

Analytical study on online communication tools within elearning systems

Mohammad Abu-Qdais, Jehad Al-Sadi, Arab Open University, Jordan

ABSTRACT. Any eLearning Management System (e-LMS) contains electronic content and many tools that are needed for running an efficient electronic management system. Some of these are related to electronic communications. Arab Open University (AOU) is one of the first organizations that used e-learning systems in the Arabic region. We present in this paper an analytical study on the effectiveness of using electronic communications within e-learning environments. This analytical study will differentiate between the synchronous and asynchronous communications in e-learning. We will focus on the most used tools in e-LMS such as Messages, Forums, and Chat Session as a part of electronic communications within the learning management system. Experimental results on AOU experience of using different types on electronic communication are presented.

KEYWORDS: Arab Open University (AOU), Case study, e-Learning Management System, e-LMS, Electronic communications

Introduction

Providers of learning management systems (LMS) must develop efficient and effective learning tools to meet the society's needs. Learners expect on-demand, anytime/anywhere high-quality LMS with good support services. Electronic communication tools are considered one of the most important tools needed in any learning management system.

Electronic communication tools are needed to communicate the users of the LMS, e.g. learners, instructors, trainers, administrators, and technical and other support services staff involved in e-learning process. Throughout the use of these tools, the users play numerous roles to create a meaningful learning environment. Understanding the communication concept and its efficient tools in the learning process can help designers to create meaningful e-learning environments. The designers must pay good attention

to the main factors of efficient e-learning environment which are: institutional, pedagogical, technological, interface design, evaluation, management, resource support, and ethical (Khan, 2007).

The purpose of these factors is to help designers to think through every aspect of what they are doing during various steps of the e-learning design process including communication tools design.

In specific, we will investigate and discuss the issues of electronic communications within e-learning that might be of interest to e-learning designers to improve online communication in terms on using proper communication tools any time anywhere and obtain responses on time.

One may find that designing open, flexible, and distributed e-learning systems for globally diverse learners is challenging; however, as more and more institutions offer e-learning to learners worldwide, users will become more knowledgeable about the communication tools and how to use them within the e-learning environment. We should try our best to accommodate the needs of learners by asking as many critical questions as possible along the above factors of a good e-learning environment platform. The number and types of questions may vary based on each unique e-learning system. By exploring the more critical e-learning issues within these factors, we can create more meaningful and supportive learning environments for learners to communicate (Khan, 2007; Stracke, 2010).

Related work

When any educational institute decides to adopt an e-learning environment and have a learning management system, it needs to facilitate online communication among the users of the system. There are many learning management systems in the e-learning industry today which facilitates many communication tools. To select the proper LMS, there are many aspects to consider, we will focus in this paper, which is a continuation research work of Abu-Qudais and Al-Sadi (2012), on the effectiveness of the communication tools that LMS facilitates through a set of analytical experiments.

When we're talking about an online chatting, we mean a synchronous communication between the participants in multiple locations, speaking and interacting with one another at the same time, much

as they would in a physical place. Participants can raise their hands; icon; express their opinion in a number of different ways, text chatting is the most popular way. Video and audio are included in some products through Voice over IP or other communication protocols.

There is another type communication tools via the asynchronous communication. Messages, Forums, and Emails are the most popular tools offered by many LMSs.

Both Asynchronous and Synchronous e-learning approaches have their advantages and disadvantages. Synchronous e-learning needs a teacher. It should be used when there is a clear need for communication between teacher and learner to facilitate and answer questions. Clearly there is a time/cost benefit of Synchronous e-learning over classroom since institutes can save the time and cost of having people on one location. Synchronous training is also very effective when the material is rapidly changing since the teacher can make changes on the spot.

Asynchronous e-learning is different in many ways from synchronous e-learning. Asynchronous e-learning does not include a teacher. It needs to have content that is much more engaging and provide more depth of information since it must stand on its own. Asynchronous content can work well on a synchronous session but synchronous content does not work well in an Asynchronous context since it usually needs the teacher to bring the lecture to life. There are many benefits for creating Asynchronous e-learning. Asynchronous e-learning has content that resides on the web and doesn't need a teacher to lead (Khan, 2007).

