ORIGINAL CONTRIBUTION

Towards excelled mobile learning implementation in Kuwait university: Aspects and obstacles of use and non-use

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Abstract. This study highlights the momentous impacts of scientific and technological revolution in all aspects of person's life, particularly on education. The objective of the study is to analyze the current status of mobile learning at Kuwait University by providing data on the real use of mobile learning technologies by faculty members and the different aspects of such usage. To conduct a research random sampling technique was used, and the main instrument for data collection was a questionnaire. The questionnaire was developed and tested by consulting specialists in the field of mobile learning and educational psychology field. The study was conducted on 30 individuals. The findings of the study highlight the teachers perception towards Information and Communication Technologies (ICT) in the classroom , their advantages and affect on teacher perception. Hence, it is concluded that, introduction of ICT in the classroom is very helpful for teaching and learning. However, it is essential that future studies investigate the usability and suitability of ICT use as a tool for learning in public schools from various teachers as well as from learners' perspectives.

INTRODUCTION

The world is witnessing a scientific and technological revolution that has a significant impact on all aspects of our lives, especially on education. The educational system has been going through rapid changes since the last century, even more so in this century, with the support of rapid scientific advancements. For this reason, education has to be proactive to these changes, and educators need to be prepared and ready to adopt and develop systems to keep pace with such changes (Zawacki-Richter and Terry, 2014; Williams *et al.*, 2015).

Education is an integrated system dedicated to the development of normal human beings, who are capable of adapting and influencing their environments toward better lives. Thus, there has been a need to focus on improving the educational system so that it keeps pace with future challenges and threats. Digitization is one of the most important developments of the new century, an era characterized by consequent innovations and inventions that influence our lives. Within that era, education is facing an information and knowledge explosion. Currently, individuals can obtain information with only a click. And since nations are evaluated according to educational outcomes, learners are the key components of any educational system facing real challenges in a technological age which produced a new generation–the Digital Generation. This development requires improvements in the processes of education and teaching with a focus on the key components: educators, stu-

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dents, and curriculum (also known as the Educational Trinity). And to keep up with the new technological era, the Educational Trinity requires a transformation into a technological trinity that includes electronic educators, electronic learners, and electronic curricula (Amaral *et al.*, 2013; Williams, 2013).

Currently, countries are competing with each other to obtain benefits from new technological developments, especially the Internet, to develop their educational systems to line up with developed nations. Some countries are moving with quick steps toward development; others are moving at a toddler's pace. Kuwait University is part of this world and has witnessed a real technological shift in providing new programs and hardware and facilitating the development of mobile learning, an electronic environment supporting the transformation to electronic education. However, despite the vigorous efforts, the mobile learning and Distance Learning Center at Kuwait University asserts through its report (2014/2015) the reluctance of Kuwait University faculty members in using mobile learning facilities provided by the university. The report showed that during the first semester of the academic year, there was a clear demand for mobile learning facilities with (120) faculty members accessing the mobile learning portals, whereas the number dropped to (114) during the second teaching semester and to only (55) faculty members during the summer semester. Taking into consideration that the number of courses offered during the summer semester is less than those offered in regular semesters, however, the degree of participation continues to decline (reference by KU).

Inspired by the previous report, there is a need for scientific research to investigate the current state of mobile Learning used at Kuwait University by faculty members and the challenges that hinder them from using the electronic environment in their courses taught (Khan *et al.*, 2015).

Statement of the Problem

This research acknowledges the need for analyzing the current status of mobile Learning at Kuwait University by providing data on the real use of mobile learning technologies by faculty members and the different aspects of such usage. Moreover, even though Kuwait University invests and pays significant attention to providing high technology to support the educational processes, there has been a clear retraction by faculty members and a lack of initiation and continuity in using the available electronic facilities for educational purposes which could cause a real waste of money and effort which make the university lag behind in keeping pace with technological developments that provide support and facilitate the educational process.

Importance of the Study

Adopting a scientific quantitative approach, the findings of this study aim to:
1. Prevent the waste of efforts and expenditure invested in the development of Mobile Learning in order to support the educational process.
2. Provide solutions for faculty members' reluctance to use Mobile Learning.
3. Develop an effective mechanism for better use of Mobile Learning in education by identifying the different aspects of use by faculty members at Kuwait University.
4. Provide a plan on how to overcome obstacles that hinder the use of Mobile Learning in education.

THEORETICAL FRAMEWORK

The framework set out in this paper is grounded on the assumption that the use of the mobile learning in educational institutions introduces some new competencies and leads to a new level of standard that reflects knowledge and skills contained in the curriculum (Ng and Howard, 2013). However, the purpose of this paper is not to constitute a curricu-

lum guide for higher education in the area of mobile learning, but rather to highlight the impact of mobile learning use and non-use in higher education.

