

**INTERNATIONAL
JOURNAL
OF
INSTRUCTIONAL
TECHNOLOGY
AND
DISTANCE LEARNING**

**October 2014
Volume 11 Number 10**

Editorial Board

Donald G. Perrin Ph.D.
Executive Editor

Elizabeth Perrin Ph.D.
Editor-in-Chief

Brent Muirhead Ph.D.
Senior Editor

Muhammad Betz, Ph.D.
Editor

ISSN 1550-6908

PUBLISHER'S DECLARATION

Research and innovation in teaching and learning are prime topics for the *Journal of Instructional Technology and Distance Learning* (ISSN 1550-6908). The Journal was initiated in January 2004 to facilitate communication and collaboration among researchers, innovators, practitioners, and administrators of education and training involving innovative technologies and/or distance learning.

The Journal is monthly, refereed, and global. Intellectual property rights are retained by the author(s) and a Creative Commons Copyright permits replication of articles and eBooks for education related purposes. Publication is managed by DonEl Learning Inc. supported by a host of volunteer editors, referees and production staff that cross national boundaries.

IJITDL is committed to publish significant writings of high academic stature for worldwide distribution to stakeholders in distance learning and technology.

In its first decade, the Journal published more than 600 articles; 7,500 pages of research and theory by over 1,000 authors. It logged over ten million page views and more than a million downloads of Acrobat files of monthly journals and eBooks. Many authors benefited from refereed publication for retention, promotion, tenure, and advancement in their profession

Donald G. Perrin, Executive Editor
Elizabeth Perrin, Editor in Chief
Brent Muirhead, Senior Editor
Muhammad Betz, Editor

International Journal of **Instructional Technology & Distance Learning**

Vol. 11. No. 10.

ISSN 1550-6908

Table of Contents – October 2014

	Page
<u>Editorial: Transformation of education</u>	1
Donald G. Perrin	
<u>Faculty members' perceptions of e-learning at the University of Jordan</u>	3
Muhannad Al-Shboul	
<u>Students' behavioral intention toward the adoption of mobile learning in higher education</u>	45
Joongkak Kook	
<u>Real-time engagement in a learning environment</u>	55
Kathleen Young, Marty Martin and Tiffany Yates	
<u>e-Teaching and learning of professional business communication in Nigerian universities</u>	65
Franklin Ohiole Ohiwerei and Victor Igbenedion	

Editorial

Transformation of Education

Donald G. Perrin

Universities have perpetuated the lecture system for hundreds of years. Its weaknesses are well known to students. Communication is primarily one-way, from lecturer to student, a data dump. Lecture halls may have bad acoustics. It is difficult to read copious notes on chalkboards. Textbooks are often obsolete or dull. There is insufficient time to ask questions or discuss. Tests may not match course goals or content. Office visits are difficult to schedule.

The curriculum itself is suspect. By dividing subject matter into categories, whole areas of knowledge are missed and important relationships are lost or invisible. This has been known for almost a century:

Scientists were already discovering that the old, classical categories' of knowledge, were a hindrance. Physicists were forced into chemistry and back through mathematics to physics.
Lincoln Steffens (1931)

The explosion of knowledge made selection of content more difficult. Anderson's (1965) concept of *core competencies* ensured a resilient foundation with increasing opportunity for diversification. But ultimately it was the computer and internet that made information manageable and accessible.

Mager (1962) proposed goals and objectives as a blueprint for curriculum. Objectives describe, in observable and measurable terms, what the students should be able to do at the end of a learning period that they could not do before. The criterion should specify at what level and under what conditions performance is measured.

The science of learning was transformed by the Bloom Taxonomies, which stipulate cognitive, affective, and psychomotor domains, each with several levels of learning. Schools and institutions of higher learning continue to emphasize lower levels of the cognitive domain – knowledge, conceptualization, and application. This does not meet the needs of modern business and industry.

A growing segment of the population is becoming unemployable because of automation and off-shoring for lower paid jobs. Better jobs require more than basic knowledge and skills – they demand ability to analyze, solve problems, manage and innovate. Google and the Internet have made knowledge so accessible that education needs to be redefine itself for needs of the information age. This requires emphasis on information and communication technologies and higher levels of learning.