There is a long discussion regarding the usefulness of asynchronous versus synchronous communication within an e-learning environment. Asynchronous communication, commonly facilitated by media such as e-mail and discussion forums, supports work relations among learners and with teachers, even when participants cannot be online at the same time. So, the main advantage is the flexibility of learning. Furthermore, many learners take online courses because of their asynchronous nature, merging education with work, family, and other commitments. Asynchronous communication makes it possible for learners to log on to an e-learning environment at anytime and anywhere and download documents or contact their teachers or classmates. Learners may spend more time refining their contributions, which are generally considered more fruitful

compared to synchronous communication (Hrastinski, 2007 and 2008).

Synchronous communication, commonly supported by media such as videoconferencing and chat, supports e-learners in the development of learning communities. Learners and teachers experience synchronous communication as more social and avoid disturbance by asking and answering questions in real time (Hrastinski, 2008).

Based on the educational pedagogies, there is and always will be a need for the face-to-face meetings. Online learning and communication should be viewed as an additional way to get information to participants anytime and anywhere. Usually teachers are there to meet learners in both physical and virtual meetings. We still believe that face-to-face meetings has its own benefits, physical contact and body language express many issues easily and more clearly but still have its constraints regarding time and place.

Electronic communications used at AOU

The aim of AOU is to attract large number of learners who cannot attend traditional universities because of work, age, financial reasons and other circumstances. The “open” terminology in this context means the freedom from many restrictions or constraints imposed by regular higher education institutions which include the time, space and content delivery methods (Al-Sadi, Abu Shawar, 2009).¹ AOU use Moodle nowadays as an e-learning platform. Moodle is an open-source learning management system (LMS) used by educational institutes, business, and even individual instructors to add web technology to their courses. A course management system is “often internet-based, software allowing instructors to manage materials distribution, assignments, communications and other aspects of instructions for their courses”.² The Moodle community has been critical in the success of the system. With so many global users, there is always someone who can answer a question or give advice. At the same time, the Moodle developers and users work together to ensure quality, add new modules and features, and suggest new ideas for development (Giannini-Gachago et al., 2005; Louca et al., 2004). Moodle also stacks up well against the feature sets of the major commercial systems, e.g., Blackboard

1. www.lmuaut.demon.co.uk/trc/edissues/ptgloss.htm.

2. <http://alt.uno.edu/glossary.html>

and WebCT (Cole, 2005). Moodle provides many learning tools and activities such as forums, chats, quizzes, surveys, gather and review assignments, and recording grades (Al-Sadi, Abu Shawar, 2009).

In addition to traditional communication media, AOU use mainly forums, messages, and chat sessions as electronic communication tools within Moodle. Learners can contact each other and also contact their teachers using one of these communications tools.

Forums

There are many specialized forums where participants can use forums to communicate; any post of information can be viewed by all participants. Participants can post text messages and also can attach any type of document in the forum including multimedia documents. There are many types of forums such as:

Tutor Group Forum: learners can communicate with each other and also with their teachers on the section level of any course. Figure 1 shows a sample a tutor group forum interface.

Course Forum: all learners registered in a certain course can participate in this forum regardless of the section they are registering in.

Teacher Forum: only teachers of a certain course can participate in this forum for coordination purposes.

News Forum: it is a specialized forum to post announcement and news of the department that is creating this forum.

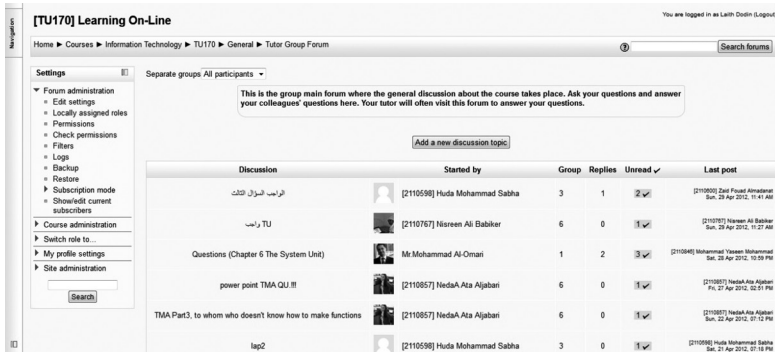


Figure 1. A sample of tutor groups forum

Messages

Any participant of any course can send messages to one or more participants. Unlike the forum, the message can only be seen by the participants that the message addresses them. Therefore, it is considered as private synchronous communication tool while the forum is considered as public synchronous communication tool. Figure 2 shows a sample the Messages interface.