However, the implementation of mobile learning in classrooms may not yet be a global instructional practice. In addition, the information currently available about mobile learning is based almost solely on research conducted in both higher education institutions and training. Only a very limited study researched the development of modern technology learning standards in education. Some pedagogical theories and framework have been introduced to point out mobile learning standards (Ally and Avgoustos, 2014; Beetham and Rhona, 2013). One of the standards posed by Sha *et al.* (2012) is to look at learning that promotes collaboration, involves challenges, provides higher interaction skills, and expands learning opportunities through real-life tasks. Another emerging mobile learning standard is redefining digital literacy. It is a great challenge that faces new learning applications developers. New skills and competencies must be presented in higher educational institutions to promote learning in the digital age. In addition, the Sha *et al.* (2012) recommend self-regulated learning in a mobile learning environment that falls under three broad categories: connections and participations; sharing and privacy issues; and research and problem solving. Similarly, a design-based research framework for implementing a transnational mobile and blended learning solution project has presented a list of mobile technology standards to be mastered by students (Kamaruddin and Sulaiman, 2017; Palalas *et al.*, 2015). Although these standards have been developed in a different environment, they are helpful to other countries wishing to reexamine their courses and develop their own standards that fit their specific environmental conditions. For example, Kuwait and other countries in the Middle East should reconsider the social and ethical aspects of mobile learning standards applied in the United States to coincide with their own values and beliefs.

Learners in the 21st century should meet high standards that enable them to demonstrate a sound understanding of the nature and operations of mobile learning (Fulantelli *et al.*, 2015). They should also be able to demonstrate proficiency in the use of mobile learning systems (Kim *et al.*, 2013). Thus, knowledge about basic operations and technology concepts is mandatory. Ally and Josep (2014) advocate the use of cutting-edge technology, meaningful and user-friendly systems, innovative learning, mobile multimedia, virtual reality, and self-learning. Such systems enable individuals to define and manage their learning means and abilities. In order for contemporary educational systems to achieve their objectives, they ought to provide access to basic technology instructions and concepts (Martin and Jeffre, 2013).

The implementation of a mobile learning system provides students with the necessary skills to understand the surrounding ethical and human issues of technological use (Hsu *et al.* 2013). Students must practice responsible use of mobile learning systems, content, and services. A standard-guided implementation of mobile learning helps students appreciate lifelong learning, collaboration, personal pursuits, and productivity (Wong, 2012), for example, being able to evaluate the quality of a mobile's content in accordance with predefined learning standards, such as those specified by Page (2014).

Students can use mobile learning to enhance learning, increase productivity, and promote creativity. For example, E-learning packages installed in mobile technologies provide the learners with software that enables them to simulate mechanical laboratories and/or create new models. Moreover, students are encouraged to use productivity tools to collaborate in constructing learning-enhanced models, prepare publications, and produce creative projects. Looi *et al.* (2014) found that following adequate instructional design would

increase students' retention rates and motivation. In addition to promoting active learning, Page (2014) argues that the application of mobile learning in today's education environment allows students to experiment and be more creative. Developing mobile learning standards can make learning more sharing and fun while still being manageable (Jones *et al.*, 2013). Research shows that learners in the informal environment can learn more quickly compared with classroom-led environment; it enhances the retention of materials (Park *et al.*, 2012). The continuous evolution of learning is moving toward fostering individualized instruction, and mobile learning has been shown to be totally personalized to the individual learner. It provides a comfortable learning environment where specific learning needs and pace are met. Content is delivered based on the performance and abilities of the learner. Content can be updated instantaneously, making information more accurate. Consequently, effective mobile learning allows educational institutions to: 1) improve the learners' performance and productivity by responding to the demands of the learners and making learning available 24 hours a day, 7 days a week; 2) reduce instructional cost; 3) respond to learners' just-in-time needed skills; 4) compete with the rapid evolution of knowledge (Rossing *et al.*, 2012).

Collaboration is an effective instructional strategy that can also be integrated in mobile learning, either by problem-solving or discussion among peers via discussion groups (e.g., WhatsApp group). Students in the 21st century should be able to use telecommunications to collaborate, publish, and interact with peers, experts, and other audiences (Fitz Gerald *et al.*, 2013; Keengwe and Malini, 2014; Shih *et al.*, 2013). A study in the Moodle system in cloud computing found that mobile communication was a preferred method of interaction between students and their instructors, content, and classmates when available (Wang et al. 2013). With the implementation of mobile learning, students use a variety of media and formats to communicate information and ideas effectively. Land and Heather (2015) conclude that networked courses provide greater collaboration and interactivity in comparison with print-based course delivery. Mobile learning also improves collaboration and interactivity among learners. Fuller and Viktoria (2015) demonstrate how students who had more peer contact in the mobile learning class enjoyed classes more, and performed better than those who were taught in the traditional classroom. Likewise, adult learning organizations encourage the use of mobile learning to meet higher learning standards (Huang and Po-Sheng, 2015). A web-based learning survey conducted by Nguyen *et al.* (2015) found that mobile learning is utilized in training organizations. It is becoming the most common method for information technology transfer and justifies the adaptation of large organizations to new learning environment.

The implementation of mobile learning in higher education allows students to locate, evaluate, and collect information from a variety of sources. Instructors also use mobile learning tools to process data and report results. In addition, they can select and evaluate new instructional resources of information according to the given tasks (Su and Cheng, 2015). Moreover, with the implementation of mobile learning, students are encouraged to analyze data and gain knowledge rather than remember facts (Lai and Gwo-Jen, 2015).

