (Goel, 2014). When designing mobile learning programs, it is important to select the teaching and learning strategies that work best with the technological tools (Sharples et al., 2005). In addition, Hwang and Chang (2011) pointed that we must focus on the use of new technologies through adopting pedagogical approaches by understanding mobile features and capabilities (Hwang and Chang, 2011). Messinger (2012) stated that the lack of effective models in m-learning limits the widespread adoption of mobile learning (Messinger, 2012). Alhazmi and Rahman (2012) argued that the technological features of mobile applications such as mobility and interactivity are essential to successfully integrate this technology into the educational settings (Alhazmi and Rahman, 2012).

User interface design is an important factor for a successful application. Thus, designing and developing an efficient educational interface within a learning environment is still a challenge for most developers, facilitators, and educators (Alhajri

Figure 1 Mobile learning challenges.

and AL-Hunaiyyan, 2016). Udell (2012) stated that the interface for mobiles must be consistent and straightforward than those of e-learning. He believes that if the mobile navigation must be learned to use, then that is a failure (Udell, 2012). Similarly, Elias (2011) stated that m-learning applications must be simple and intuitive (Elias, 2011). Furthermore, Kukulska-Hulme et al. (2009) urged developers of mobile learning applications to design attractive and easy to use interface, a pleasant visual design, and effective interaction styles (Kukulska-Hulme et al., 2009). In addition to instructional and interface design, the organization of visual elements and media on the mobile screen will influence the ease and quality of learning, and has an important impact on learners' cognitive load. It is also important to consider the number of pixels available on users' device, to provide the best quality of images on users' screens. Furthermore, designers should consider screen size and screen orientation (Horizontal and Vertical), knowing that learners sometimes need to be able to use both orientations.

3.3. Technical challenges

Technical difficulties are a significant aspect in the implementation and integration of m-learning technologies in education. Qureshi et al. (2012) listed some of these difficulties which include "installation, availability of latest technology, fast internet connection, and uninterrupted supply of electricity, maintenance, administration, security and absence of technical support" (Qureshi et al., 2012). There are technical challenges related to the infrastructure, mobile device, application development, technical support, security, and technical knowledge of instructors, students, and other stakeholders, which must be considered when employing m-learning project. Furthermore, Park (2011) listed some technical limitations related to the physical attributes of mobile devices such as: small screen size; insufficient memory; network reliability; limited battery; and screen brightness (Park, 2011). Technical support is essential to all parties involved in the m-learning project, and there is a need for continuing technical and material support (Mahruf et al., 2010). However, Bakari et al. (2005) pointed that most of the developed countries lack quality and expert in technical support and maintenance of Information and Communication Technologies (ICT) (Bakari et al., 2005).

3.4. Evaluation challenges

Evaluation is an essential activity in the lifecycle of any interactive learning systems, and mobile learning adds additional challenges for evaluation of both the technology and the learning outcome. Evaluation strategies for education have been focused on face-to-face mechanism with learners in classrooms and laboratories. Now, e-learning and m-learning, add complexity to the evaluation process forcing educational institutions to consider m-learning technical capabilities, pedagogical issues, cultural, and social factors. Messinger (2012) stated that there is a lack of evidence regarding the effective use of mobile learning in education, which he believes will limit the widespread adoption of mobile learning. He addressed the questions: "How to evaluate the effectiveness? How to assess learning outcome?" (Messinger, 2012). Kukulska-Hulme and Traxler (2005), urged to integrate evaluation strategies into the development and implementations of m-learning technologies. They believed that planning, design, implementation, and evaluation of the use of mobile technologies in education must be integrated to be successful (Kukulska-Hulme and Traxler, 2005). Traxler (2002) pointed that evaluation of mobile learning is challenging, he identified some attributes that a 'good' evaluation should be: "Efficient (cost and time); Rigorous; Ethical; Proportionate; Consistent with the teaching and learning strategies; Aligned to the technology of learning; and Authentic" (Traxler, 2002). Furthermore, Park (2011) stressed on using various evaluation methods of learners using mobile devices (Park, 2011).

