eLearning and Distance Education at Arab Universities

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Abstract
This study aimed to identify the extent to which Arab universities are keep pace with modern technological developments in terms of the availability of e-Learning Management Systems and distance education, the extent of their use, and in which courses they are used. The author accessed the websites of 517 Arab universities and institutions on the Internet. The results showed that only 15% of Arab universities have e-learning management systems, including open universities, virtual universities, some universities of science and technology in Arab countries, and universities in the Gulf states, with the exception of religious universities. The number of e-courses offered is relatively small. Since the use of Learning Management Systems will lead to a quantitative and qualitative shift in education, and failure of Arab universities to use them will lead to their technological and scientific backwardness, the current study gave a number of recommendations for activating e-courses and distance education at Arab universities in a simplified, fast and inexpensive way.

1. The Introduction
The number of schools, institutions and teachers using e-courses is significantly increasing. For example, www.elearners.com contains about 193 online colleges and universities, more than 6,345 e-courses, and grants 515 academic degrees (diploma, bachelor's, master's, and doctorate). More than 3,300 colleges and universities, more than 35,000 professors, and 250,000 students, companies, and organizations worldwide use e-courses on the Blackboard e-learning management system. Since January 1998, about 1,741,190 students and teachers have used the ICA system (www.nicenet.org) to manage e-courses. The number of users per month is 86,186 and the number of courses used is 11,808.

The reason for the increasing number of teachers and students using computers and the Internet in the learning process is due to their positive effects. In a survey study conducted by Edwards and Fritz (1997) on university students to explore their opinions on three technology-based teaching methods, the students reported that e-learning was fun and interesting and achieved the desired educational goals. The students were able to learn the concepts and apply them better. They also reported that the learning outcomes from electronic educational materials were better than traditional isntructional materials. Studies by Davidson & Tomic (1994), Reis (1995), and Sivert & Egbert (1995) indicated that the use of the Internet, computer programs, and multimedia computers in education has met their teaching needs. The results of Teeter's (1997) study with an experimental group of students at the University of Arkansas who took a course on the Internet, read texts and lectures, participated in discussions, performed written assignments directly on the computer screen, took exams in the computer laboratory, and visited Internet sites related to the course on the computer screen, showed that students' motivation increased as they were exposed to many resources, and their ability to discuss and solve written assignments improved. In another survey conducted by Richards (1996) to determine the extent of the impact of the Internet on the teaching and learning processes - from the point of view of teachers, specialists in

instructional techniques, and students - the subjects reported that the Internet had positive effects on the teaching-learning process. The participants considered obtaining information from the Internet as the best activity. They also reported that the Internet was a tool for stimulating students' motivation, and that its use changed the way they learn and the way information is delivered to them. Richards pointed out that the positive effects of the Internet cannot be achieved unless teachers are adequately trained, if the school has specific goals, and if Internet activities have been well integrated into the curriculum.

E-courses have numerous advantages. They are open 24 hours a day, seven days a week and on holidays. There use is not restricted by time or place, as the students can use them any time they want, day or night, and anywhere in the world. They do not require classrooms, and it is not necessary for computers to be available at the university or school, as it can be used from home. Students can use an e-course several times and can constantly review the course material and lectures. The e-course increases the process of interaction and communication between the teacher and students. The students have a positive and active role in the e-course. They contribute to preparing the material of the e-course, express their opinion on it, and comment on what other students have presented. The online course provides students with the opportunity to connect to a vast amount of information (Al-Jarf, 2006a).

Moreover, e-learning programs that replace the traditional course are characterized by flexibility and provide opportunities for enrichment and review. The teacher can use multiple teaching methods, such as simulation, exploratory learning, experience-based learning, and individual therapy. If he uses well-designed exercises and tests, he will be able to diagnose the difficulties that prevent students from mastering a particular point and provide them with additional or alternative explanations and exercises until they master that point (Carliner, 1998). It facilitates the process of correcting tests and assignments for the teacher, and provides him/her with statistics on students' achievement and improvement as individuals and as a group. Parents can view the academic material of the e-course and the up-to-date results of their children (Al-Jarf, 2003).

On the other hand, using an e-course requires great financial resources. Some of the programs used to design e-courses are expensive. Preparing the contents of the e-course requires training, time, effort, and the ability to innovate on the part of the teacher. In order for teachers and students to be able to use it, they must receive some training and need ongoing technical support while using the course. In order for the students to continue using an e-course, they need constant motivation and encouragement from the teacher. The teacher must use different methods to engage the students. Students should be motivated to continue using the e-course, be able to take responsibility and be self-reliant, and be willing to communicate in writing. Lack of computers or access to the Internet may prevent all students from benefiting from it. The Internet may can down at any time and the connection might be slow.

With the political, social, economic, cultural and technological developments that have occurred in the world in the present era, information technology has become indispensable for the Arab world. It is the most important means of transferring Arab societies to advanced societies. Information systems are the basis on which this technology is based because they combine

computers, software, and communication networks, and contribute directly to developing a new Arab society that relies on electronic information services directly related to communication, production, and education.

Since Arab universities' use of e-learning will lead to a quantitative and qualitative shift in teaching, and not using it will lead to their technological and scientific backwardness, therefore the researcher felt the need to conduct a study to explore the status of e-learning and distance learning are Arab universities to determine the extent to which they abreast of the latest technological advancements in teaching, which has become one of the requirements and necessities of the times.

2. Study Questions

This study attempted to answer the following questions:

- Which Arab universities have e-learning systems and distance education programs?
- What percentage of Arab universities have e-learning management sytems students and distance education programs?
- Which e-learning management systems are being used by Arab universities?
- How many e-courses are offered and in which specialties?

3. Definition of terms

3.1 What is e-learning

E-learning is learning that takes place via the computer and any other sources on the computer that help in the teaching and learning process. In e-learning, the computer replaces the book and the teacher. In the electronic lesson, the computer displays the material on the screen based on the student's response or request. The computer asks the student for more information and provides the appropriate material based on his/her response. The material and the tests accompanying it may be simple - as in a traditional course - but in the form of an instructional software on the computer. The material can be text, graphics, still or animated images, audio, visuals, or all of these together. E-learning may consist of a course that includes lectures conducted via videoconferencing on specific dates, as is the case in a traditional lecture. It could be a web page with additional material, including videotapes of previous lessons, discussions outside of class via email, and electronic tests whose results are automatically recorded in the students' records.