Furthermore, the use of mobile learning in higher education allows students to use resources for interacting, collaborating, and making decisions. They can employ technology in the development of strategies for solving problems in the real world. Therefore, mobile learning is not about technology, it is about learning. Jiang *et al.* (2015) found that the mobile learning environment helps learners gain skills related to knowledge management and activity sharing. The experiential approach, as a subset of mobile learning, is one of the most preferred learning styles for learners (Jiang *et al.*, 2015). Mobile learning

provides learners with more opportunities to work together, share ideas, and make group collaboration, which is another preferred learning style (Chadyiwa and Mgutshini, 2015; Tsai *et al.*, 2015).

REVIEW OF RELATED LITERATURE

Technology has entered the education field, changing much of its means and philosophies. The period educators are witnessing nowadays necessitates a real transformation for adopting new technologies in education toward an electronic shift. Mobile learning appeared with technological advancements and has been researched and studied by many scholars around the world. According to Elmorshidy (2013), mobile learning is defined as an innovative way of providing an interactive environment focused on learners, designed to be efficient and accessible to any individual for use from anywhere at any time using internet resources and digital technologies congruent with principles for education designed to be appropriate for open and flexible learning environments. mobile learning is a way of using new communication technologies including hardware and software programs, information networks, multimedia, graphs and figures, research, electronic libraries, and internet gateways whether from a distance or in classrooms (Gikas and Michael, 2013; Hashem, 2016).

Mobile Learning as a Global Communication Tool

Mobile learning is characterized as a learning type that aims to provide techniques and technologies toward better learning process. Mobile learning has many benefits including providing a space for students to express thoughts and opinions, equality, accessibility, continuity, and the provision of multiple ways to evaluate the development of students' skills and knowledge; in addition to decreasing administrative burdens on educators (Martin and Jeffrey 2013). Teri *et al.* (2014) added that students could benefit from the Mobile Learning by easily accessing information with less cost; by avoiding the geographic obstacles; by enjoying the freedom of expression with less fear and embarrassment compared to face-to-face communication, and by overcoming issues related to increasing numbers of enrolled students compared to available classrooms and teaching resources.

Hargis *et al.* (2014) emphasized the benefit of mobile learning to provide solutions, especially when related to knowledge explosion and the increasing demand on higher and continuing education. They also recognized in their research the value and impact of information technology on university educational systems and techniques which could provide solutions to minimize the gap between educational outcomes and market demands through customizing education by providing the scientific content through tailored tools and techniques that meet individual needs. On the other hand, Abachi and Ghulam (2014) found in their research which was conducted on King Saud University in Saudi Arabia, that the mobile learning systems are commonly used in all departments in the university. However, there is no clear dependence as a major medium for delivering the course material, but as a tool for communication with students. In a similar basis, Brantes *et al.* (2013) conducted intensive review of research on cutting edge technologies, nevertheless mobile learning, and using clouds systems and found that the main benefit of mobile learning in teaching is for managing course materials. Few of faculty members use mobiles for evaluation, to encourage communication, with no significance indicators of its impact on education.

From another perspective, MacLeod (2015) conducted a survey on (22) students and faculty staff in technical college in Qatar to investigate the use of iPads in the classroom, which found that faculty members' perceptions vary according to colleges, specialization, and convictions about education. Marinakou and Charalampos (2014) examined the mobile learning in the Middle East, the case of Bahrain, and supported the findings of the

above mentioned study and found that female faculty members perceive mobile learning more positively than male faculty members. The study also found that faculty members with age less than 35 have strong perceptions toward mobile learning comparing to those above 35. Also, Gallacher (2014) investigating faculty members' behavior regarding mobile learning at Bin Mohammed e-University found significance correlations between age and gender with level of usage of mobile Learning. The survey of (96) participants found that skills of using mobile learning of faculty members less than 30 years old exceed their peers.

Obstacles of Mobile Learning Use

Research has been conducted to investigate faculty members' desire and willingness to use mobile learning. Al-Emran and Khaled (2015) conducted a qualitative research interviewing six faculty members who had experience in teaching online courses and found that out of the six faculty members, three are willing to continue in teaching through mobile learning, while the other three members have no intention in repeating the experience again. The research asserts the fact that first experience has an impact on faculty members' willingness to repeat the experience and continue in using mobile learning.

To learn about obstacles facing faculty members and prevent them from using mobile learning, Engin and Fairlie (2015) found that one of the main obstacles is administrative and teaching loads that prevent educators from improving their skills and difficulties in designing online courses. While this is true, Johnston and Sally (2014) assert the importance of conducting training courses and setting intrinsic as well as extrinsic motivation to continue learning new skills and knowledge. Alkhalaf (2014) predicted the expansion of use of electronic-based learning in Saudi Arabia high schools due to the increasing attention paid to mobile learning and its influence on education.

Summary of the Review of the Literature

The literature supports the use of E-learning to provide a method for compliance of students' learning with standards. In addition, instructors and curriculum developers can use these standards as guidelines for planning E-learning activities both inside and outside the classrooms.