Such transformation entails retraining and upgrading the skills of literally millions of teachers. This could take a generation to complete. A better solution is to use technology – information and communication technologies including computers and the internet – to support the learner with customized interactive multimedia experiences that meet individual needs. Teachers can help to design and produce these media and facilitate their use. Learning management systems enable students to play a greater role in management of their own learning.

Learning technologies and distance learning are more scalable than traditional teaching methods. The materials of instruction can be continually improved using data from their daily use. Modification of digital media is fast and inexpensive. Networked computers allow all users to have instant access to the latest version. Many cost and time-binding constraints are solved by use of technology. It is important for administrators to use these tools to improve the quality of learning, not to cut cost.

Anderson, Vernon E. Principles and procedure of curriculum improvement. (2nd Edition, 1965) Ronald Press

Autobiography of Lincoln Steffens (1931) Harcourt Brace.

Mager, Robert F. (1962). Preparing Instructional Objectives. Fearon Publishers.

[Return to Table of Contents](#)

[Return to Table of Contents](#)

Editor's Note: This is a carefully planned and detailed study of one university to provide planning and design data to ensure success in a systemwide implementation of distance learning technologies.

Faculty members' perceptions of e-learning at the University of Jordan

Muhannad Al-Shboul
Jordan

Abstract

Several conventional universities in Jordan try to combine e-Learning systems into their classroom-based learning environment, and encourage their faculty members to use a blended mode of instruction. In order to facilitate the adoption of blended e-Learning, a term increasingly used to describe the way e-Learning is being combined with traditional classroom methods, it has become necessary to support faculty members based on their perceptions and needs, because technology use is a faculty member's individual choice in many higher education institutions. Therefore, this study investigated how faculty members at The University of Jordan perceive the blended instructional mode and what supports they need to use e-Learning systems. The findings of the study revealed that although there are differences in the perceptions on blended e-Learning among faculty members, most faculty members have recognized that integrating e-Learning tools in their classrooms would enhance the teaching and learning process in many ways. However, faculty members noted that there are obstacles and barriers to overcome in order to have a successful integration of e-Learning into the educational system. Several strategies to introduce and diffuse the blended e-Learning system were suggested by the faculty members. It is envisaged that the results of this study will help university administrators to establish policies and strategies that will facilitate faculty members' use of blended e-Learning.

Keywords: e-Learning, perception, attitude, blended learning, educational technology, higher education ICT, Jordan.

Introduction

The increased involvement of technology in all aspects of our lives places educational institutions under pressure to include these aspects at the heart of their learning. Nowadays, online learning environments have appeared in a variety of forms and applications in higher education. In some cases, entire courses are delivered exclusively online to the learners in remote locations. Supplementary materials may also be mailed out including introductory notes containing information to access the class Website. In other cases, lecturers may use a class Website to supplement to their face-to-face delivered classes. Building on the capabilities of the Internet, many higher educational institutions have moved quickly to make a good use of this new technology for educational and instructional purposes (Albalawi & Badawi, 2008).

In practice, e-Learning has the potential to offer many advantages to students and learners such as consistency, accessibility, adaptability, affordability, flexibility, and controllability over their learning experience. Moreover, e-Learning virtually eliminates time and distance, which represent two substantial barriers to learning (Borstorff & Lowe, 2008).

E-Learning is playing a significant role in education to improve students' skills and teach them new ways to manage their knowledge and information. Many universities and institutions of higher education have recognized the value of the Internet in changing the way people learn. However, few academic institutions have been able to embrace e-Learning in a way that enables widespread innovative uses of educational technology throughout the institution. Thus, there is a need to spread the culture of using e-Learning technology to enhance the quality of learning (Al-Shboul, 2013).

The implementation of e-Learning systems in higher education has enabled a dramatic change in teaching and learning practices. The success of e-Learning adoption across an organization depends on several factors, for example, the availability of technology, how instructors are supported in its use, and the integration of technology within the faculty members' teaching experience (Al-Adwan & Smedley, 2012).

e-Learning enables instructors to model and present many different kinds of information in dynamic ways. It helps students learn more rapidly and effectively by *doing* rather than just reading, listening or observing. e-Learning is an important tool for delivery, interaction, and facilitation of teaching and learning processes (Jamlan, 2004). There is no doubt that e-Learning has the potential to play a major role in the continued development of higher education teaching and learning.