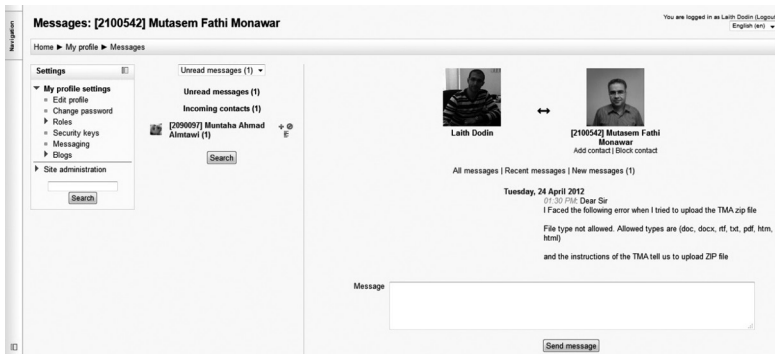
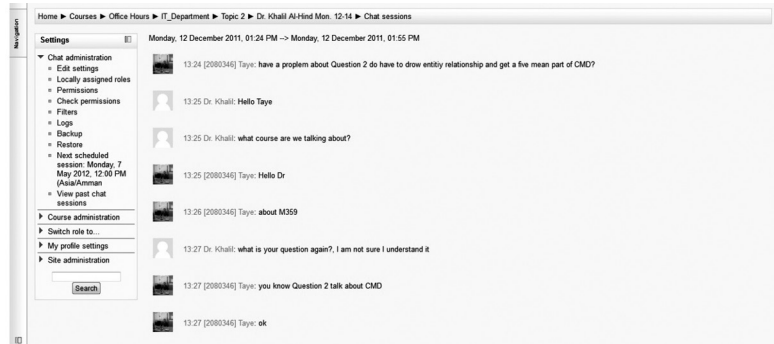


Figure 2. A sample the messages interface

Chat Sessions

All teachers are asked to have online office hours with their learners in additions to the face-to-face office hours. The online office hours are scheduled and conducted via chat sessions; it is one of the activity tools of Moodle. Figure 3 shows a sample the chat sessions interface.

Figure 3. A sample the chat sessions interface



Electronic communications can be used for learner advising purposes, social communications among learners, teachers' coordination, tutoring, and supporting services.

Experimental study

To measure the efficiency of electronic communications tools, an experiential study has been conducted on the participants of AOU LMS and their contribution on the online communication tools. There are three major colleges within the Arab Open University; Information Technology and computing (ITC), Business administration (BA), and Linguistics (Ling).

We have collected information about the user participations of the electronic communication tools for a period of one month in March 2012. Figure 4 shows the percentages of participations on chat sessions, forums, and messages of all users at AOU. It is worth to mention that the number of participations on forums reached 206 722, participations on messages reached 50 124, and participations on chat sessions reached 1 720. It is clear that learners have the asynchronous nature, there prefer to communicate via asynchronous communication tools rather than synchronous communication tools.