METHODOLOGY

The research adopts the descriptive method as the most appropriate for these types of studies, describing a phenomenon and reaching a generalization by analyzing and reviewing previous research (Creswell, 2013). To conduct the study the researcher followed the following procedures:

1. Designing the questionnaire as the main instrument for data collection.
2. Testing the questionnaire by consulting specialists in the field of mobile learning and educational psychology fields.
3. Conducting a pilot study of 30 individuals for the research sample.
4. Testing the reliability and the validity of the research instrument.
5. Collecting data over three weeks of the second semester of the academic year 2014/2015.
6. Analyzing data.

Population and Sample

A simple random sample was selected from the research sample which consisted of all faculty members working in all colleges at Kuwait University (1350 faculty members) of users and non-users of mobile learning according to the academic year of (2014/2015). The research sample consisted of 314 who filled out the survey. Table 1 describes characteristics of research sample.

Of those who completed the survey, 65.6% were male and 34.4% were female. More than 81% were Kuwaitis, while about 18.5% were non-Kuwaitis. Sample distribution based

on the scientific degree consisted of 15.6% who were teaching assistants; 43% who were assistant professors; 20.1% who were associate professors, and 21.3% who were full professors. While 26.1% of the research sample had less than ten years of experiences, 25.8% had teaching experiences from 10 to 20 years, and the majority of the sample had more than 20 years of experience in teaching (48.1%). The majority of the sample are located in the art and humanities colleges (62.5%), while only 37.5% work in the scientific colleges.

TABLE 1 *.* Demographic characteristics of research sample

Demographics	Determinants	Frequency/Percentage
Gender	Male	206 (65.6%)
	Female	108 (34.4%)
Nationality	Kuwaiti	256 (81.5%)
	Non-Kuwaiti	58 (18.5%)
Scientific degree	Teaching assistant	49 (15.6%)
	Assistant professor	135 (43%)
	Associate professor	53 (20.1%)
	Full professor	67 (21.3%)
College	Scientific colleges	118 (37.5%)
	Art & Humanities colleges	196 (62.5%)
Teaching experience	Less than 10 years	82 (26.1%)
	10-20 years	81 (25.8%)
	More than 20 years	151 (48.1%)

Instrumentation

The current study used a questionnaire as a tool for answering the research questions. The questionnaire consisted of two indices. The first index focused on demographic data which included gender, nationality, scientific degrees, colleges, and years of experience. These entry fields have been used to provide description about participants in this study. The second index of the questionnaire consisted of (34) statements divided into two categories. The first one consisted of (11) statements directed to investigate the different aspects of mobile learning use. The second category consisted of (23) statements focusing on the obstacles of mobile learning use. All items in both categories will be described and analyzed in the results section in this paper.

Validity of the Instrument: The validity test aimed to ensure that the instrument is testing what is meant to test (Creswell, 2013). This research aimed to identify the different aspects of the use of mobile learning by the faculty members at Kuwait University in their courses and the obstacles that cause reluctance toward their use. To ascertain the validity of the research instrument in terms of languages, comprehensiveness, importance and clarity, validity was tested through two ways.

First: Face validity: The research instrument, which was designed in Arabic language, was sent to five experts in the fields of curriculum and Instruction, instructional design, and educational psychology. The experts were asked to review the questionnaire before finalizing it. And according to the reviewers' feedback some of the statements have been edited, added to, or deleted to conclude with (34) statements divided into two indices to ensure a high level of instrument validity.

The researcher in this study has used a method of average for each item evaluated by the five reviewers, and eliminated only the items that obtained less than 3 score out of

5. Indeed, each reviewer was given a form containing the information about the purpose of the research including research questions and objectives, and a scale from 1 to 5 to evaluate the relevance of each statement in the questionnaire to the corresponding categories. The reviewers were also given an option to make some changes, if necessary, to the statements. Some of the changes they made; for example, "I deliver my taught courses on mobile technology" to become "I deliver the content of my courses on adequate mobile applications". In addition, general changes were made to increase the readability of the statements and correct some grammatical mistakes.

Second: Content validity: An inter-item correlation test was conducted to validate the content of the research instrument by identifying the correlation between the score of each of the questionnaire statements and the total instrument score as well as each of the statements and the category to which it belongs. In addition, a correlation test was conducted among the scores of the two categories of the instrument and the total instrument score. Table 2 describes the inter-item correlations.

TABLE 2 *.* Questionnaire's inter-item correlations

Aspects of Mobile Learning Use		Obstacles of Mobile Learning Use			
Statement	Index Correlation	Statement	Index Correlation	Statement	Index Correlation
1	-0.079	1	0.289**	12	0.584**
2	0.651**	2	0.263**	13	0.374**
3	0.707**	3	0.570**	14	0.340**
4	0.601**	4	0.621**	15	0.206**
5	0.626**	5	0.575**	16	0.062**
6	0.700**	6	0.500**	17	0.106**
7	0.628**	7	0.151**	18	0.071**
8	0.637**	8	0.186**	19	0.384**
9	0.689**	9	0.673**	20	0.509**
10	0.520**	10	0.535**	21	0.628**
11	0.697**	11	0.475**	22	0.526**
				23	0.471**

Note: * significant at $\alpha = 0.01$, ** significant at $\alpha = 0.05$

The previous table shows that there is a high correlation between the statements and the total instrument score as well as between the statements and their relevant category. That means the questionnaire instrument used in this study is, in addition to face validity, internally valid.