Types of e-learning include computer-based training (not based on the Internet), training based on the intranet, extranet, or Internet, computer-based and technology-based instruction, in which training is conducted by means other than the traditional classroom, such as the computer, television, audio tapes, video tapes, and printed materials.

e-learning can be synchronous and asynchronous. In synchronous learning, all students registered in the course access the course website at the same time. Where they chat or discuss at the same time. As for asynchronous learning, students access the course website at any time they want, each according to his need and the appropriate time for him.

3.2 What is an e-course

An e-course includes any computer-based instructional activities and materials. There are several types of e-courses:

- Courses that replace the traditional classroom and courses that support the traditional classroom (used in conjunction with the traditional classroom).
- Accredited and non-accredited online e-courses.
- Open source e-learning management systems that can be downloaded onto the university or college server and can be used for free, such as Moodle, Nicenet, Claroline, ClassWeb, Manhattan Virtual Classroom, OLAT, and other sites that can be used for a fee such as WebCT, metacollege, eCollege, onlinelearning (Al-Jarf, 2001).

3.3 Learning management systems

Leaning management is the ability to design teaching strategies that achieve the student's learning goals. The emphasis here is on student learning, not teacher preparation. Learning management systems are software or technology based on the Internet that are used to plan, implement and evaluate a specific learning process. A learning management system usually provides the teacher with a way to create and deliver content, monitor student participation, and evaluate their performance. A learning management system can provide students with the ability to use interactive features such as discussion topics, video meetings, and discussion forums. Learning management systems include open source systems such as: ATutor, Claroline, Dokeos, Fle3, ILIAS, KEWL nextgen, LON-CAPA, Moodle, OLAT, and Sakai Project. It also includes commercial learning management systems such as Saba Software, Apex Learning, Blackboard, ANGEL Learning, Desire2Learn, SAP Enterprise Learning (Al-Jarf, 2006b; Al-Jarf, 2001a).

3.4 Instructional content management systems

There are systems that offer tools to deliver and manage synchronous and asynchronous teacher-led training. It provides tools for authoring, reusing, and repurposing course content. The term learning management systems is often used to include both learning management systems and learning content management systems. Now the use of the computer learning content information management system Clcims has become common.

3.5 The limits of the study

1. The study sample included only universities, colleges and institutions listed on the Webometrics website and the Association of Arab Universities.

2. The study sample included universities, colleges, and institutions that have a website.

3. This study was limited to identifying the extent to which Arab universities, colleges and institutions use e-learning management systems as shown on the website of the university, college or institute.

4. This study was limited to identifying the extent to which Arab universities, colleges, and institutions use e-learning management systems such as Blackboard, WebCT, and Moodle, and did not focus on other uses of computer software in instruction such as Powerpoint,

Word, Excel, statistical analysis programs, or instructional software on CDs, whether used at university or at home.

5. The researcher was unable to verify whether the e-courses offered on university websites are actually operational, for which semester they are offered, the number of students enrolled in them, and whether some professors teach more than one course, because access to the courses requires a password.

4. Literature Review

Results of a study by AlMusawi and Abdelraheem (2004) indicated that Sultan Qaboos University in Oman began using e-courses in 2001 AD, offering 8 e-courses with a total number of 981 students using them. In 2002, the number of courses offered increased to 40 courses used by 3,001 students. Al-Jarf, 2004; Al-Jarf, 1999) conducted a study to identify the extent to which faculty members in Saudi universities use e-learning. The results of the study showed that only three universities (23%) have a subscription to and have a number of e-courses, but this number is based on WebCT & Blackboard portals. E-learning is not proportional to the number of colleges and departments and the total number of faculty members in each university. That is, the current use of e-learning portals is not economically feasible. The results of the study showed that there were 4 categories of faculty members in terms of their mastery of e-learning and their attitudes towards using it. Most of the participants reported a number of obstacles: the inability to use e-courses, the lack of training courses, the high workload, the insufficient technological infrastructure in its current state for e-learning, and the lack of management support.

A study conducted by de Ferranti et al (2003) indicated that Latin American and Caribbean countries suffer from a severe deficiency in productivity, skills, and use of technology compared to other countries. The results of a questionnaire administered to 653 participants by Ward, Harrison and Massey (2001) in a number of organizations in the European Union showed that 80% of the respondents are users or providers of e-learning, and 60% are users and providers. For e-learning at the same time. Users spend 30% of their time on training associated with e-learning. The amount of use of e-learning in training varied from one specialty to another. The companies providing training reported that 30% of their income in 2001 was from e-learning which represented 23% of the income of companies providing infrastructure and equipment, 13% of the total expenses allocated to training devices purchased by users, and 14% of the total expenses on electronic scientific material (Ward, Harrison, and Massey, 2001). In the USA, the results of a questionnaire showed that all secondary schools in the Southern Regional Education Board (SREB) region use e-learning (Thomas, 2001). Sparrow (2002) found that most universities in Florida meet the distance education standards set by the Institute for Higher Education Policy (IHEP), with slight differences between universities in application methods. These standards also apply to professors through different practices that Follow her.

Regarding the factors that affect teachers' use of e-learning and the challenges they face, results of Al-Harbi's (2003) study on 237 faculty members and administrators at Imam Muhammad bin Saud Islamic University showed that: large workloads, and lack of technical and administrative support prevent the use of e-learning. Results of Bathe's (2001) study on 33 faculty, 6 administrators, and 48 students at a community college in the midwestern United States indicated

that personal interest plays an important role in building e-courses, in addition to the availability of sufficient technological and instructional support, and that professors receive financial compensation for Workloads and extra hours. The researcher found that only 15% of faculty members preferred using e-learning in addition to in-class instruction. Professors and administrators were concerned about the screening of students who would enroll in e-courses, the quality of e-courses, and the integrity of the tests. Wilson (2000) found that faculty members at the Kentucky Virtual University were intrinsically motivated to use technology to improve student learning, but they were unsure of the effectiveness of distance education, were not convinced of their personal participation in it, suffered from time pressure, and met most of the technology performance standards. For teachers who received training at the International Society for Technology in Education (ISTE), were not sufficiently prepared in some aspects of e-learning, did not receive compensation for their e-learning, and did not find sufficient support from the university for the technological infrastructure. Ricci (2002) found that 28 community colleges in Florida offer incentives to faculty members.

