Adoption of Mobile Technologies in Teaching

Qaysar S.Mahdi

Tishk International University, Erbil, Kurdistan, Iraq

qaysar.mahdy@ishik.edu.iq

ABSTRACT

This paper introduces the new Timesheet technology development project for designing and managing the Electronic Learning Management System (ELMS) on the mobile devices for the UNESCO Virtual Campus Project in Iraq. The new mobile technologies are new ways. In this paper the UNESCO timesheet technology is used to produce, edit and publish the e-lectures and e-courses. The pedagogical model development for Avicenna course is suggested in this project to design and organize the ELMS on the Moodle platform of the mobile phone. The sequence time is arranged to be no more than 20 minutes, the number of sequences for each module is 60 and the total time for each module is 20hrs which is equal to one Avicenna credit. The Avicenna course is composed from two or three modules depending on the course syllabus. M Learning gives the possibility for teachers and students to present their e-courses, video lectures, power points lecture, and the assessments simultaneously on the mobile phone through URL links anywhere and anytime. The result from this project is to have easy access, very easy, suitable, flexible, and economical production facility that saves time, money and efforts for teachers and students everywhere and anytime. For future it is suggested the cloud computing technology for M Learning which will use the Moodle cloud and facilitate and improve the performance of ELMS.

Keywords: Avicenna, Learning, Mobile, Pedagogical, Timesheet.

1. INTRODUCTION

The Mobile learning or m-learning is a relatively new tool in education which enables teachers and students to create new environments for present and distance learning. Mobile learning it's defined as E-learning through mobile computational devices: Palms, machines, even your digital cell phone" and it is gaining importance in different sectors of society (Quinn, C. 2000, Maria Luisa Vinci & Daniela Cucchi ITI-IPIA Leonardo da Vinci Florence, 2018).These mobile devices are more narrowly defined by the New Media Consortium in 2012 as Android devices, Windows –or iPads, i.e. small, wireless, mobile personal computers which have finger-driven touch screens and are backed-up by diverse applications in a well-provisioned application marketplace (Melhuish K, & Falloon,2010, Falloon G. 2013, Clark W & Luckin R.2013).

2. MOTIVATION OF M LEARNING

It is expected that the next generation of distance learning will be the mobile learning (M Learning). The wide diffusion of Internet allows maintaining that M Learning is today the state of art for distance learning in Europe. Figure1, shows the principles of Mobile Learning, which includes the Access, Metrics, Cloud, Transparent, Play, Asynchronous, Self-Actuated, Diverse, Curation, Blending, Always-On and Authentic.
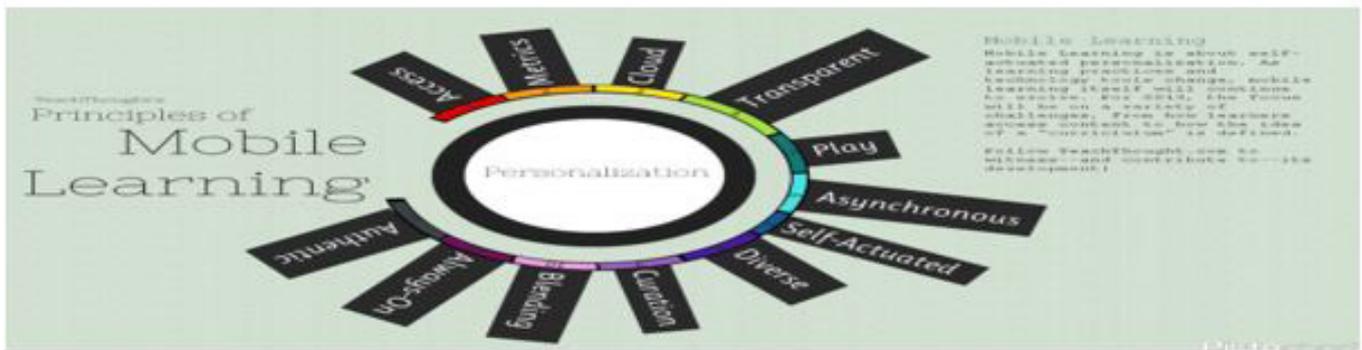
FIGURE 1. Principles of M-Learning