The goal of e-Learning is to embed and integrate technology to create 21st century learning environments where traditional assessment criteria and expectations are exceeded. Teaching and learning with technology is essential for twenty-first century curriculums; the technology must be mobile when needed, ubiquitous at all times and functional to support all educational objectives. University administrations should focus on what is needed to engage students and enhance learning experiences, not just on what hardware, software and courseware is available. Students should be encouraged to use mobile and other devices as well as online resources in a supportive environment that encourages responsible and reliable digital citizenship. All faculty members should be encouraged and supported in their efforts to embed emerging technologies with confidence. To be able to do so, essential efforts need to be established and supported to achieve such goals (Al-Shboul, 2011).

The University of Jordan (UJ) is the oldest public university in Jordan, founded in 1962. It was using Blackboard as learning management system to provide services for students and academics; i.e. facilitate accessing the required material from anywhere and the communication between the students. Then the university turned to open source software and started using Moodle, as the main learning management system from the academic year 2012-2013. The provided services still in the beginning stages, it includes the following activities: uploading the course description, assignments, course news for academics while the student can check the announcement, download the assignment, solve the assignment and upload it back to the teacher (Majdalawi, Almarabeh, & Mohammad, 2014).

Like many universities, the UJ adopts e-Learning as one of its academic priorities. For this reason, the study was concerned with investigating the faculty members' perceptions of the e-Learning. The administration of the UJ believes that e-Learning will play a vital and important role in equipping students with skills they need to succeed in the 21st-century digital economy. Faculty members at the UJ are being encouraged to become involved in e-Learning activities. Hence, the purpose of this research paper was to assess the level of e-Learning integration at the UJ, to examine the degree of implementation of e-Learning by the faculty members, and to investigate faculty members' perceptions of using of e-Learning.

A survey questionnaire was developed and to collect data in this study. A paper-based survey was developed and sent to 1314 UJ faculty members to investigate their perceptions and attitudes towards the use of e-Learning in instruction at this university. Data was collected at the end of Fall Semester and beginning of Spring Semester 2012-2013 and analyzed by using descriptive statistics.

Results indicated that faculty members generally perceive e-Learning as a positive force in helping students' achieve their learning objectives. Furthermore, the study revealed that faculty members training, well prepared online courses and learning materials, sufficient groundwork for the smooth transition from traditional modes of learning towards e-Learning delivery, and the

implementation of a more robust technological infrastructure were needed to launch, support, and sustain e-Learning. Overall, there was an overall positive outlook toward e-Learning by faculty members with the belief that it is a tool which enhances learning.

The expected audience for this research study included faculty at higher education institutions, university administrators, and faculty development directors. The results of this study will benefit the expected audience by identifying what is currently taking place with e-Learning integration at one higher education institution in Jordan. This information may assist faculty at other higher education institutions in Jordan to successfully implement e-Learning in their classrooms.

This study is organized as follows: Section-Two provides a literature review of faculty perceptions about the use of e-Learning in instruction and the major factors affecting faculty use of e-Learning technology. Section-Three introduces the problem of the study, describes the purpose of the study, and lists research questions. Section-Four describes the research method that was used in the study, including a description of the subjects, research design, and data analysis. Section-Five presents the results and findings of the study, Section-Six provides a discussion related to the faculty members' perceptions of using of e-Learning at the UJ, and Section-Seven provides conclusion and recommendations.

Literature review

Nowadays, there is a substantial growth in the use of e-Learning platforms in higher education from universities around the world (Paechter, Maier, & Macher, 2010). Thus, there are a number of research studies that addressed various issues related to the role of e-Learning to improve the quality of higher education systems. While many research studies have examined instructors' views on the factors that affect e-Learning technology use in classrooms, few studies have investigated the faculty members' e-Learning perceptions.