5. Research Methodology

5.1 Sample of Universities

The researcher obtained the names of Arab universities from the Spanish website Webometrics for classifying universities and from the website of the Association of Arab Universities. The research community consists of 513 public and private universities, independent colleges, and independent institutions in all Arab countries, as follows:

- **Eritrea:** University of Asmara.(1)

- **Jordan:** Arab Academy for Banking and Financial Sciences, The Hashemite University, Irbid National University, Al al-Bayt University, Al-Isra University, German Jordanian University, Princess Sumaya University for Technology, Petra University, Al-Balqa Applied University, Al-Hussein bin Talal University, Zarqa University, Al-Zaytoonah University , Arab Open University in Jordan, University of Applied Sciences, Yarmouk University, Jerash University, Amman Al-Ahliyya University, Amman Arab University for Postgraduate Studies, Philadelphia University, Mu'tah University, Amman French School, American Language Center, Institute of Banking Studies.(23)

- **UAE:** American Intercontinental University, Abu Dhabi University, Ajman University of Science and Technology, Al Ain University of Science and Technology, Al Ghurair University, Al Khawarizmi International College, Al Hosn University, American University in Dubai, American University of Sharjah, Birla Institute of Science and Technology in Dubai, British University in Dubai, Medical College for Girls in Dubai, College of Pharmacy in Dubai, Emirates Academy, Emirates Aviation College, Khalifa University of Science, Technology and Research, European University College in Dubai, Gulf Medical College, Higher Colleges of Technology, Institute of Management Technology in Dubai, College of Arab and Islamic Studies in Dubai, Islamic Azad University in Dubai , Al Ittihad University, Mahatma Gandhi University in Dubai, Manipal University in Dubai, Petroleum Institute in Abu Dhabi, Shaheed Zulfikar Ali Bhutto Institute of Science and Technology in Dubai, Sharjah College of Troy University, Saint Petersburg State University of Engineering and Economics in Dubai, United Arab Emirates University, University of Sharjah, University of Wollongong Dubai, Zayed University .(34)

- **Bahrain:** Al Ahlia University, AMA International University in Bahrain, Arab Open University in Bahrain, Arabian Gulf University, Birla Institute of Technology International Center, Gulf University, New York Institute of Technology, Royal College of Surgeons in Ireland, Bahrain Medical University, Kingdom University, University of Bahrain.(11)

- **Tunisia:** University of November 7, Tunisian University, Private University of Tunis, University of Zitouna, University of Kairouan, University of the Center, University of Information Technologies and Institutional Management, Virtual University of Tunis, International University of Tunis, University of Tunis Al-Manar, University of Jendouba, University of Sfax of the South, University of Tunis Sfax, University of Gabes, University of Gafsa, University of Manouba, University of Central Sousse, Faculty of Management and International Trade, Faculty of Medicine of Tunis, Higher College of Science and Technology, Higher College of Engineering and Technology, National College of Informatics, Higher School of Communications, National School of Engineering, Tunisian School of Technologies, Higher Institute of Technological Studies of Kairouan, Higher Institute of Technological Studies of Djerba, Higher Institute of Technological Studies of Brads, Higher Institute of Technological Studies of Sousse, Higher Institute of Technological Studies of Sfax, Higher Institute of Technological Studies of Ksar Hilal, Higher Institute of Technological Studies of Gafsa, Higher Institute of Technological Studies of Madia, Institute Higher School of Languages at the Private University of Tunisia, National Institute of Social Studies, Bourguiba Institute of Living Languages.(37)

- **Algeria:** Batna Mosque, University of May 8, 1945 Guelma, Abu Bakr Belkaid University in Tlemcen, Prince Abdelkader University of Islamic Sciences, University of Continuing Training, University of Algiers, Badji Mokhtar University in Annaba, Batna University, Bejaia University, Blida University, Ben Khaldoun University Currents, Central University of Tiaret, University of Jalali Al-Yabis, University of Jijel, University of Hassiba Ben Bouali, University of Skikda, University of Sidi Bel Abbes, University of Abdelhamid Ben Badis of Mostaganem, University of Ammar Theliji, University of Annaba, University of Farhat Abbas Setif, University of Kasdi Merbah Bouarkella, University Mohamed Boudiaf of Science and Technology in Oran, Mohamed Bougara University of Boumerdes, Mohamed Khedher University of Biskra, University of Mostaganem, University of M'sila, Mentouri University of Constantine, Mouloud Mammeri University of Tizi Ouzou, Houari Boumediene University of Science and Technology, Ouarcla University, Sunni University of Oran, University of Oran, National College For public works, the Algerian National College of Technology, the Higher College of Teachers of Arts and Humanities in Bouzareah, the Algerian Higher School of Business, the Higher School of Masters of Technical Education in Oran, the Higher School of Normals of Kobba, the Higher School of Professors of Arts and Humanities in Constantine, the University Center of Khenchela, the University Center of Sheikh Larbi Tebsi, the Algerian-Tunisian Institute, the Aviation Institute of the University of Blida, the Higher Institute of Management and Planning, the National Institute of Marine Sciences, the National Institute for Training in Information Technology, the National Institute of Agricultural Sciences (48).

- **Djibouti:** University of Djibouti (1).

- **Saudi Arabia:** Al-Jouf University, Al-Yamamah College, Al-Faisal University, Arab Open University, Batterjee Medical College, College of Business Administration, College of Nursing and Medical Sciences, College of Technology in Abha, College of Technology in Al-Kharj, College of Technology in Dammam, College of Technology in Jeddah, College of Technology in Riyadh, College of Information and Communications, Dar Al-Hekma College, Effat College, Ibn Sina National College of Medical Sciences, Institute of Public Administration, Imam Muhammad bin Saud Islamic University, Islamic University of Medina, Jazan University, Jubail Industrial College, King Abdulaziz University, King Abdullah University of Science and Technology, King Fahd Security College, King Fahd University of Petroleum and Minerals, King Faisal University, King Khalid University, King Khalid Military Academy, King Saud University.