2.1. THE PEDAGOGICAL MODEL FOR M LEARNING

Mobile education is a component by pedagogical way, technological disciplines, and challenging ideas currently. The development of computer technology to the communication bandwidth and computational power of mobile devices, the cost of wireless mobile devices, and its penetration rate will influence the development of mobile education, especially even more so in China (Jun Hu* 2015, Jing Zhang*2015).

2.2. PEDAGOGICAL MODULE FOR ELMS

In this section, the following definitions and topics are defined;

2.2.1. Avicenna course

Avicenna course is a part of an academic curriculum in the degree program delivered by your institution. An Avicenna course consists of online learning hours and contact hours between tutors and learners.

2.2.2 Avicenna modules

An Avicenna module is a "course unit". An Avicenna course is composed of one or several modules (or course units). A module has twenty (20) hours duration; A module is equivalent to one (1) Avicenna credit.

2.2.3. Avicenna sessions

An Avicenna session is the "equivalent" of a chapter in traditional education an Avicenna module consists of several sessions. According to the involved documents, sessions might be classified into: Introductory (or first) sessions, Intermediary sessions and Terminating (or last) sessions

2.2.4. The first session (of the module)

The first session consists of the following (multimedia) documents:
Welcome,
Overview (of the current module material),
Learning outcomes (of the current module),
Previous knowledge (required before starting the current module)

2.2.5. The intermediary sessions

This session consist of the following (multimedia) documents:
Diagnostic Assessment,
Overview (of the current session material),
Learning Outcomes (of the current session),
Set of learning sequences.

2.2.6. The diagnostic assessment

Diagnostic assessment is required before starting the current session, It is intended to probe the cognitive background of the learners, and to remind them of relevant material.

2.2.7. The last session (of the module)

Learning resources, which consists of a set online (multi- media) documents,

Acknowledgement of the used online and/or offline,

Paper and/or electronic resources

2.2.8. Avicenna learning sequences

The sequence is the basic unit of the instructional process (something like section in the traditional education). Each (Avicenna) session consists of several (Avicenna) learning sequences, of twenty (20) minutes each. A sequence consists of the following:

Introduction (Welcoming trainees, introduction of the academic tutor, and definition of the learning sequence objectives),

Content (the new learning material),

Conclusion (summary of the presented content)

2.2.9. The formative assessment

Formative assessment is intended to help in the formation of the cognitive mass, It follows each learning sequence (remember that diagnostic assessment proceeds each session). Remark: summative assessment (which is intended to assess the degree of accomplishment of the learning outcomes), is not yet implemented in Avicenna courses.

3. TIMESHEET TECHNOLOGY IN MOBILE LEARNING

The Timesheet Technology is new software program, which is used to edit and create the e-lecture, which is composed from the audio, video, lecture power point slides. In order to produce an electronic lecture, a Timesheet program is used to capture the vision (windows media encoder) in this step a video file will be created. This video file should be converted to one with a smaller size real producer. Power point lecture must be ready for matching the two e-lecture components (video file and the writing in which produced as power point file with extension of power point text. The (Timesheet) program to merge the two components taking into account the synchronization of speech and writing.

