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Article

The acceptance of Moodle Mobile in Smartphones - Case Study – Al-Andalus University

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Abstract

Nowadays with the rapid developments in web and mobile computing technologies, students have the ability to use digital learning objects to draw upon a rich variety of resources that can make education more effective. Moodle (Modular Object-Oriented Dynamic Learning Environment) is known as a Course Management System (CMS). The aim of this research is to study the students and university staff' acceptance of applying the Moodle in smartphones. It was field survey on the Al-Andalus University in Yemen. The data were collected and analysed using SPSS. After analysing the survey results and questionnaire study, we found that the sample has a strong acceptance (77.7%) for the use of Moodle Mobile in smartphones.

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1. Introduction

Deployment of 3G/4G mobile technology is speeding up; research activities on mobile platforms for supporting mobile learning have emerged in the academic community. Sometimes students cannot approach to classrooms because of some issues, which can decrease the study quality in these specific areas. Therefore, M-learning should be applied for supporting student access to virtual-laboratory - environments at any times from anywhere by simply using their own computers, laptops, smartphones, or any other electronic equipment [1].

Learning Management System (LMS) based on a computer connected to the Internet, that make it possible for students to learn more by obtaining course materials, sending assignments, taking quizzes, communicating with their teachers and fellow learners. For teachers, the LMS assists by allowing them to create, make available, manage, customise and modify a range of digital content and learning objects, to reuse that content and track their students' learning. On the other side (the university), the LMS enables it to expand its student number though delivering courses to students around the world. Since the advent of the Internet, various technologies have been used to enhance learning [2].

Mobile learning provides students with greater customization and mobility compared to traditional learning. On its side, ubiquitous learning seeks that students can acquire knowledge at any time and place. Some mobile devices such iPad, Tablet smartphone have been used by most of the students in the university. It is recommended to use smartphones for supporting students in learning as well as the universities staff. Most higher education institutions use a Learning Management System (LMS) to handle its needs of learning and teaching processes. Some institutions adopted commercial systems and some open source systems [3].

Smartphone is a communication tool whose ability is getting closer to the use of notebook, although now the most popular activities performed on smartphones is accessing social media. The most frequent activities of smartphone users are social media, group discussion, youtube, browsing, games, download, e-commerce, and entertainment news. However, e-learning and other learning applications are the shortest activities of all activities, whether through smartphones or notebooks. Social learning concepts, micro-content, and informal learning are the result of the mobile learning [4].

Smartphones are used worldwide due to their enhanced features, such as computing power, high storage capacity, attractive interface and Wi-Fi connectivity and upload capabilities. These are personal, portable and being increasingly used to assist students' learning that creates new educational opportunities for university students. Social media, on the other hand, has emerged in the last decade as a dominant feature of the technology landscape, especially for our current generation of digital-native students [5].

A smartphone is able to do a wide variety of functions since it is at its core, a simplified handheld computer device. A smartphone can allow a user to increase their overall productivity, make your life more convenient, stay in touch with friends and family [6].

Moodle (Modular Object-Oriented Dynamic Learning Environment) is known as a Course Management System (CMS). It is used all over the world (193 countries) by more of 400,000 registered users. Moodle is an open source software e-learning platform. It does not provide a formal model for future development [7]. Moodle is LMS written in php. Most important part of Moodle is the Course. Courses are the spaces on Moodle where teachers add learning materials for their students. Courses are created by admins, course creators or managers. Teachers can then add the content and re-organize them according to their own needs [8]. Furthermore, Moodle is a learning platform designed to provide educators, administrators and learners with a single robust, secure and integrated system to create personalised learning environments. Any discussion about Moodle should begin with a brief introduction to open source software (OSS)

and the OSS community. OSS is a collective name for software code that is freely available and distributed. In contrast to proprietary or commercial software, anyone may copy, modify, and share open source code without paying royalties or fees [9]. Moodle Mobile is the official mobile application for Moodle. With the Moodle Mobile app, you can learn wherever you are, whenever you want, with these app features: [10].

•Easily access course content - browse the content of your courses, even when offline

•Connect with course participants - quickly find and contact other people in your courses.

•Keep up to date - receive instant notifications of messages and other events.

•Submit assignments - Upload images, audio, videos and other files from your mobile device.

•Track your progress - View your grades, check completion progress in courses.