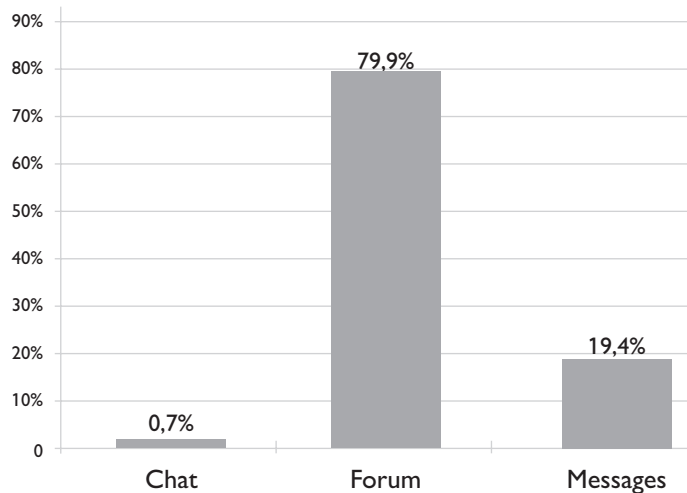


Figure 4. The percentages of participations on electronic communication tools at AOU

Figure 5 shows the percentages of communications via chat sessions for the three main colleges at AOU. It shows that learners of Linguistics major are the most learners who are using chat sessions while ITC learners are the least.

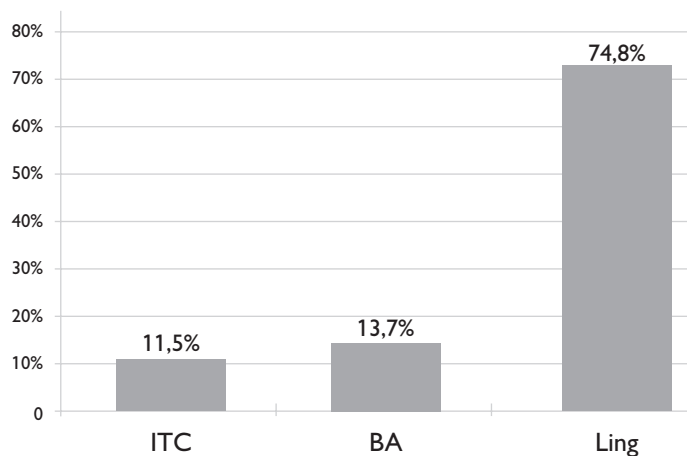


Figure 5. The percentages of participations on chat sessions

Figure 6 shows the percentages of communications via forums for the three main colleges at AOU. It shows that learners of ITC major are the most learners who are using forums while Linguistic learners are the least.

Figure 6. The percentages of participations on forums

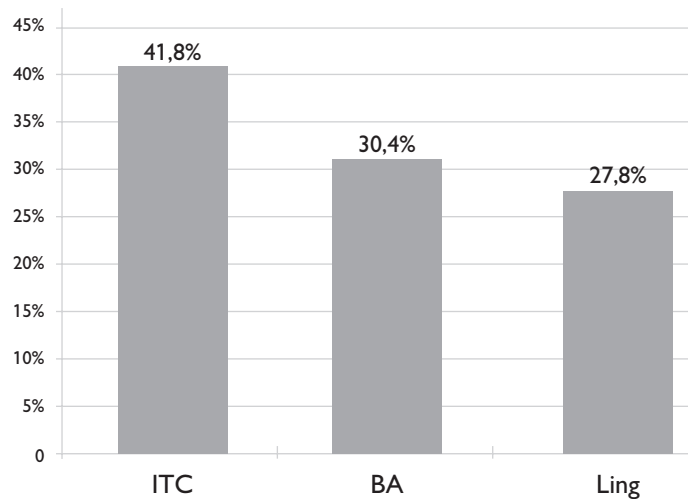


Figure 7. The percentages of participations on messages

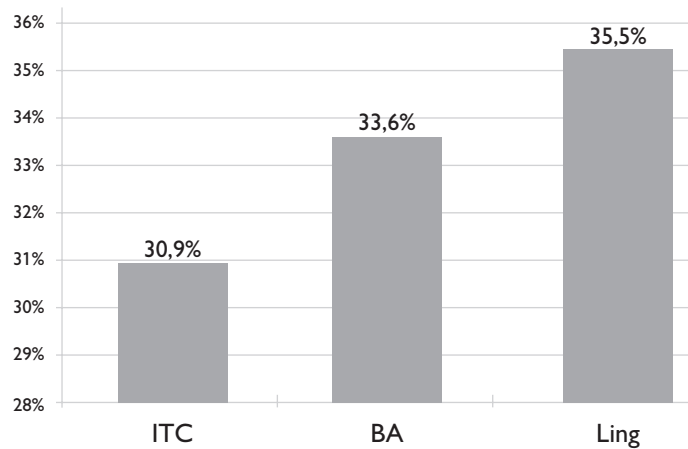


Figure 7 shows the percentages of communications via messages for the three main colleges at AOU. It shows that learners of the three majors almost have the same percentage of using messages as a communication tool.