3.5. Cultural and social challenges

New technologies are now being introduced to different educational arenas. There are cultural norms and social concerns while accepting the deployment of m-learning. Kadirire and Guy (2009) pointed a downside to mobile learning is the personal uses of the device with less control over the students which makes mobile learning activities subject to frequent interruptions (Kadirire and Guy, 2009). In addition, ethical and practical implications such as: resistance to change among instructors; concerns about new social practices affecting instructors' personal time; increasing amount of information to be stored on his/her device; privacy issues; security; and cyber-bullying, were pointed by (Aubusson et al., 2009; Cushing, 2011). The accessibility of mobile devices is another challenge. If mobile learning is to be implemented successfully, students and instructors must own a mobile device (Cushing, 2011). Naismith et al. (2004) addressed issues related to the implementation of m-learning including technology ownership and the digital divide (Naismith et al., 2004). Furthermore, Park (2011) listed social limitations of m-learning such as: accessibility and cost issues for end users; frequent changes of device models; and students' distraction (Park, 2011).

Cultural differences in relation to perceptions and attitudes toward technology are key factors for both the acceptance of these types of technology and for their future use (Al-Oteawi, 2002). Introducing m-learning to a new culture brings many issues that need to be investigated. It is very important first to understand the nature of the target culture and to use the findings as a basis for m-learning project implementation (Al-Hunaiyyan, 2000). Baker et al. (2007) gave an example of Saudi Arabia a country with cultural traditions relating to gender (Baker et al., 2007). Similarly, Al-kandari et al. (2016) sought to find out the influence of culture on Instagram use between males and females in Kuwait (Al-kandari et al., 2016). Furthermore, resistance to change is a great challenge. Despite the increase in mobile usage, especially among students, it is believed that mobile technology increases the work for the instructors because it adds additional arrangements. Some educators resist the idea of integrating this technology into their practice, because of the constraints it presents to them. Studies report that resistance to change plays an essential role in accepting technology in education (Kim and Kankanhalli, 2009; Nov and Ye, 2008). In addition, Messinger (2012) argued that the resistance of instructors to technology limits the adoption of m-learning (Messinger, 2012). This was attributed as seen by Herro et al. (2013) to the lack of technical knowledge by instructors, as well as lack of funds for professional development programs. Creating a

professional development and teacher training course can foster collaboration among instructors to become comfortable environment while using this technology in and out the classroom (Al-Hunaiyyan et al., 2012).

4. Case study: M-learning in Kuwaiti HE

The following sections describe the methodology of the study and present the results.

4.1. Methodology

4.1.1. Purpose of the study

This study is exploratory in nature. Its purpose is to seek both students' and instructors' perceptions and attitudes toward m-learning. Unlike some research which focuses only on students' perceptions, this study, investigates both students' and instructors' perceptions and attitudes to underline several issues about mobile learning from two perspectives. In addition, having the sample of the study from both private and government educational sectors, will give better and diverse views. In addition, the study also tries to highlight the use of social media in education, and to investigate social and cultural issues that might affect the acceptance and resistance of m-learning in Kuwait HE.

4.1.2. Sample of the study

The participants of this study are (623) male and female students, and (132) male and female instructors from various HE institutions in Kuwait from both private and government educational sectors.