3.1. Producing the e-lecture (Avicenna sequence) using Timesheet Technology

The following steps explain the procedure of producing the e-lecture with Timesheet Technology as follows; Step 1: Compose the e-lecture folders which are; Audio folder, Video folder, presentation folder, images folder and Timesheet folder. Figure 3, shows theses folders, and Figure 4, shows the Timesheet script programs which consists the main folders and the script software program with timing.
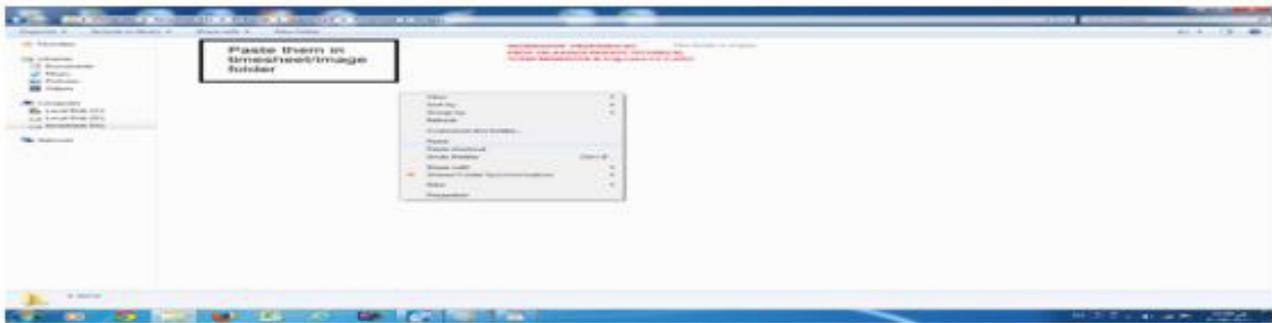
FIGURE 3. Timesheet folders

FIGURE 4. Timesheet script programs folders

Step 2: Starting to insert the timing of each slide of the presentation lecture. Figure 5, shows the presentation power point file. Paste the power points images in the timesheet program. Then paste the power points images in the timesheet program, see Figure 6 and Figure 7.

FIGURE 6. Inserting the timing of power point slides of the lecture inside the Timesheet program

FIGURE 7. Paste the power points images in the timesheet program

Step 3: Insert the timing of each image of the power point lecture. Figure 8, shows these steps.
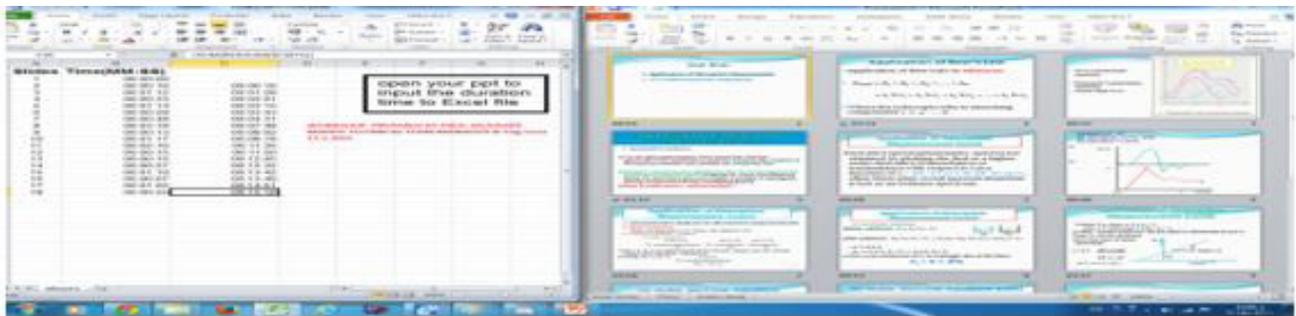

FIGURE 8. Inserting timing for power point images

Step 4: Insert the audio files.

Step 5: Inserting the video files inside the video folder.

Step 7: Opening the timesheet program and inserting the audio, video, image and timing folders.

Step 8: Producing the e-lecture. The timesheet program includes the synchronization between the audio, video and images. Figure 9, and Figure 10, show examples of online courses produced by the Avicenna Virtual Campus (2003-2014).