Reliability test: A reliability test was conducted among the instruments and their categories using Cronbach's alpha measure with a (314) sample of faculty members at Kuwait University. See Table (3) for reliability test results.

TABLE 3 *.* Summary statistics of reliability test

Category	Statement No	Cronbach's Alpha
Aspects of Use of Mobile Learning	11	.793
Obstacles of Mobile Learning	23	.755
Total	34	.630

Table 3 shows that reliability coefficients ranging from (0.755-0.793) for the two categories, and the result for the total questionnaire equals to (0.630), which means an overall high reliability of scales used in the survey.

RESULTS AND ANALYSES

Statistical analysis was conducted using SPSS, a statistical analysis program. Based on the first review of data collected, aspects and obstacles of mobile learning use were examined in detail according to the two main questions raised in this study.

Aspects of Mobile Learning Use

An extensive literature review has been conducted to identify the different aspects of mobile learning use. The research in the current study proposed that there are three types of aspects' areas of mobile learning use by faculty members; they are: Content/information sharing, communication and collaboration, and assessment and performance evaluation. By adopting the three areas of aspects of use, a quantitative data collection was conducted to investigate the different aspects of using mobile learning among faculty members at Kuwait University. In the following section, analyses of each aspect will be reviewed through listing the results based on the survey outcomes conducted at Kuwait University. Table 4 shows aspects related to content/information sharing.

TABLE 4 . Aspects related to content/information sharing

No.	Statement	Yes Freq. %	May Freq. %	No Freq. %	M	SD	Seq.	Scale
1	I use my mobile device to support students' learning.	49 15.6	168 53.5	97 30.9	2.15	0.665	5	Maybe
2	I deliver the content of my courses on adequate mobile applications.	28 8.0	56 15.5	230 76.5	2.31	0.866	3	Maybe
3	I upload course materials such as books, articles for my students to be accessible by their mobile devices.	31 10.9	61 33.7	64 55.4	1.96	0.815	8	Maybe
4	I provide course related multimedia elements such as photos and videos in my mobile.	104 7.5	29 16.0	48 76.5	2.31	0.865	2	Maybe
5	I add educational activities for my students to be used via their mobiles.	19 10.5	108 59.7	54 10.5	1.81	0.607	10	Maybe

In table 4, 15.6% use mobile device in their courses, and 8% of the participants deliver their content through mobile applications that might be different than typical e-Learning based Systems, while 30.9% of the participants deny this type of use. And even though, faculty members at Kuwait University are not committed to uploading their course materials over their mobiles, 7.5% of the participants still find it suitable for uploading multimedia resources such as photos and videos for students to learn from. However, nearly 10% of the participants use and 10% do not use learning activities over mobile learning environment. The second area of aspects related to communication and collaboration is described in Table 5.

TABLE 5 . Aspects related to communication/collaboration

No.	Statement	Yes Freq. %	May Freq. %	No Freq. %	*M*	SD	Seq.	Scale
1	I use mobile learning for synchronous communication with my students.	110 60.8	26 14.4	46 24.9	2.36	0.855	1	Yes
2	I use mobile learning for asynchronous communication with my students.	56 30.9	61 33.7	64 35.4	1.96	0.815	8	Maybe
3	I use my mobile as a tool for virtual classroom in my course.	56 30.9	65 35.9	60 33.1	1.98	0.802	7	Maybe

When it comes to communication, faculty members at Kuwait University find mobile learning to be a good platform for communication. Table 5 shows that more than 60.8% of sample use mobile learning for synchronous communication. The participants, 35.4%, did not find mobile learning to be a better platform for asynchronous communication nor to convert it as virtual classroom for better communication. This could be due to the fact that there might be other platforms that provide a more effective and quick access comparing to the mobile devices, e.g using "WhatsApp" to communicate with students about course events. Third of the sample, 30.9%, use mobile devices as a tool for virtual classrooms in their courses. Table 6 presents the third aspects' area of mobile learning use that is related to assessment and performance evaluation.

TABLE 6 . Aspects related to assessment/performance evaluation

No.	Statement	Yes Freq. %	May Freq. %	No Freq. %	*M*	SD	Seq.	Scale
1	Home-works and assignments are submitted through mobile devices.	86 7.5	42 43.2	53 9.3	2.18	0.860	4	Maybe
2	I use mobile to view my students' work in progress.	62 4.3	65 35.9	54 59.8	2.04	0.802	6	Maybe
3	I announce course grades on mobile networked groups.	63 34.8	48 26.5	70 38.7	1.96	0.859	9	Maybe

Table 6 shows that when it comes to assessing and evaluating students as well as faculty performance, mobile learning might be a suitable platform for such purpose. Faculty members, 43.2%, show an average agreement when they have been asked about the use of mobile learning to post homework and assignments. Only 4.3% of participants use mobile devices to view students' work in progress. However, when it comes to evaluations and announcing grades, the response varies among the sample, 34.8% use their devices for this purpose. This could be due to faculty's preference to post grades through their devices which have been used as a communication tool among faculty. Students might also prefer to have their grades posted through such new media to allow for immediate communication with faculty, especially about their grades and work progress.