4.1.3. Evaluation tool

Two questionnaires have been designed, one for students, and one for instructors. The reason for designing two questionnaires is because of slight variations of the questions which are related to the role of both instructors and students in the mobile learning process. The structure of the questionnaires was adapted from several previous studies (Al-Fahad, 2009; Dashti and Aldashti, 2015; Georgieva, et al., 2011; Nassuora, 2013). However, questions and scales used in the two questionnaires were designed to be appropriate to the scope and context of the study. The questionnaires consisted of 3 parts. Part 1 collects demographic data and gathers information about the frequent use of mobile device, type of mobile device, and the frequent use of mobile applications. Part 2 investigates the frequent use of the common social media applications. Part 3 of the questionnaire measures students' and instructors' perceptions and attitudes toward the effectiveness of mobile learning and social media learning tools. The questions in part 3 consisted 5-PointLikert type scale as: 1 for Strongly Disagree, 2 for Disagree, 3 for Neutral, 4 for Agree, and 5 for Strongly Agree. A pilot study was conducted to test the adequacy of the questionnaire, to assess the feasibility of the survey, and to validate the initial results. Few improvements were made for the preparation of the main study.

4.1.4. Procedures

The study used a quantitative method, in which a survey was conducted. The online questionnaires were randomly distributed electronically to 623 undergraduate students, and to 132 instructors during the second academic term (Spring 2015/2016). The analysis of the survey results is presented based on a valid response of the questions answered by students and instructors. Data were quantitatively analyzed using SPSS. Percentages, means, and standard deviations (SD), were used for the sake of the analysis.

4.2. Results

The following sub-sections present results of the study including: Students' and instructors' demographic data and background information; Students' and Instructors' frequent use of social media applications; and students' and instructors' perceptions and attitudes about m-learning and social media learning tools.

4.2.1. Respondents background information

This section gives general information about the students and the instructors. The outputs of the first 3 questions (gender, marital status, and age), are displayed below in Table 1 for students and Table 2 for instructors. In addition, Figs. 2 and 3 illustrate the type of mobile device owned by students and instructors, while Figs. 4 and 5 illustrate students' and instructors' frequent use of mobile applications. Table 3 categorizes and defines the frequency of use given to the sample.

4.2.2. Students' and instructors' frequent use of social media applications

Part 2 of the questionnaires examines students' and instructors' frequent use of some of social media applications such as: Twitter, Instagram, Facebook, YouTube, Snapchat, and LinkedIn, Table 4 shows students' responses, while Table 5 shows instructors' responses.

#### 4.2.3. Students' and instructors' perceptions of M-learning

Part 3 of the questionnaires used to measure students' and instructors' perceptions and attitudes about m-learning. The

Table 1 Characteristics of the students.

| Characteristics	Percentage%
Q1. Gender	
Male	32.1
Female	67.9
Q2. Marital status	
Single	71.3
Married	28.7
Q3. Age	
16–24 Years	67.3
25–35 Years	23.2
More than 35 years	9.4

Table 2 Characteristics of the instructors.