- **Sudan:** Imam Mahdi University, Red Sea University, Al-Zaim Al-Azhari University, Al-Walanji University, Omdurman Islamic University, Dongola University, Sinnar University, Shendi University, West Kordofan University, Columbia University, Academy of Medical Sciences and Technology, Ahfad University, Al-Bayan College For Science and Technology, University of Gezira, Africa International University, University of Kordofan, National University of Rabat, Al-Nilin University, Nile Valley University, Sudan University of Science and Technology, University of Juba, University of Khartoum, University of Nyala (22).

- **Syria:** Al-Baath University, the European Arab University in Damascus, the French Institute of the Near East in Damascus, the Higher Institute of Applied Sciences, Al-Ittihad University, Al-Mamoun University of Science

and Technology, the Syrian International University, the Syrian Virtual University, Tishreen University, the University of Aleppo, the University of Qalamoun, and the University of the Valley (13).

- **Somalia:** Somali National University, Amoud University, Benadir University, University of East Africa, Nogal University, University of Mogadishu, Puntland State University, Somali Institute of Management and Administrative Development, Somali Center for Human Development, University of Burao, University of Hargesia, University of Kismayo (12) .

- **Iraq:** University of Babylon, University of Baghdad, University of Diyala, Hawler Medical University, University of Karbala, University of Koya, University of Kufa, University of Kurdistan, Al-Mamoun University College, Al-Mansour University College, University of Maysan, Saladin University, Dhi Qar University, University of Basra , University of Dahak, University of Iraq, Al-Nahrain University. Al-Mustansiriya University, Mosul University, University of Technology, Al-Qadisiyah University, Tikrit University, Anbar University, Islamic University (24).

- **Oman:** Caledonian College of Engineering - Dhofar University, German University of Technology in Oman, Mazon College of Administrative and Applied Sciences, Middle East College of Information Technology, Muscat College, Oman Medical College, Sohar University, Sultan Qaboos University, Surr University College, Waljat College of Applied Sciences, University of Nizwa (12).

- **Palestine:** Al-Quds Open University, Al-Quds University, An-Najah National University, Bethlehem University, Birzeit University, Hebron University, Islamic University of Gaza, Al-Aqsa University, Al-Azhar University in Gaza, Arab American University, American World University in Gaza, Arab University in Jerusalem, The French Evangelical and Archaeological School in Jerusalem, Hebron University, Palestine University of Technology, Felskin Technical College in Deir al-Balah, Wajdi Institute of Technology (17).

- **Qatar:** Qatar University, Weill Cornell Medical College in Qatar (2).

- **Kuwait:** American University of Kuwait, Arab Open University in Kuwait, Gulf University for Science and Technology, Kuwait University, Maastricht-Kuwait Business School, Australian College in Kuwait (6).

- **Lebanon:** Al-Islah University, American University of Beirut, American University of Science and Technology, Imam Al-Awza'i University, Balamand University, Jinan University, Holy Spirit University, Middle East University, International University, Arab Open University in Beirut, Saint Joseph University in Beirut, Lebanese University American University, Lebanese International University, Lebanese Canadian University, Lebanese University, Matn University, Al-Manar University, Antoine University, Beirut Arab University, Beirut Online University, Islamic University of Lebanon, University of Notre Dame, Haigazian University, Higher College of Lebanese Affairs, College of Near Eastern Theology The American Community College of Beirut, the Beirut University College of Business and Computers, the Ghassan Yammine College of Music, the International College of Beirut, the Jesus and Mary School in Rabweh, the Lebanese-French University Center for Technology, the Higher Center for Business Studies, and the Higher Institute for Vocational Education (33).

- **Libya:** Al-Arabi Medical University, Al-Fateh University, Bright Star University of Technology, Nasser University, Omar Al-Mukhtar University, Al-Tahadi University, Derna University, Al-Fateh University of Medical Sciences, Western Mountain University, Sebha University, Academy of Graduate Studies, Garyounis University, Higher Institute Industrial Technology in Negela, 7th of October University in Misurata, 7th of April University, Al-Marqab University (16).

- **Egypt:** International Academy of Media Sciences, Sadat Academy for Administrative Sciences, Arab Academy for Science and Technology in Alexandria, Arab Academy for Science, Technology and Maritime Transport, Arab Academy for Science and Technology, Thebis Integrated Academy of Sciences, 6th of October University, Nahda University, Assiut University, October University of Science And modern arts, Al-Azhar University, Alexandria University, German University in Cairo, American University in Cairo, Al-Ahram Canadian

University, British University in Egypt, Modern University of Science and Technology, Zagazig University, Arab Open University in Egypt, University of Modern Sciences and Arts, University of the Pharaohs in Alexandria, French-Egyptian University Fayoum University, Cairo University, Future University, Mansoura University, Menoufia University, Minya University, South Valley University, Banha University, South Valley University, Aswan Branch, Helwan University, Senghor University in Alexandria, Sohag University, Tanta University, Ain Shams University, University Suez Canal, Kafr El-Sheikh University, Misr International University, Misr University of Science and Technology, Banha Higher Institute of Technology, Higher Institute of Technology, Tenth of Ramadan Higher Technological Institute (43).