Table 7 provides the descriptive statistics, including the mean, standard deviation and 95% confidence intervals for the dependent variable (aspects) for each separate group (Content/Information Sharing, Communication/Collaboration, and Assessment/Performance Evaluation), as well as when all groups are combined (Total).

TABLE 7 . Descriptive statistics for the proposed aspects of mobile learning

Aspects	*N*	Mean	Sd	95% Confidence Interval for Mean
Content/Information Sharing	5		1.36	
Communication/Collaboration	3		1.04	
Assessment/Performance Evaluation	3		1.12	
Total	11		1.27	

Hence, to answer the first question states that "what are the aspects of using mobile learning by faculty members at Kuwait University?", one-way ANOVA was carried as shown in the table below.

TABLE 8 . One-way ANOVA test (main effect) of the proposed model of aspects of mobile learning

Source	*SS*	*df*	*MS*	*F*	Sig.
Between groups	45.86	2	23.91		
Within groups	157.13	10	10.23	2.26	.069
Total	176.14	12			

From Table 8, since the significant level is higher than 0.05, there is no statistical differences existing between the three groups of areas related to aspects of mobile learning. Therefore, there is no evidence that aspects of learning proposed in this study affect faculty members' use of mobile learning in their taught courses.

Obstacles Confronting Mobile Learning Use

To identify obstacles that faculty members at Kuwait University encounter when using mobile learning, a grounded approach was adopted to identify the major obstacles and categorize them into general categories. After collecting the data, three main categories were identified: institutional obstacles, individual obstacles, and structural obstacles. In the following section the results are presented and discussed.

TABLE 9 . Institutional obstacles encountered

No	Statement	Strongly Agree Freq. %	Agree Freq. %	Somewhat Agree Freq. %	Disag. Freq. %	Strongly Disag. Freq. %	*M*	*SD*	Seq.
1	The university provided all necessary resources to facilitate mobile learning.	30 / 17.3	58 / 33.5	64 / 37.0	15 / 8.7	3.5 / 3.5	3.53	0.992	4
2	The university developed a strategic plan to use mobile learning in education.	20 / 11.6	48 / 27.7	58 / 33.5	35 / 20.2	12 / 6.9	3.17	1.095	11
3	Procedures of mobile learning use are explained and well-documented.	16 / 9.2	45 / 26.0	67 / 38.7	33 / 19.1	12 / 6.9	3.12	1.045	15
4	Faculty evaluation assigned by the university encourages faculty members to use mobile learning.	29 / 16.8	48 / 27.7	61 / 35.3	22 / 12.7	31 / 7.5	3.34	1.127	7
5	The department I work in encourages the use of mobile learning.	22 / 12.7	47 / 27.2	46 / 26.6	32 / 18.5	26 / 15.0	3.04	1.255	16
6	The university offers extrinsic incentives to encourage the use of mobile learning.	6 / 3.5	17 / 9.8	29 / 16.8	70 / 40.5	51 / 29.5	2.17	1.070	23
7	The university allows faculty members to choose their preferred mobile learning.	27 / 15.6	45 / 26.0	53 / 30.6	30 / 17.3	18 / 10.4	3.19	1.202	9
8	The university provides good training programs on how to use mobile learning.	23 / 13.3	55 / 31.8	47 / 27.2	25 / 14.5	23 / 13.3	3.17	1.227	12

When it comes to institutional support for the use of mobile learning, Table 9 shows that mostly, Kuwait University provides an appropriate support for mobile learning use through the provision of necessary resources, strategies, and training. However, when it

comes to motivation and incentives to encourage faculty to continue to use mobile learning, participants answered that there are no incentives with more than 70% disagreement. The second category of obstacles encountering faculty members when using mobile learning is related to individual use, see the following table.

TABLE 10 *.* Individual obstacles encountered

No	Statement	Strongly Agree Freq. %	Agree Freq. %	Somewhat Agree Freq. %	Disag. Freq. %	Strongly Disag. Freq. %	*M*	*SD*	Seq.
1	The university provided all necessary resources to facilitate mobile learning.	30 17.3	58 33.5	64 37.0	15 8.7	3.5 3.5	3.53	0.992	4
2	The university developed a strategic plan to use mobile learning in education.	20 11.6	48 27.7	58 33.5	35 20.2	12 6.9	3.17	1.095	11
3	Procedures of mobile learning use are explained and well-documented.	16 9.2	45 26.0	67 38.7	33 19.1	12 6.9	3.12	1.045	15
4	Faculty evaluation assigned by the university encourages faculty members to use mobile learning.	29 16.8	48 27.7	61 35.3	22 12.7	31 7.5	3.34	1.127	7
5	The department I work in encourages the use of mobile learning.	22 12.7	47 27.2	46 26.6	32 18.5	26 15.0	3.04	1.255	16
6	The university offers extrinsic incentives to encourage the use of mobile learning.	6 3.5	17 9.8	29 16.8	70 40.5	51 29.5	2.17	1.070	23
7	The university allows faculty members to choose their preferred mobile learning.	27 15.6	45 26.0	53 30.6	30 17.3	18 10.4	3.19	1.202	9
8	The university provides good training programs on how to use mobile learning.	23 13.3	55 31.8	47 27.2	25 14.5	23 13.3	3.17	1.227	12

When it comes to individual obstacles, table 10 shows that faculty at Kuwait University have a positive attitude toward mobile learning with more than 80% willingness to continue using mobile devices in their teaching. Faculty members are equipped with the necessary skills to use these types of online platforms with 74% response and 48% said they do not face any difficulties in neither following up with homework nor following up with students' projects submitted on the online environment. However, participants responded with no training available for students, which could be an obstacle for better use of mobile learning (57%). The following table describes the structural obstacles encountering mobile learning use by faculty members.