| Characteristics	Percentage%
Q1. Gender	
Male	59.1
Female	40.9
Q2. Marital status	
Single	32.7
Married	67.3
Q3. Age	
16–24 Years	21.8
25–35 Years	22.7
More than 35 years	55.5%
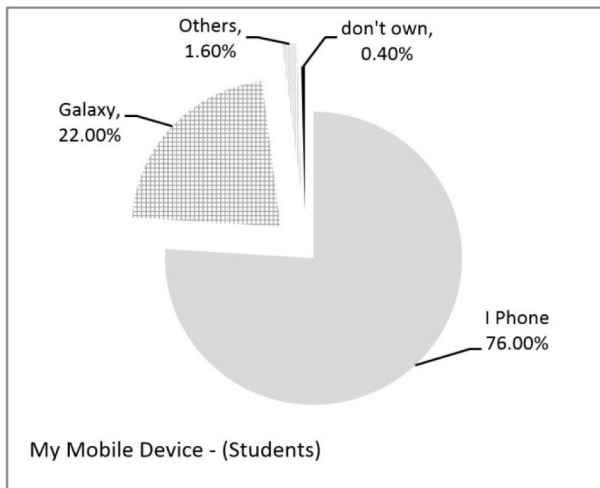
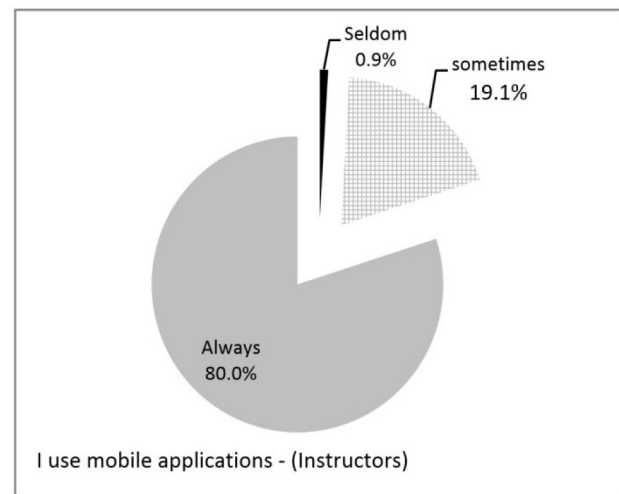**Figure 2**   Type of mobile device owned by the students.
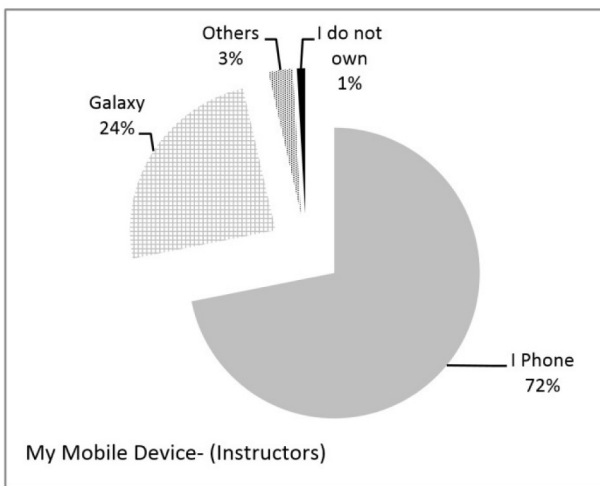
Figure 3   Type of mobile device owned by the instructors.

term Agreement represents "Strongly agree" plus "Agree", while Disagreement represents "Strongly disagree" plus "Disagree". Table 6 reflects students' responses, while Table 7
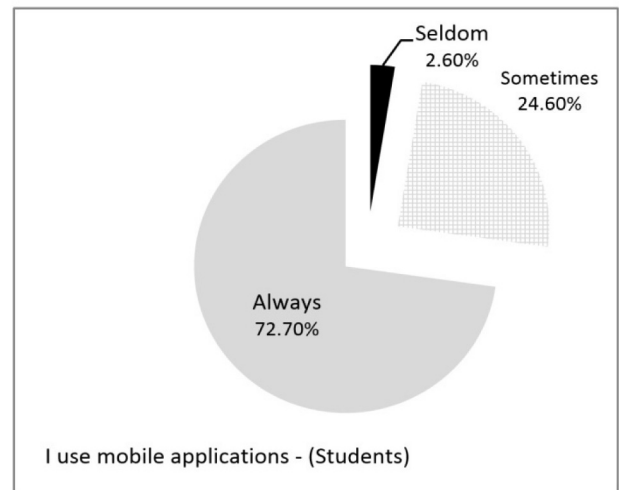
Figure 4   Frequent use of mobile applications by students.

Figure 5   Frequent use of mobile applications by instructors.

Table 3 Frequency of use given to the respondents.

Frequency	Usage duration
Always	1–3 h a day
Sometimes	1–3 h a week
Seldom	1–3 h a month
I don't use it	Not using at all

reflects instructors' responses. Mean is used to give the general average of the choice, while Standard Deviation (SD) is used to provide an indication of how far the individual responses to a question vary or "deviate" from the mean. We noticed in Tables 6 and 7 that the value of SD is around 1, which indicates that the answer of each question is close to the average.

4.2.3.1. Students' perceptions of M-learning. Questions 1 to 10 of Table 6 show students' perceptions and opinions about m-learning. Regarding students' responses of Q1, "*Learning by*

Table 4 Students' frequent use of social media applications.