•Complete activities anywhere, anytime - attempt quizzes, post in forums, play SCORM packages, edit wiki pages and more - both on and off-line.

Currently there are two methods, which can be used by users to access Moodle from a mobile device [11]:

1-Browser-based: the main advantage is immediate access without any additional changes to the system, however it can cause interface-related issues and requires an constant internet connection.

2-Using a native application: can offer the same security as an authenticated browser connection and a custom interface designed for mobile devices' screens.

The first version of the new Moodle Mobile app was recently released on Google Play (for Android) and Apple iTunes (for iOS) [12]. The new app has been designed as a platform with the following strengths:

• Secure.

•Can work offline.

•Faster and more convenient Moodle operations.

•Support notifications on all platforms (coming soon).

•Can be branded by any Moodle site easily using CSS.

A number of applications developed, have approached the mobility accepted of a LMS (Learning Management System) for a more pragmatic point of view [11].

1) MDroid : (Moodle for Android) offers support for: Authentication, course and file listing, forum access, parallel file download and offline mode. As strong points, it offers a simple user interface and all the common functionalities found on the web.

2) mTouch: is the first native Moodle application for the iOS mobile platform. It does not require any changes on the server side and offers the standard functionalities: course visualization, forum usage, calendar events, chat, grade viewing, wiki access and quiz solving.

3) mBot: is an Android targeted application that allows multiple users on the same device. The user can instantly access its course and activities by their usage relevance and unlike the previous applications mBot it is free.

In this paper we have analyzed, from both learning and technological perspectives, the development of learning applications using smartphone. We have considered M-learning architectures as a way to extend traditional virtual class with Moodel Mobile. While it is clear that the smartphone devices can meet all learning styles, and we imagine that it will support the best learning methods for instructors as well as students become more comfortable with smartphone devices and their characteristics. If used efficiently, smartphones can help in the creation of an attractive learning environment.

The aim of this paper is to determine how students and University staff accepted the application of Moodle in smartphones as an instructional medium. The importance of education using smartphones will support students' capabilities in education and give them the opportunity and access to the innovations in order to reach a high level of excellence and creativity

2. RELATED WORK

Haytham studied and evaluated the Learning Management System of TUBerlin, Information System for Instructors and Students (ISIS), that

has been adopted since 2006, their focus was on three characteristics of ISO-9126, which are usability, functionality, and reliability of ISIS. [3]

Khan investigated how students at university use smartphones with respect to engagement and interaction in various learning activities. It studied how students engage with learning tasks and what social interactions occur when they are trying to achieve their academic goals.

Also, the tools/software that supports their academic goals in different learning settings or activities will be considered. This paper showed the background of the research to promote engineering students' learning curve. [5]

Zamfirache followed the design and development of a mobile application and a web service designed as an extension to the Moodle course management system, with mobile-specific functionality, such as the offline mode, notifications, and attendance based on location. [11]

Mihajlov made a usability evaluation of standard modules in Moodle, one of the leading open source learning management systems. With this research, they obtained significant results and information's for administrators, teachers and students on how to improve effective usage of this system.

More importantly, it opens up fresh possibilities for implementing pedagogical innovations in an environment where students are expected to function as active, independent, self-reflected and collaborative participants. [12]

Brand tested the efficacy of a blended learning iteration with iPad tablet computers, an e-textbook and Blackboard's Mobile Learn application connected with a learning management system (LMS). Mobile learning was embedded into the pedagogical design of an undergraduate subject run in two semesters with 135 students.

Results suggested that students were positive about mobile learning, but they were unconvinced that it made a difference to their learning. Performance variables demonstrated that age and self-managed learning attitudes were important covariates with academic success, and mobile learning per se was important but not independent from curriculum design and student engagement. [13]

Fatos analysed, from both learning and technological perspectives, the development of learning applications using mobile devices.

To this end, proxy and proxy less architectures are considered as a way to extend traditional virtual campuses with mobile clients. The objective is twofold: to access learning materials and to support learning activities. A prototype of a Virtual Campus is developed using MLE-Moodle –the Mobile Learning module of Moodle. The proposed Virtual Campus enables mobile clients to perform online learning activities and is a step towards achieving the "anytime, anywhere" paradigm. [14]

Al-Kindi tried to explore students' skill levels of LMS (Moodle) and their knowledge of online tools or technologies and then looked for a correlation between smartphone usage and using of online tools and Moodle in learning.