TABLE 11 *.* Structural obstacles encountered

No	Statement	Strongly Agree Freq. %	Agree Freq. %	Somewhat Agree Freq. %	Disag. Freq. %	Strongly Disag. Freq. %	*M*	*SD*	Seq.
1	University's policies for teaching through mobile environment are clear	7 4.0	28 16.2	55 31.8	62 35.8	21 12.1	2.64	1.022	22
2	The university provided all necessary hardware and equipment for faculty members to support mobile learning.	19 11.0	56 32.4	64 37.0	23 13.3	11 6.4	3.28	1.037	8
3	The university provided all necessary hardware and equipment for students to support mobile learning.	11 6.4	55 31.8	66 38.2	33 19.1	8 4.6	3.16	0.963	13
4	My students receive training on how to use mobile learning platforms when requested.	7 4.0	35 20.2	77 44.5	46 26.6	8 4.6	2.92	0.902	18
5	Teaching through mobile devices is appropriate for all my courses.	26 15.0	64 37.0	56 32.4	23 13.3	4 2.3	3.49	0.980	5
6	All teaching objectives can be met through mobile learning approach.	15 8.7	45 26.0	67 38.7	38 22.0	8 4.6	3.12	1.001	14
7	I see that the high enrollment in courses is an obstacle with the idea of mobile learning.	24 13.9	34 19.7	44 25.4	58 33.5	13 7.5	2.99	1.181	17
8	Uploading the course materials in mobile systems discourages me to use mobile learning.	13 7.5	38 22.0	38 22.0	65 37.6	19 11.0	2.77	1.137	19

When it comes to structural obstacles, table 11 explains the different types of obstacles faced by faculty members when using mobile learning. For example, when participants

were asked about if the university has clear policies regarding the use of mobile learning, only 20% answered yes comparing to more than 47% saying no. Participants strongly agreed on the availability of hardware and equipment for faculty members to support mobile learning with a 43% and for students with 38%. While faculty responded that mobile learning is appropriate for all courses with a 52% comparing to only 15% saying no, meeting the teaching objectives through the mobile environment is not guaranteed. Faculty agreement of 35% and disagreement of 26% were somewhat equal. When asked about if the high enrollment could be an obstacle to use mobile systems, faculty responded 40% disagreeing with that. And when it comes to the difficulty of uploading the course materials, faculty members responded with 48% not having any difficulties in uploading the course materials nor they consider it a source of discouragement.

Table 12 below provides the descriptive statistics, including the mean, standard deviation and 95% confidence intervals for the dependent variable (obstacles) for each separate group of obstacles (institutional, individual, and structural), as well as when all groups are combined (Total).

TABLE 12 *.* Descriptive statistics for the proposed obstacles of mobile learning

Obstacles	*N*	Mean	Sd	95% Confidence Interval for Mean
Institutional	8		1.78	
Individual	7		1.24	
Structural	8		1.09	
Total	23		1.19	

As a result, to answer the second main research question, which states that "what are the obstacles that faculty members at Kuwait University confront during their use of mobile learning?" one-way ANOVA was performed, see table below.

TABLE 13 *.* One-way ANOVA test (main effect) of the proposed model of obstacles of mobile learning

Source	*SS*	*df*	*MS*	*F*	Sig.
Between groups	45.86	2	31.82		
Within groups	157.13	21	14.31	3.04	.021
Total	176.14	23			

From Table 13, since the significant level is higher than 0.05, there are no statistical differences existing between the three groups of areas related to aspects of mobile learning. Therefore, there is no evidence that aspects of learning proposed in this study affect faculty members' use of mobile learning in their taught courses.

Summary of the Results

The major findings of this study on Kuwaiti public and private school teachers' perceptions towards ICT use in the classroom can be summarized as follows:

1. Teachers' perception towards ICT use in the classroom can be indicated by identifying the following factors: school type, subject area, qualification, and discussion type.

2. Face-to-face discussion among private school teachers helps to highlight the advantages of using ICT in the classroom while providing information in greater depth. Online discussion was found to be the most effective method for helping public school teachers

to increase their perception about ICT utilization in the classroom.

3. Gender, age, school district, and technological climate were not found to affect teachers' perception towards ICT use in the classroom.

DISCUSSION

This study brings together evidence from a range of sources on the perception of Kuwaiti teachers towards the use of ICT in the classroom. It draws on literature associated with teachers' use of Internet-based technology in the classroom, and also on a recently developed instrument of teachers' attitudes towards the use of classroom web resources. Key findings of the report include that some personal characteristics and school type are major factors in determining teachers' perception with ICT use in the classroom.