- **Morocco:** Ibn Zohr University in Agadir, Ibn Tofail University in Kenitra, Al Akhawayn University, Hassan I University, Hassan II University in Ain Chouk, the Great Private University of Casablanca, Cadi Ayyad University, Hassan II University in Mohammedia, Sidi Mohammed Ben Abdullah University, University Shuaib Doukkali, Abdelmalek Saadi University, Mohammed I University of Oujda, Mohammed V University of Agdal, Mohammed V University of Souissi, Moulay Ismail University, Beni Mellal College of Science and Technology, Settat College of Science and Technology, Faculty of Arts and Humanities in Agadir, Faculty of Arts and Humanities in Rabat, Faculty of Arts and Humanities of Sais-Fez, Faculty of Arts and Humanities of Dhahr El Mahraz, Faculty of Arts and Humanities of Ain Chouk, Graduate School of ICT Management in Casablanca, Graduate School of Economics and Commerce in Marrakech, Faculty of Medicine and Pharmacy of Casablanca, Faculty of Medicine and Pharmacy of Fez, Faculty of Medicine and Pharmacy, Faculty of Educational Sciences in Rabat, Faculty of Legal, Economic and Social Sciences in Casablanca, Faculty of Legal, Economic and Social Sciences in Salle, Faculty of Legal, Economic and Social Sciences in Settat, Faculty of Legal, Economic and Social Sciences in Tangier, Faculty of Legal, Economic and Social Sciences in Fez, Faculty of Legal, Economic and Social Sciences, Faculty of Sciences in Agadir, Faculty of Sciences in Rabat, Faculty of Sciences in Tetouan, Faculty of Sciences in Dahr El Mahraz, Faculty of Sciences in Meknes affiliated with Moulay Ismail University, Faculty of Sciences and Technology in Errachidia, Faculty of Sciences and Technology in Tangier, Faculty of Sciences and Technology in Fez, Faculty of Sciences and Technology in Marrakesh, Higher College of Management and Computer Sciences , the French College of Teaching Methods, the Moroccan College of Postgraduate Commercial Studies, the College of Industrial and Systems Engineering in Casablanca, the National Higher College of Electricity and Mechanics, the Higher National College of Informatics and System Analysis Bancias, the National College of Architecture in Rabat, the National College of Commerce and Administration in Agadir, the National College of Commerce and Administration Bastat, National College of Commerce and Administration, National College of Metallurgical Industry, National College of Applied Sciences of Agadir, National College of Applied Sciences of Tangier, National College of Applied Sciences of Marrakesh, Faculty of Dentistry, Faculty of Information Sciences, Faculty of Sciences Ain Chouk in Casablanca, Horticulture Complex of the Agadir Institute of Agriculture And veterinary school, School of Administration, Secondary School of Technology, Hassania School of Public Works, School of Science and Technology in Mohammedia, Higher School of Teachers of Technical Education of Mohammedia, Higher School of Teachers of Technical Education in Rabat, Higher School of Clothing and Textile Industry, Higher School of Optics and Eyeglasses, Higher School of Applied Administration in Marrakech, School Higher School of Technology in Agadir, Higher School of Technology in Casablanca, Higher School of Technology in Safi, Higher School of Technology in Fez, Mohammedia School of Engineers, Higher Normal School in Rabat, Higher Normal School in Marrakesh, Moroccan School of Engineering Sciences in Management Sciences and Industrial Computers, National Agricultural School of Meknes, School National School of Management in Morocco, Vinci Higher School of Informatics and Communications in Rabat, National School of Commerce and Management, National School of Commerce and Management in Settat, National School of Commerce and Management in Agadir, Institute of Business Administration and Technology in Rabat, European Institute of Electronics and Informatics, Institute for Training in Food Technology, University Institute for Scientific Research, The Hassan II Agricultural and Veterinary Institute, the Institute of African Studies, the International Institute of Higher Education in Morocco, the Higher Institute of Posts and Telecommunications, the Higher Institute of Trade and Project Management, the Higher Institute of Administrative Studies, the Higher Institute of Maritime Studies of Casablanca, the Higher Institute of Information and Communications, the Specialized Institute of Cinema, Audiovisuals, National Institute of Statistics and Applied Economics, National Institute of Administration and Cities, Institute for Arabization Studies and Research (99).

- **Mauritania:** University of Nouakchott (1).

- **Yemen:** University of Science and Technology, Taiz University, National University, University of Social Sciences and Applied Sciences, Dhamar University. Al-Ahqaf University, Al-Iman University, Hadramaut University of Science and Technology, Hodeidah University, Ibb University, Queen Arwa University, University of Sheba, Sanaa University, Sanaa Community College, University of Aden, Yemeni University of Science and Technology (16).

5.2 Data Analysis

To determine the extent to which Arab universities use e-learning and distance learning management systems, the researcher entered each university's website and searched for everything that would indicate the existence of e-courses, an e-university, or the name of one of the management systems used in e-learning such as Moodle, WebCT, Blackboard. I reviewed the e-courses offered, and in which specializations they are used.

6. Results

6.1 Universities that use e-learning:

The results of the content analysis of the websites of the 513 universities, colleges, and higher education institutions in Arab countries showed that only 75 universities, colleges, and institutions have e-courses, which means that 14.6% of Arab universities, colleges, and institutions have e-learning management systems. This percentage includes open universities such as the Arab Open University and its branches and Al-Quds Open University. The results also showed that about half of the universities in the Gulf countries and a third of the foreign universities in the Arab world, such as the University of Wollongong in Dubai, the American University in Cairo, the American University of Sharjah, the American University in Dubai, and others, have systems for managing e-courses (see Table 1).

Although the total number of universities, colleges and institutions of science and technology in the Arab world is 108 or 21%, only 14 of them have e-learning management systems (see Table 1), which is very small.

In addition, many Arab countries whose universities do not use e-courses at all, such as the universities of Libya, Eritrea, Djibouti, and Mauritania, which do not have any e-courses. The Islamic universities such as Al-Azhar University in Cairo and Gaza, Al-Iman University in Yemen, Al-Awza'i University in Lebanon, the Islamic University of Lebanon, and Christian religious universities such as Saint Joseph University and the University of the Holy Spirit in Lebanon and others do not have e-courses, even though the topics of religion courses are theoretical and appropriate for e-leaning and distance education (see Table 1).

Universities that use distance education

It was found that only 20 universities or 3.9% have distance education programs. The Arab world also has three virtual universities only: the Syrian Virtual University, the Tunisian Virtual University, and the Beirut Internet University. The rest of the twenty universities have distance education programs, some of which are being developed (see Table 1).

The e-learning management systems used

Analysis of Arab university websites showed that 18 universities use Moodle because it is free; 13 universities use the Blackboard, 9 universities use WebCT, 13 universities did not specify the e-learning management system they use, and 12 universities use e-learning management systems that they have developed. For example, the Arab Open University uses the ACES - Arab Campus E-learning System, the University of Wollongong in Dubai uses the Vista, eduStream, TurnItIn, Electronic Readings system, King Saud University uses the "Jusoor" system, and the University of Wollongong uses Taibah-Dokeos LMS, and 6 universities have developed projects and plans to use e-learning management systems (see Table 1).