FIGURE 9. E-Lecture on Electromagnetic fields

Figure 10, shows examples of online courses produced by the Avicenna Virtual Campus (2003-2006) in different countries, Egypt, France, Algeria, etc.
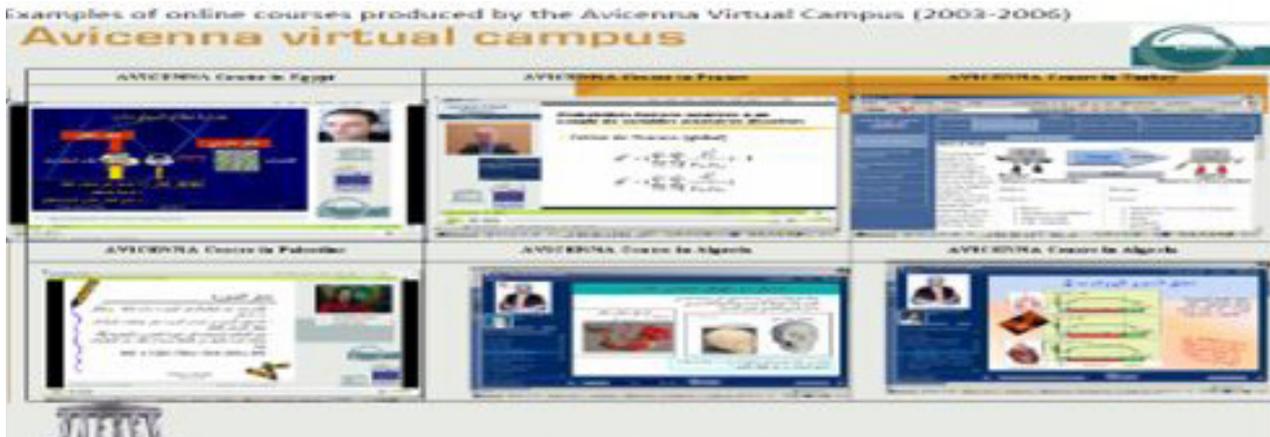
FIGURE 10. Examples of online courses produced by the Avicenna Virtual Campus (2003-2006) in different countries, Egypt, France, Algeria, etc.

4. RESULTS

The TIMESHEET technology software program and procedures are applied to create the E-Lectures on the mobile device as shown in Figure 11. In this method, the video, audio and power points slides are composed by using Timesheet program technology.

FIGURE 11. Adoption of on line E-Lecture on mobile device by using TIMESHEET Technology (Qaysar Mahdi, 2017)
The same technology also is adopted to produce the E-Lecture on the mobile phone.

Figure 12, shows the video, power point slides with the outline of the lecture on the mobile screen. Now, this adoption offers the possibilities to the teachers and students to log into the link of the ELMS for any course and could edit, publish, their courses, conferences, symposiums and downloads the video lecture, power points slides and apply the E-Examinations and E-Quizzes on the mobile phone.

Figure 12. Adoption of on line E-Lecture on mobile device (Qaysar Mahdi, 2017)
Figure 13, shows the ELMS and E-Curricula on the mobile device screen.

Figure 13. Presentation the ELMS and E-Curricula on the mobile device screen (Qaysar Mahdi, 2017)
Figure 14, shows, the design of the e-lecture and Quiz assessment. Figure 15, shows the multiple choices Quiz examination on mobile device screen (J.Prévost, 2001, & Attewell, 2005). While Figure 16, shows the Quiz result of e-lecture on mobile device screen.
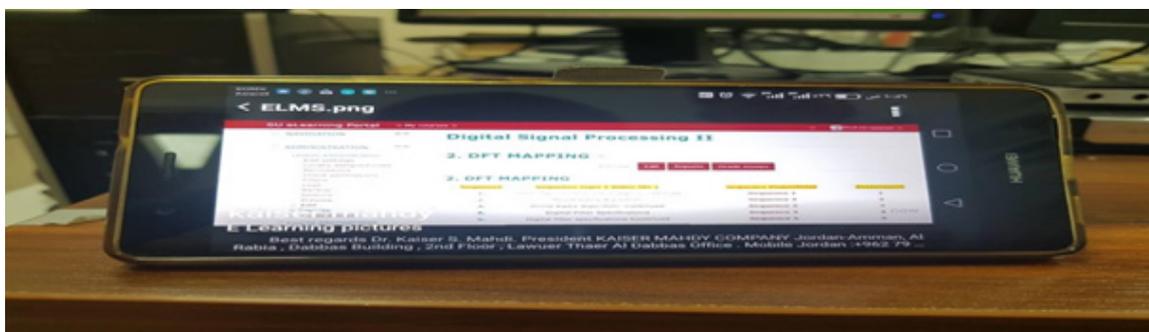