The study conducted among 173 students in the Department of Information Studies (DIS) in Oman, using online survey.

The study concluded that students prefer to use smartphone for accessing these tools rather than using it to access LMSs, while a positive correlation was found between the use of these tools and smartphones, but there was no correlation between smartphones and using LMSs. [15]

3. Research Methodology

The descriptive survey method was adopted in conducting this study. The descriptive analysis was used in analysing the data of the study.

The means, standard deviations, t-test, analysis of variance in analysing data were used (SPSS).

The data of this study was gathered by means of a paper, pencil survey and through internet.

The aim of this questionnaire is to find out the Acceptance for applying the Moodle in smartphones. The questionnaire was based on five scale options: Strongly agree, Not sure, Disagree, Strongly disagree.

The questionnaire contained the necessary data for the study that was sent to all participants and consisted of two sections.

3.1. Research Question and Aim

The aim of this research is to find out the answer to 'Do the students and University Staff accept applying the Moodle using their smartphones'

3.2. Questionnaire Analysis

SECTION 1: Personal information of the respondents to the questionnaire .

- What is Gender?
- What is their type phone?
- What is your level of education?

SECTION 2: Acceptance for applying the Moodle in smartphones.

A. The Community and the Sample

The targeted Samples were students, teacher and academics. The number of questionnaires that were distributed randomly was 60 questionnaires to Al Andalus University in Sana'a

B. The Characteristics of Respondents

Aims to know the answers to Section A and characteristics of Personal information of the respondent to the questionnaire, and to provide descriptive statistics for personal data.

1. Variable Gender

Shown in Figure 1 that the majority of respondents were females forming (66.2%).

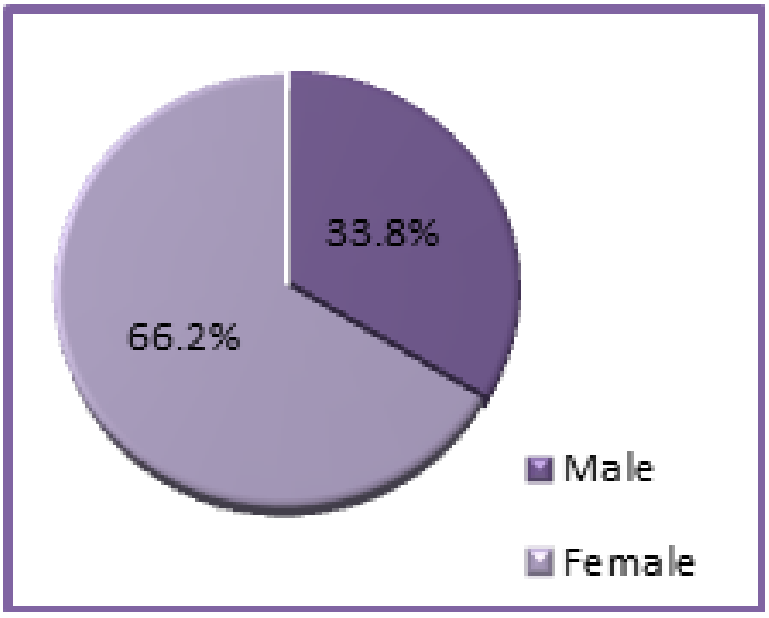

Fig1: Variable Gender

2. Variable Type Phone

Clear from Figure 2 that the majority of the sample had SmartPhones (62.8%), followed by (Normal Telephone) by (31.1%).
Finally 6.1% used no phones (Nothing).