The use of ICT depends on a number of aspects. One of them concerns the subject taught. The current study found that the subject taught affects teachers' perception towards ICT use in the classroom. Practically, Science and English teachers are likely to be affected by their perception which causes them to either accept or deny ICT use in the classroom. Perhaps the nature of some subjects taught is not flexible enough to suit ICT. Nass and Kwan (2002) agree that some instructional materials can inundate instructors, and students find it difficult to discuss and analyze them with the same rigor that they would in a traditional classroom setting. These disappointments and frustrations could lead to a decreased motivation in less flexible subjects, especially the art subjects such as Arabic, Religion, History, etc. Another issue that relates to the effect of teaching subject on teachers' perception towards the use of ICT is the lack of curriculum usability and usefulness in certain subject areas. For example, many research studies found a statistically significant positive relationship between ICT and English subject (John, 2005; Hennessy *et al.*, 2005). Teachers must feel the effectiveness, alignment with curriculum, and ability to use ICT in the classroom (Walton and Arlene, 2004). Lack of usability and usefulness, which is the common case amongst teachers in Kuwait, may prevent teachers from adopting new pedagogical methods to boost the learning process, and hence perceive the significance of such technology.

Moreover, the present study reveals that teachers' qualifications affect their perception towards ICT use in the classroom, as supported by Harris (2002). Thus, developing an ICT integration preparation plan for teachers could p rovide them with the competencies that are required to successfully integrate ICT in pedagogical context; particularly Internet communication to support interactive learning. As far as the school type factor is concerned, private school teachers were shown to have a better perception towards ICT use in the classroom compared to their counterparts in public schools. One of the reasons that might have contributed to this finding is the slow decision-making process of the public school system in Kuwait. It involves high startup costs and long implementation strategies, including preparing IT staff and training teachers. Another obstacle that might prevent public school teachers from increasingly using ICT in the classroom is perhaps curriculum schedule and time allocated (Khana *et al.*, 2013). Teachers are dealing with a full teaching schedule which may discourage them from approaching new educational initiatives. Indeed, BECTA, the British Educational Communication Teaching Agency, (2004) reports that teachers perceive that they have greater autonomy to explore ICT at home and opportunity to use it for a longer period of time. Hence, if teachers were given enough time, they would have a better perception towards ICT use in the classroom.

Despite these limitations, it appears that knowing the most effective method of communication among teachers based on their school type becomes a key factor in enabling the integration of ICT in the classroom. In particular, private school teachers who do not

realize the advantages of using ICT in their classroom are less likely to get involved in an online discussion. However, public school teachers who were involved in an online discussion about ICT are more likely to obtain a better perception towards ICT utilization in the classroom.

Yet, having a discussion with school teachers based on their school type increases the acceptance of the use of ICT in the classroom. For example, public school teachers have a better perception about ICT use in the classroom by being involved in an online discussion. This finding was consistent with) Yang and Shu (2004) results. Even though Kuwaiti public school teachers lack the accessibility to computer facilities and the Internet in their schools, they perceived the benefits and got a taste of its uses.

The current study found, on the other hand, that some personal characteristics and technological climates do not show to be enabling factors in making a difference in teachers' perception of ICT in the classroom. Perhaps this is because of the lack of the utilization of appropriate technologies as an integral part of curriculum, and not as an add-on to existing practices that were in place before ICT was invented. In addition, insufficient facilities, and traditional methods of teaching remain in some schools. Perhaps the biggest obstacle to address is patterns of teaching which require a fundamental change in pedagogical strategies deployed, even though teachers perceived ICT as a positive contributory factor to practice in the classroom. Accessing real life resources on the classroom's data projector, for example, greatly encourages simulations and demonstrations to be practiced (Condie and Mary, 2004).

CONCLUSION

ICT utilization in the classroom is recognized as a necessary learning and teaching tool for all teachers in all schools. Without this acknowledgement or commitment, the majority of teachers in the Kuwaiti public education system never have the opportunity to benefit from the government's ICT plan. Given this uncertainty, it remains to be seen if the utilization of ICT in the classroom can weather a future based on online and face-to-face discussions, staff development, and school indifferences. The introduction of ICT in the classroom can be potentially useful for both teaching and learning. Even though participants responded very positively towards ICT utilization in the classroom, some concerns still exist regarding personal and school characteristics surrounding the teachers and their teaching school climate. More importantly, positive perception towards ICT use in the classroom reported in this study is provided from the private school teachers' point of view.

LIMITATIONS AND RECOMMENDATIONS

it is essential that future studies investigate the usability and suitability of ICT use as a tool for learning in public schools from various teachers as well as from learners' perspectives. In addition, other methods of research in the investigation of the concerns of teachers, such as school facilities and flexibility of the curriculum, can also be added as items in self-reporting questionnaires. Besides, other methods of evaluating the availability and usefulness of ICT, especially in art studies areas, such as directly observing patterns of navigational behavior of teachers and learners and type of multimedia elements could also be investigated. Furthermore, it is pertinent that an online discussion among teachers in public schools is undertaken as it positively contributes to the perception of ICT use in the classroom. For ICT to be utilized it requires the conscious effort of all educators.

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— This article does not have any appendix. —