No.	Application	Always (%)	Sometimes (%)	Seldom (%)	I don't use it (%)
1.	Twitter	28.1	29.1	18.8	24.0
2.	Instagram	44.9	38.1	11.0	6.0
3.	Facebook	5.4	8.0	14.6	71.9
4.	You Tube	61.1	32.5	4.8	1.6
5.	Snap Chat	70.9	11.8	4.6	12.6
6.	LinkedIn	1.2	4.0	5.6	89.2

Table 5 Instructors' frequent use of social media applications.

No.	Application	Always (%)	Sometimes (%)	Seldom (%)	I don't use it (%)
7.	Twitter	35.50	28.20	16.40	19.90
8.	Instagram	39.10	32.70	16.40	11.80
9.	Facebook	20.90	12.70	20.90	45.50
10.	You Tube	70.10	24.50	4.50	0.90
11.	Snap Chat	34.50	17.30	12.70	35.50
12.	LinkedIn	2.70	8.20	20.00	69.10

Table 6 Students' perceptions of mobile learning.

No.	Question	Strongly Agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly Disagree (%)	Mean	SD
Q1	Learning by mobile helps me learn anytime anywhere	40.5	36.7	13.2	6.4	3.2	4.05	1.040
Q2	Learning by mobile opens many ways to learn and provide various learning fields	35.3	40.7	14.4	6.4	3.2	3.98	1.023
Q3	Learning by mobile increases students' motivation to learn	25.5	30.1	28.1	12.8	3.6	3.61	1.106
Q4	Having media files of my course content on my mobile helps me learn more	31.7	38.9	17.8	6.4	5.2	3.85	1.102
Q5	Mobile helps to follow up on grades and student record	54.5	33.3	8.8	1.8	1.6	4.37	0.844
Q6	Learning by mobile is a good idea	28.9	32.3	23.4	10.0	5.4	3.69	1.148
Q7	I feel satisfied if it were to impose the use of m-learning as a new learning tool	20.6	24.9	26.7	16.8	11.0	3.27	1.270
Q8	The use of social media applications help in educational attainment	23.8	44.1	19.0	9.6	3.4	3.75	1.030
Q9	The use of social media helps to strengthening the communication with others	41.3	40.1	10.8	4.6	3.2	4.12	0.991
Q10	The use of social media in education will cause social and family problems	15.0	27.3	32.5	17.2	8.0	3.24	1.145

mobile helps me learn anytime anywhere", the percentage of students' agreement is 77.20% (Mean = 4.05, SD = 1.040). In Q2, "*Learning by mobile opens many ways to learn and provide various learning fields*", we found that the percentage of students' agreement is 76.00%, (Mean = 3.98, SD = 1.023). Question Q3, which states that "*Learning by mobile increases students' motivation to learn*", the percentage of students' agreement is 55.6% (Mean = 3.61, SD = 1.106). While Q4, "*Having media files of my course content on my mobile helps me learn more*", we found that the percentage of students' agreement is 70.60%, (Mean = 3.85, SD = 1.102). In addition, the results of Q5, "*Mobile helps to follow up on grades and student's records*", it is interesting that the percentage of students' agreement is very high 87.80%, while (Mean = 4.37, SD = 0.844).

The results of Q6, "*Learning by mobile is a good idea*", the percentage of students' agreement is 61.20% (Mean = 3.69, SD = 1.148). While in Q7, "*I feel satisfied if it were to impose the use of m-learning as a new learning tool*", the percentage of students' agreement is 45.50% while the disagreement is 27.80% (Mean = 3.27, SD = 1.270).

Regarding social media applications, Q8, "*The Use of social media applications help in educational attainment*", the results show that the percentage of students' agreement is 67.90% (Mean = 3.75, SD = 1.030). Similarly, in Q9, "*The use of social media helps to strengthening the communication with others*", we found that the percentage of students' agreement is 81.40%, (Mean = 4.12, SD = 0.991). However, in Q10, "*The use of social media in education will cause social and family problems*", we found that the percentage of students' agree-

Table 7 Instructors' Perceptions of Mobile Learning.