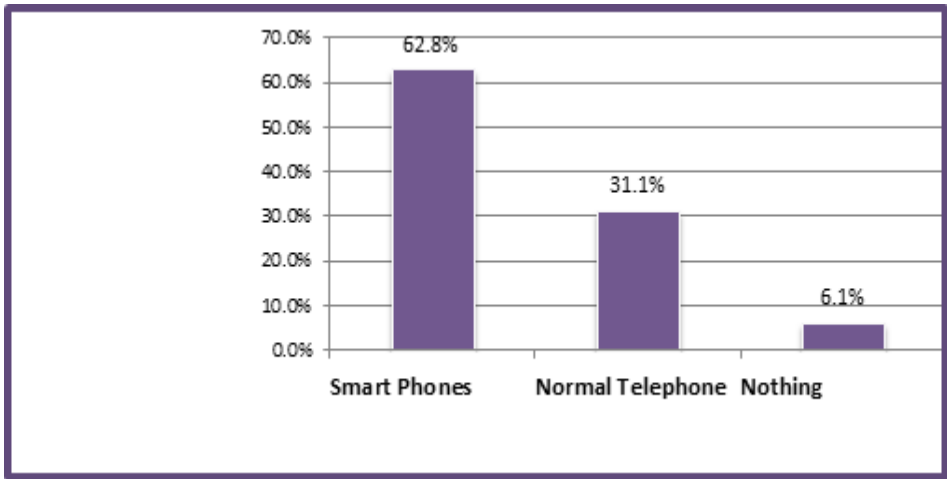

Fig2: Variable of Type Phone.

3. Variable Current Job

Clear from Figure 3 that the majority (Current Job) of the sample were (Student) rate (50.0%), (Administrative Officer) rate (26.4%), followed by Teacher (16.9%), Manager by 4.7%, and Other (0.7%) .

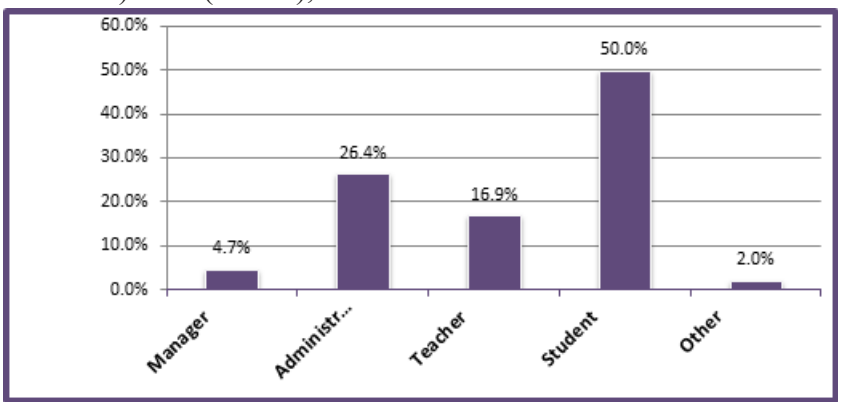

Fig.3: Variable of Current Job.

4. Results and Discussion

The element 1 to 15 of the questionnaire reflect acceptance for applying the Moodle in smartphones in learning.

1-I support the idea of applying the Moodle in smartphones.

2-Smartphones help to motivate the student to deal with the program Moodle

3-The program will be more near the student and the teacher from the computer.

4-Smartphones Moodle achieves the objectives better.

5-Technical qualities in smartphones do not support model.

6-Gives an opportunity for the student and for the teacher to deal with the Moodle better.

7-The teacher and the student can get to the Moodle at any time and in any place.

8-The small screen of the smartphones of constraints in the use of the Moodle in Mobile.

9-I do not want to use the Moodle in smartphones.

10-The application is not available in all kinds of phones and by following the process used to be limited.

11-The program will become more interactive between teacher and student when used with smartphones.

12-The enormous potential of Moodle does not commensurate with the potential of smartphones.

13-The lack of flexibility to deal with all the Moodle services in smartphones.

14-Gives students a chance to connect with the teachers more.

15-Will help the characteristics and advantages of smartphones to spread the program Moodle.