With exponential growth in e-Learning practices in higher education, there is an increasing interest in faculty members' use of, and perceptions of e-learning (Levin & Wadmany, 2008). Indeed, there are lots of challenges facing the utilization of e-Learning in higher education institutions. Some are technological, others are cultural. This research study addresses key issues of e-Learning and next steps to be taken by the UJ in order to have a successful e-Learning program.

While the innovators and early adopters of e-Learning have embraced it enthusiastically, the majority of faculty members seem disengaged and uninterested in e-Learning (Newton, 2003). There are many reasons for this. Poor network access is a major concern that hinders faculty members' dispositions to adopt, change, innovate, move out of their comfort zones and develop new skills and competencies in order to be able to cope with new technology tools (Naidu, 2004). Without institutional sponsorship, support and appropriate rewards for engagement in e-Learning and the pursuit of excellence in teaching and learning at the local level, faculty members are likely to remain disengaged and unenthusiastic about engagement in e-Learning or innovative educational practices (Georgouli, Skalkidis, & Guerreiro, 2008).

Al-Wehaibi, Al-Wabil, Alshawi, and Alshankity (2008) examined problems that faculty members experience in their adoption and use of e-Learning technologies in teaching, communication, and research. According to their study, the most common barriers are related to Internet connectivity, intellectual property issues, and concerns with the loss of privacy. Moreover, the findings of their study indicate no significant differences associated with faculty members' gender, academic discipline, teaching experience, and age. However, significant correlations were found with faculty members' academic rank and years of Internet experience.

Tomasegovic, Elias, Baracic, and Mrvac (2011) conducted a study to analyze how e-Learning could affect students' learning and lecturers' teaching methods. Their study indicated that the

implementation of information and communication technologies (ICT) as well as e-Learning technologies change the way of education system from traditional to modern. Furthermore, according to their study, several changes occur due to integration of e-Learning in education that affect students' and lecturers' mobility. With the development of certain technologies, students' attendance in class is no longer an important factor because they can now learn at a distance using e-Learning tools to take the learning process one step further. Their study concludes that in order for mentioned changes to occur, the use of e-Learning and development of new related tools are almost mandatory. Finally, the study revealed that e-Learning enables direct student' involvement in planning and development of the class; it also gives a motivation to students and instructors to improve their work and communication in order to express their opinions and give creative advice on how to make particular course more interesting and pragmatic.

Almarabeh and Mohammad (2013) conducted a study to describe and review, in a constructive way, the current status of e-Learning in Jordan's higher education institutions. It shed light on the strengths, weakness, opportunities, and threats of implementing e-Learning in the Jordanian higher educational system. The results of their study showed that Jordan has sufficient awareness of the importance of e-Learning, the factors that help to make it successful, and challenges that could lead to failure. All the parties are fully aware that implementation of e-Learning should be gradual and needs patience, encouragement, and continuous technical support so that Jordan's e-Learning system can become the most advanced and developed in the Arab world.

However, Almarabeh and Mohammad's study comprised a SWOT Analysis of e-Learning in Jordan as follows:

Strengths: (a) Jordan is already well endowed with telecommunications infrastructure; the quality and reliability is above global standards; and IT industry is growing rapidly; (b) Jordanian Universities have robust, standards-based information technology networks; infrastructure, including hardware, software, and applications for intra-university connectivity; and global connectivity through the Internet; (c) Jordanian Universities are connected to centralized integrated e-library system; and (d) some Universities have invested in e-Learning tools.

Weaknesses: (a) E-Learning experience is immature in all Jordanian Universities and it is scattered among departments and faculties without consistency; (b) There is no common definition of e-Learning as they range from using computers for learning to purely distance learning; (c) There is no shared vision of e-Learning for Jordan; some decision makers perceive e-Learning as a luxury form of education, a replacement of faculty, and a way to reduce budget deficits. (d) E-Learning needs commitment and leadership support from University presidents, deans, and departments' heads; and (e) There is no Jordanian e-Learning community.