FIGURE 14. Design of the e-lecture and Quiz assessment in the Moodle platform on mobile screen (Qaysar Mahdi, 2017)
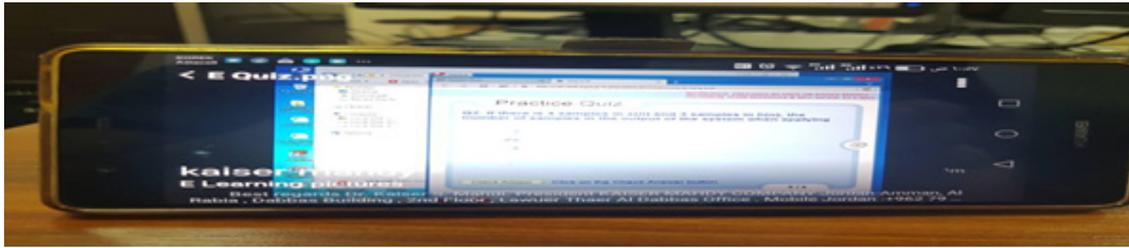
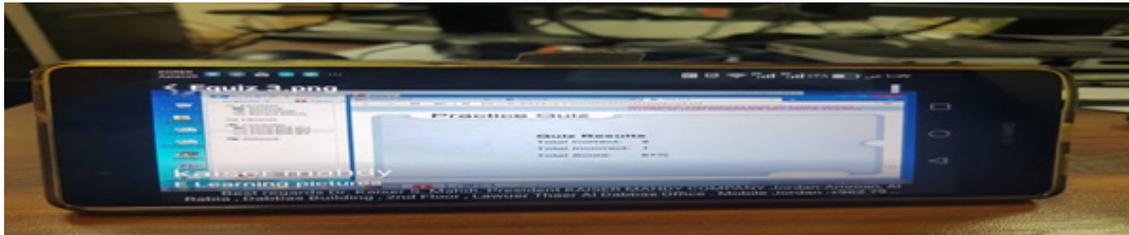**FIGURE 15. Multiple choice Quiz examination on mobile device screen**

FIGURE 16. Quiz result of e-lecture on mobile device screen (Qaysar Mahdi. 2017)

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5. CONCLUSION

Adoption of mobile technologies in teaching and learning in this paper is presented and gives clear understanding and useful applications of the mobile facilities in E Learning and M Learning (Qaysar Mahdi, 2017).

Updating and developing the organization and design of the ELMS by the Timesheet technology and the modern UNESCO pedagogical model reflect the importance to shape and modify our teaching and learning process.

The e-syllabus on the Moodle platform is the main target and task that teachers and students must apply and adopt the mobile technologies to enhance their skills and performance and it is recommended that their teaching way must be involved to improve this process.

The teachers and students are invited to learn about the new technologies of mobile devices and it is very important to put a program in each school to open workshops to let teachers and students to be very skilled and qualified in producing their discussions, video conferences, e-courses, assessments, publications, conferences and researches.

For future it is suggested the cloud computing technology for M Learning which will facilitate and improve the performance of ELMS.

5.   AVC E Learning centers of Salahaddin university Erbil Kurdistan and Phil

adelphia university in Jordan developed courses by this TIMESHEET TECHNOLOGY.