No.	Question	Strongly Agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly Disagree (%)	Mean	SD
Q1	Learning by mobile helps students learn anytime anywhere	28.2	48.2	12.7	8.2	2.7	3.91	0.991
Q2	Using mobile in teaching will increase students' motivation	22.7	36.4	30.0	10.0	0.9	3.70	0.962
Q3	Mobile helps to follow up on recording my grades and follow students' records	56.4	34.5	3.6	5.5	0.0	4.42	.806
Q4	M-learning breaks down psychological barriers between students and instructors	26.4	44.5	23.6	3.6	1.8	3.90	.898
Q5	M-learning helps to solve the problems caused by the absence of students	27.3	44.5	17.3	7.3	3.6	3.85	1.024
Q6	M-learning will add additional duties on my regular work as an instructor	10.9	20.9	29.1	27.3	11.8	2.92	1.182
Q7	I feel satisfied if it were to impose the use of m-learning as a new teaching tool	21.8	27.3	26.4	13.6	10.9	3.35	1.268
Q8	I would like to use mobile in teaching	31.8	29.1	26.4	6.4	6.4	3.74	1.163
Q9	Use social media applications help in educational attainment	20.9	50.9	18.2	6.4	3.6	3.79	0.968
Q10	The use of social media in education will cause social and family problems	11.8	27.3	40.0	15.5	5.5	3.25	1.033

ment is 42.30%, while the disagreement is 25.20%, and neutral is 32.50% (Mean = 3.24, SD = 1.145).

4.2.3.2. Instructors' perceptions of M-learning. Questions 1 to 10 of Table 7 show instructors' perceptions and opinions about m-learning. Regarding instructors' responses of Q1, "*Learning by mobile helps students learn anytime anywhere*", the percentage of instructors' agreement is 76.40% (Mean = 3.91, SD = 0.991), while in Q2, "*Using mobile in teaching will increase students' motivation*", the percentage of instructors' agreement is 59.10% (Mean = 3.70, SD = 0.962). In Q3, "*Mobile helps to follow up on recording my grades and follow students' records*", the percentage of instructors' agreement is very high (90.90%), while Mean = 4.42, SD = 0.806. In addition, the results of Q4, "*M-learning breaks down psychological barriers between students and instructors*", show that the percentage of instructors' agreement is 70.90% (Mean = 3.90, SD = 0.898). Similarly, results of Q5, "*M-learning helps to solve the problems caused by the absence of students*", show that the percentage of instructors' agreement is 71.80% (Mean = 3.85, SD = 1.024).

Regarding the acceptance to m-learning and resistance to change, the results of Q6, "*M-learning will add additional duties on my regular work as an instructor*", we found that the percentage of instructors' agreement is 31.80% while the disagreement 39.10%, and neutral 29.1% (Mean = 2.92, SD = 1.182). In, Q7, "*I will feel satisfied if it were to impose the use of m-learning as a new learning tool*", the percentage of instructors' agreement is 49.10%, while the disagreement is 24.50% (Mean = 3.35, SD = 1.268). Regarding Q8, "*I would like to use mobile in teaching*", the percentage of instructors' agreement is 60.90% (Mean = 3.74, SD = 1.163). In respect to the use of social media in education, in Q9, "*The Use of social media applications help in educational attainment*", the percentage of instructors' agreement is 71.80% (Mean = 3.79, SD = 0.968). IN Q10, "*The use of social media will cause social and family problems*", the percentage of instructors' agreement

is 39.10%, while the disagreement is 21.00%, and neutral 40.00% (Mean = 3.25, SD = 1.033).