Conclusion

In this paper we presented an analytical study on the effectiveness of electronic communications within e-learning systems of the learning process. We have focused on the most used types of online communications and the usability of each type. We discussed the importance of using messages, forums, and chat session as a part of electronic communications within the learning management system. A case study on the Arab Open University as the first organizations that adopted an e-learning methodology in the Arabic region is also presented. Results showed that most of learners have an asynchronous nature in using electronic communications. We may indicate also that the learners of scientific majors are more asynchronous, while linguistic majors are more synchronous.

References

Abu-Qudais Mohammad, Al-Sadi Jihad (2013), *Effectiveness of Electronic Communication Tools within E-Learning Environments*, "Journal of Information Systems Technology & Planning – JISTP", V. 6, n. 16

Al-Sadi Jihad, Abu Shawar Bayan (2009), *M-learning: the usage of WAP technology in e-learning*, "International Journal of Interactive Mobile Technologies (IJIM)", V. 3, n. 3, pp 10-16

Cole Jason (2005), *Using Moodle*, Sebastopol, CA, USA, O'Reilly

Giannini-Gachago Daniela, Lee M., Thurab-Nkhosi Dianne (2005), *Towards Development of Best Practice Guidelines for E-Learning Courses at the University of Botswana*. Proceeding Of Computers and Advanced Technology In Education, Oranjestad, Aruba

All URLs checked
November 2013

Hrastinski Stefan (2008), *A study of asynchronous and synchronous e-learning methods discovered that each supports different purposes*, "EDUCAUSE Quarterly", V. 31, n. 4

Hrastinski Stefan (2007), *The Potential of Synchronous Communication to Enhance Participation in Online Discussions*. Paper presented at the 28th International Conference on Information Systems, 9-12 December, Montreal, Canada, USA

Khan Badrul H. (Ed.) (2007), *Flexible learning in an information society*, Hershey, PA, Information Science Publishing

Louca Soulla, Constantinides Constantinos, Ioannou Adrian (2004), *Quality Assurance and Control Model for E-Learning*. Proceeding CATE - Computers and Advanced Technology in Education, pp. 428-472

Stracke Christian M. (2010), *Categories and Purposes of (e-Learning) Standards: The Need for Harmonization of Interoperability and Quality Development*. Position Paper for the JISC/CETIS Future of Interoperability Standards Meeting, Manchester, UK

Sintesi

L'Arab Open University (AOU) è uno dei primi atenei della regione araba ad aver offerto corsi in modalità telematica, per le tre facoltà in cui si articola l'ateneo: *Information Technology and computing, Business administration e Linguistica*. Per l'erogazione dei corsi l'ateneo ha scelto di utilizzare il sistema open access Moodle, facilmente adattabile alle diverse esigenze dei corsi e supportato da una forte community di utenti e sviluppatori. L'interesse della ricerca si è concentrato sull'utilizzo degli strumenti di comunicazione disponibili, sia in forma sincrona sia asincrona, e sulla loro utilità per le attività didattiche. Pur mantenendo una scelta di *blended learning*, l'ateneo ha rilevato che sia nella forma sincrona - in cui è necessaria la partecipazione del docente per animare la discussione - sia nella forma asincrona - che richiede maggiore attenzione nella realizzazione dei materiali di supporto ai forum ma non la partecipazione dei docenti - gli studenti hanno

partecipato attivamente alla comunicazione a distanza su Moodle. La maggioranza degli studenti ha preferito la modalità asincrona dei forum, soprattutto nell'ambito del college di ITC, mentre gli studenti di Linguistica hanno utilizzato in modo consistente anche le forme sincrone quali le Chat e la messaggistica istantanea.