6.2 Specializations in which e-courses are used

As for the number of specializations and subjects in which e-courses are used, they are shown in Table 1. Some universities use a username and password to log into the system and view the offered courses. However, the author was not able to view them. The following are examples of specializations in which e-courses are used in Arab universities:

- King Faisal University (621 courses): Architecture (112 courses), veterinarian and animal science (94 courses), agricultural and food science (94 courses), science (74 courses), education (60 courses), administrative science and planning (68 courses), community and applied studies (40 courses), medicine (25 courses), clinical Pharmacy (17 courses), applied Medical Sciences (16 courses), computer science & IT (10 courses), English (9 courses), and nursing (2 course).
- King Abdulaziz University: offers 27 e-courses covering first-level 101 courses in most disciplines such as mathematics, statistics, chemistry, computer programming, computer science, psychology, media, Arabic language, research methods, introduction to sociology, economics, public administration, accounting, English language, geography, and biology. It is noted that one e-course is allocated for each major in the humanities, applied and pure sciences.
- Assiut University in Egypt: Java, Principles of Poultry Production, Poultry Nutrition, Weeds and Herbicides, Sugar Crops, Crop Production, Online Course Preparation, Animal and Poultry Nutrition, Herbicide Resistance in Grass Weeds, Plant Tissue Culture, Poultry Production 1, Poultry Production 2, Poultry Production 3, Poultry Production 4, Poultry Production 5, Poultry Production 6, Poultry Production 7, Poultry Production 8, Physics of Metals and Alloys, Properties of Matter, Electricity and Magnetism, Molecular Spectra
- King Saud University: University requirements courses such as Islamic culture and English language.
- King Khalid University: Computer-aided instruction, computational and statistical software, communication and networks, measurement and evaluation, dental anatomy and principles of dental restoration, management information systems, methods of teaching forensic sciences, computers in education, Arabic editing, language skills, Islamic culture.

6.3 Percentage of universities that use e-courses

The percentage of e-courses offered is very small compared to the total number of colleges, their departments and specializations, the huge amount of courses offered, total number of faculty members who hold a Ph.D. degree at each university. It is clear that the percentage of faculty members who use e-courses is very small compared to the total number.

Table 1: Arab Universities that use eLearning and Distance Learning

countries	# of universities	E-Learning	Distance learning
Jordan	23	• Al-Isra University (not specified) • Arab Open University (ACE- Arab Campus E-learning System) • The Hashemite University (Blackboard, Lectora, Tagrity, Elluminate, Questionmark) • Jordan University of Science and Technology (Moodle, many courses) • Petra University (Blackboard, Moodle) • Al-Hussein bin Talal (Powerpoint presentations only)	
UAE	34	• Ajman University of Science and Technology (Moodle) • American University in Dubai (Blackboard) • American University of Sharjah (Blackboard & WebCT) • Dubai University College • Higher Colleges of Technology (not specified) • Petroleum Institute of Abu Dhabi (Blackboard & Moodle) • UAE University (Blackboard) • University of Sharjah (Blackboard) • University of Wollongong (WebCT Vista, eduStream, Turnitin)	
Bahrain	11	• National University (WebCT, Blackboard) • AMA International University (not specified) • Arabian Gulf University (WebCT) • University College of Bahrain (Blackboard) • University of Bahrain (not specified)	• Bahrain University • (Live video-conferencing session with George Washington University in the USA; Wimba Session
Tunisia	37	• Virtual University of Tunis (Tunisian Virtual University)	• Virtual University of Tunis (Videoconferencing, VSAT technology, 207 courses
Algeria	48	• Laghouat, Ammar Thlidji University • University of Bejaia • University of Continuing Training	• Abdelhamid Ben Badis University of Mostaganem (the IDEA project is under development under the supervision of the Mons Hainaut

			University and the Louis Pasteur University of Strasbourg. • Laghouat, Ammar Thlidji University • University of Bejaia • University of Continuing Training
Saudi Arabia	42	• Prince Muhammad University (Blackboard, WebCT) • Arab Open University (ACES - Arab Campus E-learning System) • King Saud University (Jusoor) • King Abdulaziz University (ADDI system • King Fahd University (WebCT) • King Faisal University (WebCT) • Taibah University (Taibah-Dokeos LMS) • College of Business Administration (WebCT) • King Khalid University (not specified) • Prince Sultan University (not specified) • Technical College in Abha (not specified) • Jeddah Technical College (not specified) • College of Medicine, Qassim University (not specified) • Al Yamamah College (not specified)	• Jedda College of Technology • King Khalid University (under construction)
Sudan	22	• University of Juba (Moodle, 4 courses) • Sudan University (Moodle, 69 courses) • Sudan University of Science and Technology (not specified)	• Sudan University of Science and Technology • Juba University
Syria	13	• Al-Baath University (not specified) • Syrian Virtual University (not specified)	Syrian Virtual University
Somalia	12		Pontland University
Iraq	24	• Al-Mansour University College Moodle, 2 courses	
Oman	12	• Sultan Qaboos University (Blackboard) • University of Nizwa (EduWave)	
Palestine	17	• Al-Quds Open University (in-house) •	Al-Quds Open University
Qatar	2	• Qatar University (Blackboard)	
Kuwait	6	• Arab Open University (ACES - Arab Campus E-learning System)	

		• Gulf University for Science and Technology (the website did not open) • Kuwait University	
Lebanon	33	• Arab Open University (ACES - Arab Campus E-learning System) • Beirut University College of Computer and Commerce (under development) • University of Notre Dame (Blackboard) • Beirut Online University	• University College of Computer and Commerce in Beirut • Beirut Online University
Egypt	43	• Ain Shams University (Moodle, Blackboard, WebCT) • American University in Cairo (Moodle, Blackboard WebCT) • Arab Open University (ACES - Arab Campus E-learning System) • Assiut University (not specified) 22 courses. • Benha University (Moodle) • British University (Moodle) • Fayoum University (under construction) • Helwan University (not specified) • Mansoura University (Moodle)	• Assiut University (13 courses)
Morocco	99	• Faculty of Science at Sidi Mohammed Ben Abdullah University (Moodle • Faculty of Science and Technology, Settat (Moodle, 25 courses) • College of Science and Technology in Qaliz (Moodle) • Abdelmalek Saadi University (Moodle 46 courses) • Hassan II University (Moodle) • Sidi Mohammed Ben Abdullah University (under development)	• School of Science and Informatics (Forcier Project) College of Science and Technology in Glaze
Yemen	16	• Yemen University of Science and Technology (not specified) • University of Sheba (not specified)	• Yemeni University of Science and Technology • University of Sheba

7. Discussion

The results of this study showed that 85% of Arab universities do not use e-learning, and even universities that have e-learning management systems such as WebCT and Blackboard are not used and exploited in the required manner in proportion to the money spent on them. The number of courses offered in the various specializations and the number of professors using them are small compared to the total number of courses offered in the various colleges, departments, and areas of specializations and the total number of faculty members in each university.