4.2.3.3. Comparing students' with instructors' perceptions. Data presented in Table 8 compares students' and instructors' responses as provided in Tables 6 and 7. The term Agreement represents "Strongly agree" plus "Agree", while Disagreement represents "Strongly disagree" plus "Disagree". It is interesting to find similarities in the percentage of most of the questions, as illustrated in Fig. 6, which indicates that students and instructors almost have similar perceptions and attitudes toward m-learning.

4.3. Discussions

Mobile learning is a suitable and effective choice in the Arab world due to the widespread penetration of mobile devices among Arab young students (Al-Shehri, 2012). The mobile market in Kuwait experienced strong growth in mobile penetration (Kuwait Telecommunications Report Q4, 2015). The high mobile phone availability among students in Kuwait plays important role that can maximize the chance for shifting to mobile learning. It is interesting to find that 76.0% of the students and 72.0% of instructors owned iPhone, this helps to highlight the relationship between mobile ownership and the platform needed for the distribution to learners as part of the e-learning national implementation strategy in Kuwait.

The results presented in Tables 6 and 7 show that students and instructors have positive opinions about m-learning. The results strongly suggest that most of the students and instructors perceived mobile learning as attractive learning tool because it allows the freedom to learn whenever and wherever they want. The value of mobility in mobile learning is appreciated by students and instructors. They believed in its potential of providing various ways of learning and following up on students' records and grades. Several studies support our findings, the study of Dashti and Aldashti (2015) showed positive per-

Table 8 Comparing Students' with Instructors' Perceptions.

No.	Question	Students' Agreement (%)	Instructors' Agreement (%)
Q1	I own a mobile device (Device Ownership)	99.60	99.00
Q2	Learning by mobile helps students learn anytime anywhere.	77.20	76.40
Q3	Mobile helps to follow up on instructors and students' grades and records	87.80	90.10
Q4	Using mobile in teaching will increase students' motivation	55.60	59.10
Q5	Use social media applications help in educational attainment	67.90	71.80
Q6	I will be satisfied if it were to impose the use of m-learning as a new teaching tool	45.50	49.10
Q7	The use of social media will cause social and family problems	42.30	39.10
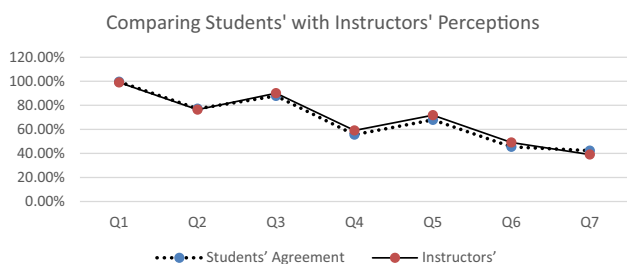
Figure 6 Comparing students' with instructors' perceptions.

ceptions of using mobile learning among Kuwaiti HE students (Dashti and Aldashti, 2015); provided unique opportunities from the perspective of Saudi students (Almutairy et al., 2015); and demonstrated a high level of acceptance on m-learning level among HE Saudi students (Nassuora, 2013). In addition, The results of a study by Shih-hsien Yang (2012), indicated that students demonstrated positive attitudes toward m-learning, they believed that m-learning allows to acquire more information and supports collaborative learning (Shih-hsien Yang, 2012). His results supported an earlier study of Basoglu and Akdemir (2010), in that m-learning can increase students' learning (Basoglu and Akdemir, 2010).

Social media applications have made mobile devices more dynamic and pervasive, promising more educational potential, and offering opportunities to enrich students' collaboration, engagement, and interactivity. Alhazmi and Rahman (2013) believe that social media applications create collaborative teams that advance students' participations and engagements (Alhazmi and Rahman, 2013). Table 4 shows students' use of social media applications. It is interesting to find that Snapchat are frequently used by students (70.9%), YouTube (61.1%), and Instagram (44.9%), while students did not show much interest in LinkedIn and Facebook. On the other hand, Table 5 shows instructors' use of social media applications. It

is interesting to find that YouTube is frequently used by the instructors (70.1%), Instagram (39.1%), Twitter (35.5%), Snapchat (34.5%). Facebook (20.9%) and LinkedIn is used rarely (2.7%) by the instructors. This can help to identify which social media application can be adapted when implementing m-learning. Instructors and developers should note that video based social media applications are widely used among the students such as Snapchat and YouTube.