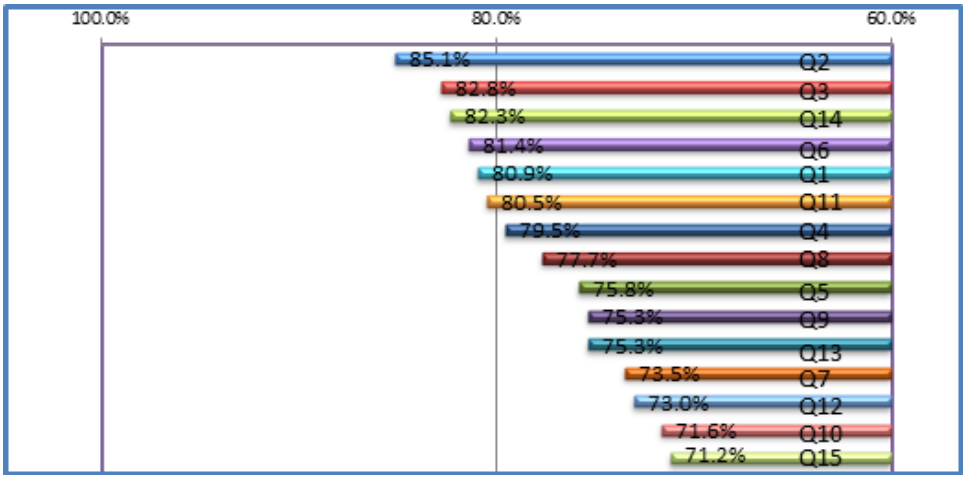

Fig.4: Smartphones help to motivate the student to deal with the program Moodle

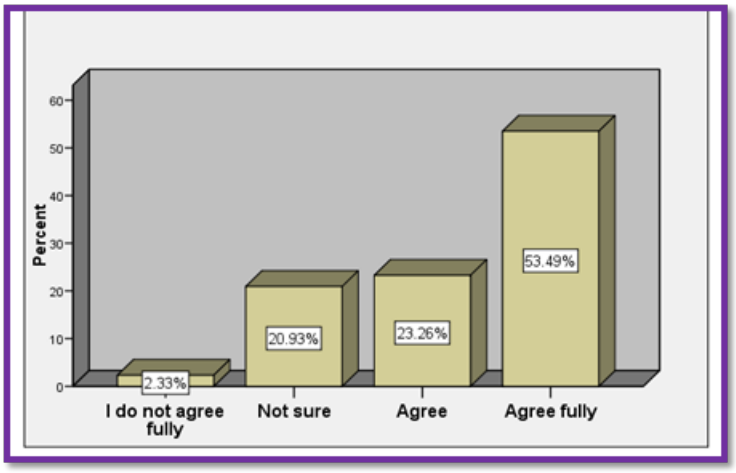

Fig.5: Mean of the questionnaire indicators.

As shown in Figure 5, Q2 (Smartphones help to motivate the student to deal with the Moodle). The result of the analysis of the questionnaire found that 53.49 % of the respondents agree full, and 23.26% agree; with 20.93% of the respondent not sure; and 2.33% of the responded do not agree fully.

The data gathered from the respondents are presented in Table 1, which demonstrates the percentages of the descriptive statistics for Acceptance for applying the Moodle in smartphones measured by a Likert scale.

A Likert scale is a psychometric scale commonly used in questionnaires, and is the most widely used scale in survey research.

Q. No	I do not agree fully		I do not agree		Not sure		agree		Agree fully		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Q1	7	6.1	18	12.2	16	10.8	56	37.8	49	33.1	148	100.0
Q2	3	2.0	5	3.4	12	8.1	62	41.9	66	44.6	148	100.0
Q3	1	.7	9	6.1	20	13.5	61	41.2	57	38.5	148	100.0
Q4	26	17.6	73	49.3	23	15.5	15	10.1	11	7.4	148	100.0
Q5	0	.0	5	3.4	23	15.5	62	41.9	58	39.2	148	100.0
Q6	0	.0	9	6.1	29	19.6	56	37.8	54	36.5	148	100.0
Q7	22	14.9	73	49.3	29	19.6	10	6.8	14	9.5	148	100.0
Q8	8	5.4	49	33.1	43	29.1	33	22.3	15	10.1	148	100.0
Q9	3	2.0	5	3.4	18	12.2	68	45.9	54	36.5	148	100.0
Q 10	0	.0	1	.7	5	3.4	39	26.4	103	69.6	148	100.0
Q 11	0	.0	2	1.4	9	6.1	28	18.9	109	73.6	148	100.0
Q 12	7	4.7	32	21.6	30	20.3	48	32.4	31	20.9	148	100.0
Q 13	2	1.4	26	17.6	16	10.8	52	35.1	52	35.1	148	100.0
Q 14	22	14.9	57	38.5	27	18.2	25	16.9	17	11.5	148	100.0

Table1: Descriptive statistics for the questionnaire indicators.

5. Conclusions

The study showed how the use Moodle mobile could be improved by the introduction of M-learning. The M-learning themes offer a potential for enhancing the student's performance and experience within this particular course, but also in a wider context of higher education. In this paper we have considered how to integrate the function Moodle Mobile to support the educational experience. Teacher can record their lectures using smartphones, and allow students to access it in the future.

Further studies are required to be conducted on the effect of other variables in the use of smartphones in education.

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