The results of this study are consistent with the results of de Ferranti et al.'s (2003) study, which revealed that Latin American countries suffer from a severe deficiency in productivity, skills, and use of technology compared to other developed countries.

However, the results of this study differ from the status quo of e-learning in developed countries such as the European Union and the United States (see the studies of Sparrow (2002), Ward, Harrison, and Massey, 2001), or the use of e-learning at Sultan Qaboos University.

The insufficient use of e-learning management systems by Arab universities can be attributed to the lack of a future vision and the lack of the necessary infrastructure and budget, administrative support and training. In a study conducted by Al-Jarf (2007) on the obstacles that prevent the integration of technology in universities, there are several obstacles such as: lack of motivation among faculty members, lack of their acquisition of skills in using e-courses, lack of training on integrating technology into courses, lack of management support and insufficient infrastructure and financial resources needed due to the lack of use of e-courses (Al-Jarf, 2007). Al-Harbi (2003) found that the main factors in faculty members' use of technology are the heavy workloads and the lack of sufficient administrative and technical support.

The results of some foreign studies showed a number of factors that hinder the integration of technology into instruction, such as the lack of financial compensation for professors for developing the content of e-courses, the presence of little pressure to develop e-courses, and the negative view of professors towards the use of e-courses (Bathe, 2001). In another study, professors were not sure of the effectiveness of distance education, were not convinced of their use of distance education, suffered from a lack of time, and did not receive sufficient financial compensation for activities related to e-learning. They were not rewarded for their use of educational technology and did not have an adequate infrastructure to support them (Wilson, 2000). Pankowski (2003) reported that most faculty members do not receive adequate training in e-learning, 23% of the sample did not receive any training before starting e-learning, and only 20% received training on active learning or supporting students' collaborative e-learning before starting e-learning.

8. Recommendations

To encourage universities, institutions, colleges, and professors to use e-learning management systems, the study recommends the following:

- The Arab Organization for Education, Culture and Science, or the Association of Arab Universities, adopts holding a conference for Arab ministers of education and university directors in the Arab world to develop a joint plan for disseminating and activating e-courses in Arab universities (Al-Jarf, 2007; Al-Jarf, 2001b).

- The first step begins by downloading the open source e-learning management systems on university servers, for free, and using them for free to create any number of e-courses for any number of students and professors in Arabic, English, and French, such as Moodle, Sakai, Claroline, Atutor Ganesha, Olat, Manhattan Virtual. Classroom, Open Learning Management System. Since the open source Moodle system for managing e-courses is Arabized, universities can upload it to their servers so that students and professors can connect to it via

the Internet. After the network specialist uploads Moodle to the university server, he/she can give every professors who want to use Moodle an account, and then create e-courses for them (Al-Jarf, 2006b).

- Due to the lack of computers and Internet connection in some universities, students and professors can initially use e-courses from home if they have an Internet connection. After that, the Internet will be connected to all universities within a period of time determined by the organization or the Association of Arab Universities, so that professors and students can bring their laptops to the university to access e-courses. In the third stage, a computer laboratory could be established in each college.

- The widespread use of Moodle in Arab universities could enable university professors within one country and between different countries who teach the same course with their students in a single e-course, so that the students of each department can be placed in a group. They can participate in instructional resources and professional development from home. Professors can share tasks in the e-course, so that each of them is responsible for some tasks. As professors become more skilled and experienced in using the Moodle e-course, any professors who wish can have their own e-course.

- To train professors on the use of e-courses, it is necessary to prepare a user guide for e-courses in both paper and electronic versions. The guide should define the training objectives, its content, the e-course tools and how to use them, how to prepare for e-teaching, the components of the e-lesson, introducing the professors to the educational and social aspects of the e-course, evaluating the progress of the e-course, providing technical support to students, time management, and the roles of the professor in the e-course. Training can be done face-to-face or electronically using the Moodle NF system (Al-Jarf, 2002).

- Preparing electronic instructional content for various courses takes place in several stages: (a) Professors search for websites, drawings, videos, and recordings related to the topics of the course taught in the classroom; (b) establishing a center for designing electronic curricula to support different types of courses in different countries, staffed by a team of specialists, which prepares multimedia electronic curricula in different specializations that are available on the Internet, and different universities can share curricula and resources (Al-Jarf, 2001b).

- Providing technical support and maintaining learning management systems, the network, and devices on a permanent basis while professors use e-courses.

- Virtual universities, universities of science and technology, and the Arab Open University adopt accredited distance education programs in many specializations, in which teaching is available to professors from all Arab universities, and registration in which is available to students from all over the Arab world.

9. Conclusion

E-learning is a new way of instruction imposed by the tremendous technological developments that occurred in the late twentieth century and the beginning of the twenty-first century. Some

Arab universities have begun to use e-learning and distance learning courses, and others are still seeking to integrate technology into the teaching and learning process, but these efforts are still in their infancy as 85% of universities, colleges and institution in Arab countries still do not use course management systems. Electronic materials available for free on the Internet, such as Moodle.

In order for the rest of the universities to catch up with e-learning and distance education, a ministerial decision must be taken at the level of the ministries of higher education in Arab countries to begin using e-courses in universities, colleges, and higher education institutions. It is necessary for officials in universities, colleges, and higher education institutions to be aware of the requirements for using e-courses and the challenges that accompany them, and to provide the required financial and technical support, so that students learn in the best possible instructional environment.