In addition, there is also evidence of positive perception on using mobile as a social learning tool, because it allows collaboration with instructors and other students. Students and instructors felt positive toward mobile learning using social media applications. About 67.90% of the students and 71.80% of instructors believe that social media applications enhance learning, and 81.4% of the students believe that the use of social media helps to strengthen the communication with instructors and other students. These findings are supported by Valtonen et al. (2011) and Alhazmi and Rahman (2013). However, as social media can be used for collaborative learning, students who believed that social media programs will cause family problems are 42.28%, which is higher than 25.25% of those students who disagree, while instructors who believed that social media programs will cause family problems are 39.10% which is higher than 21.00% of the instructors who disagree. The conservative attitudes of students and instructors and the society at large regarding the use of mobile devices which allows male students to contact female students might negatively affect the use of mobile learning. The respondents were divided on this issue, with half 'agreeing' and the other half 'disagreeing'. A study conducted by Al-kandari et al. (2016) and (Nydell, 2006) supported these findings. Another study by Baker et al. (2007) indicated that when there is gender segregation in the education system, the cultural and religious norms will have a significant impact on the attitudes, which influence the behavior toward the use of this technology (Baker et al., 2007).

Resistance to change is challenging when using technology in education. It is believed that mobile learning increases instructors' work, because it adds additional preparations. Some educators resist the idea of integrating m-learning into their practice, because of the constraints it presents to them. Studies report that resistance to change plays an essential role in accepting technology in education (Kim and Kankanhalli, 2009; Nov and Ye, 2008). Messinger (2012) argued that the resistance of instructors to technology affects the widespread adoption of m-learning (Messinger, 2012). This was attributed to the lack of technical background by instructors (Herro et al., 2013). Although resistance to change is a negative influence on the acceptance of m-learning (Alfarani, 2015), instructors in this study felt happy with using m-learning, although 31.8% of the instructors stated that m-learning adds additional duties on their regular work, 60.9% of them stated that they would like to use mobile in their teaching practices, while 49.1% of them felt satisfied if it were to impose the use of m-learning as a new teaching tool.

Finally, although mobile devices ownership is very high among students' (99.6%) and instructors (99.00%), m-learning remains in its infancy in Kuwait higher education. However, research indicates that the use of mobile technology in learning is not as widespread as the devices themselves (Dahlstrom and Bichsel, 2014).

5. Conclusion

For a proper implementation of m-learning, it is important to understand and overcome the challenges which are discussed in this article such as management challenges, design challenges, technical challenges, evaluation challenges, cultural and social challenges. Within Kuwait educational sector there have been outstanding initiatives to incorporate ICT into education at national level, including the use of mobile technology in learning. The motivation in conducting this study is the interest to understand students' and instructors' perceptions and attitudes about mobile learning, and online social media tools. The study also aims at looking at the readiness of both students and instructors to adopt and use m-learning in Kuwait HE. The findings of a survey conducted on 623 students, and 132 instructors from HE institutions in Kuwait demonstrate that students' and instructors' perception to mobile learning is positive, and that most the students and instructors believe that m-learning is appealing regardless of their gender and age. The value of mobility and the social features of m-learning are appreciated by students and instructors. They like the flexibility, ubiquity, capability to access learning materials and its improved method of communication and collaboration between instructors and students. Furthermore, students and instructors believe that online social media applications can enhance learning, and improve communications between students and instructors. The results also revealed that students and instructors have positive perceptions of m-learning, and indicated that video-based social media applications are widely used among them. However, the study reports some social and cultural issues that may act as barriers to m-learning implementation.

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