Universities should have a vision and plan to integrate technology into instruction, and universities should establish centers to develop the content of e-courses, and set standards that cover all instructional and technological aspects, such as course objectives and content, professors' support for students, professors' qualifications, professors' evaluation, evaluation of methods of delivering courses, and others. Professors should be trained to use e-courses, whether they are offered entirely online or as supporting courses for in-class instruction. The enrollment of faculty members in training courses on the use of e-courses should be a basic requirement, and this should be included in the evaluation of job performance and promotion requirements. Professors can be trained to use e-courses on vacation days.

Universities can gradually use e-courses, such that they begin to use them in support of the traditional courses taught in the classroom, before offering the academic material completely electronically (distance education). Faculty members, in different universities, who teach the same courses for the same levels can participate with their students in one e-course, so that each professor is involved in part of the e-learning activities.

To prepare a new generation of professors capable of dealing with modern technological developments in teaching, graduate students and students from colleges of education can be trained to use e-courses and make the skill of using computer and e-learning part of their graduation requirements.

Universities can obtain additional financial support to develop the technological infrastructure necessary for e-learning through partnerships between them and computer companies in the community.

Arab computer companies can play a role in Arabizing the software, tools and commands of e-learning management systems necessary to enable professors to use learning management systems with Arabic interfaces in designing the content of courses taught in the Arabic language.

References

Adams, Neil D. (2003). *Teaching Introductory Physics Online.* ERIC ED478781.

Al-Jarf, R. (2007). *eIntegration Challenges for Rectors & Deans in Higher education institutions in Saudi Arabia.* IASTED Conference Proceedings. Acta Press. Google Scholar

Al-Jarf, R. (2006a). The effects of elearning on teaching English as a foreign language to Saudi college students. *Mission of Education and Psychology Journal, 26,* 215-242. Saudi Association for Education and Psychology. King Saudi University. Google Scholar

Al-Jarf, R. (2006b). *Are WebCT, Moodle and Nicenet equally effective in EFL instruction*? 4th Asia CALL Conference. Geongju, Korea, November 10-12, 2006. Google Scholar

Al-Jarf, R. (2004). *Use of online instruction by faculty members at Saudi universities: Current status and future perspectives.* Proceedings of the Symposium on Faculty Development at Saudi Higher Education Institutions. College of Education, KSU, Riyadh, Saudi Arabia. Google Scholar

Al-Jarf, R. (2003). *Does technology make a difference in learning*? 9th TESOL Arabia Conference titled "English Language Teaching in the IT Age", Dubai, UAE. March 12-14. https://www.researchgate.net/profile/R.-Al-Jarf/publication/355209806. Google Scholar

Al-Jarf, R. (2002). *A training program for developing college female faculty computer skills and utilization in language teaching, translation and research based on their instructional and occupational needs.* Proceedings of the University Faculty Development Symposium. Center for Research. Center for University Students. King Saud University. Pp. 85-125. Google Scholar

Al-Jarf, R. (2001a). *Online courses*. Proceedings of the 13th Annual Conference of the Egyptian Association for Curriculum and Instruction, 195-210. Google Scholar

Al-Jarf, R. (2001b). *Requirements of the transition from traditional learning to e-learning.* Proceedings of the 13th Annual Conference of the Egyptian Association for Curriculum and Instruction, 157-170. Google Scholar

Al-Jarf, R. (1999). *University instructors and technology*, University Faculty Development Symposium. Center for Research. Center for University Women Students. KSU, Riyadh, Saudi Arabia. November 2-4. Google Scholar

Al-Musawi, Ali Sharaf and Abdelraheem, Ahmed Yousif (2004). E-learning at Sultan Qaboos University: status and future. *British Journal of Educational Technology, 35, 3,* 363-367.

Bathe, J. (2001). *Love It, Hate It, or Don't Care: Views on Online Learning*. ERIC ED463805.

Beatty, Esther Lynn (2003). *The effects of online staff development training on teacher attitude and technology integration*. Ph.D. Dissertation. University Of Central Florida.

Davidson, C and Tomic, A. (1994). Removing computer phobia from the writing classroom. *ELT Journal, 48, 3*, 205-214.

de Ferranti, D., Perry, G., Indermit G., Guasch, J., Maloney, W., Sanchez-Paramo, C. & Schady, N. (2003). *Closing the gap in education and technology: Latin American and Caribbean Studies.* Washington, D.C.: World Bank.

Edwards, C. and Fritz, J. (1997). *Evaluation of three online delivery approaches*. ERIC ED430516.

Pankowski, M. (2003). *How do undergraduate mathematics faculty learn to teach Online*. Ph.D Dissertation. Duquesne University.

Reis, L. (1995). Putting the computer in its proper place-inside the classroom. *English Teaching Forum, 33, 4,* 28-29.

Ricci, G. (2002). *System infrastructure needs for Web course delivery: A survey of online courses in Florida community colleges*. Ph.D. Dissertation. School University Of Central Florida.

Richards, F. (1996). *The impact of the internet on teaching and learning in education as perceived by teachers, library media specialists, and students*. ERIC ED410943.

Sivert, S. and Egbert, J. (1995). Using a language learning environment framework to build a computer-enhanced classroom. *College ESL 5, 2,* 53-66.

Sparrow, J. & Vanderhorst, L. (2002). *Online education at nine state universities in Florida.* Ph.D. Dissertation. University Of Central Florida.

Teeter, T. (1997). *Teaching on the internet. Meeting the challenge of electronic learning.* ERIC ED418957.

Thomas, W. (2001). *Electronic Delivery of High School Courses: Status, Trends and Issues.* ERIC ED459689.

Ward, T., Harrison, J. & Jane Massey, J. (2001). *E-Learning and Training in Europe: A Survey into the Use of e-Learning in Training and Professional Development in the European Union*. CEDEFOP Reference Series. ERIC ED464252

Willis, J. (2001). *Moving beyond the training environment to a vision of technology integration in the classroom curriculum: A case study*. Ph.D. Dissertation. Texas A & M University.

Wilson, C. (2000). *Faculty issues and attitudes about distance learning: A case study of the Kentucky Virtual University*. Ph.D. Dissertation. University of Louisville, USA.