Opportunities: (a) Increasing number of high school graduates will increase the number of students heading to universities and other higher education institutions with no space or capacity to absorb them. Many are looking to e-Learning as a possible solution; (b) The students to faculty ratio is very high, e-Learning is perceived as a possible solution to address this problem; (c) There is a strong desire to improve the quality of education in Universities; e-Learning is perceived as one of the solutions; (d) eLearning can provide an alternative solution for many students who would otherwise pursue their studies at foreign academic institutions outside of Jordan to get their education; this could save the country foreign currency; and (e) Universities in Jordan can collaborate in producing e-content for shared University's requirement courses.

Threats: (a) PC/laptop penetration is 61.2% and is growing annually, but it is still behind desired levels due to affordability issues; (b) Internet penetration in Jordan is only approximately 35.4%; (c) There is a lack of e-Learning culture and there is some fear of it, especially among faculty who do not have a clear understanding of their role in e-Learning; and (d) There are faculty

concerns that they will be replaced if their institution adopts e-Learning. What happens to the course materials that I have worked so hard to develop? Who will take care of my students?

Abouchedid and Eid (2004) indicated that e-Learning now receives more attention in the Arab world than before. Some Arab countries, such as the Arab Gulf, have made good starts in e-Learning and their student enrollment in e-Learning courses is increasing.

Some studies (such as Al-Shboul and Al-Smadi, 2010; Al-Adwan and Smedley, 2012) focus on the Arab region experiment in e-Learning and discuss the possibility of implementing e-Learning in spite of social, political and economic difficulties in the Arab regions. They find that the quality of e-Learning programs in developing countries affected by less established technological infrastructure and less supportive cultural and socio-political environments.

In a study about the adoption of e-Learning in Jordan, Al-Shboul and Al-Smadi (2010) indicated that expectations in using e-Learning in higher education institutions are below the international level. The study illustrated challenges of utilizing e-Learning systems in public universities in Jordan and identified factors that have an impact on adoption of e-Learning in higher education institutions in Jordan: (1) The use of e-Learning tools requires the higher education institutions to change their teaching methods, which cannot be easily changed; (2) Lack of technological skills related to using e-Learning systems, where lack of such skills among instructors and students will lead to lack of interest in e-Learning applications or resistance to use it. (3) In some cases, the administration refuses to provide financial support and qualified staff necessary to facilitate the use of e-Learning applications. (4) Some institutions do not believe in the usefulness of e-Learning and therefore do not pay attention to its application. (5) Some instructors believe that the use of such applications reduce their role in the educational process. And (6) Lack of interest in training and the absence of adequate technological skills of instructors and learners will lead to the failure of those applications.

Al-Adwan and Smedley (2012) explored the factors that influenced the development of learning through technology at two Jordanian universities. The purpose of their research was to consider learning using technology in Jordan, reflecting that the more traditional approaches often made implementation challenging due to established staff practices and student learning expectations. In particular, the study determined technological factors that influenced the involvement of full time students and faculty members in e-Learning programs within the Jordanian Higher Education system. It also explored the general attitudes of students and faculty members towards e-Learning. It considers the general attitude towards engaging in learning through technology with outcomes demonstrating that training and development is required prior to implementation. To adequately support the learning transition, as universities throughout the world move forward with e-Learning, Jordanians universities are trying to respond accordingly.

According to Al-Adwan and Smedley's study, e-Learning offers alternative approaches to Jordanian traditional higher education institutions, encouraging them to re-evaluate the way they operate. In doing so, it provides potential to accommodate new information and communication technologies to enhance the student learning experience. Informed by the outcomes of the study, a training and development program has been designed, developed, and implemented to support the cultural change and increase its impact. Additionally, using technology to support learning was a key attribute in the success of the overall student learning experience. The findings demonstrated that faculty members who suffered from a lack of ICT skills were not able to benefit or engage with e-Learning opportunities whether these took place in classes or elsewhere. This lack of ICT skills resulted in a type of resistance among faculty members which led to uncertainty about the benefits of e-Learning. Hence, increased availability and familiarity with the desired technologies could contribute to raising the level of ICT skills of faculty members.

Although the use of e-Learning in higher education has significantly increased over the past decade, resistance to new uses of technology by professors and lecturers in university and colleges worldwide remains high (Kim, 2008). In this regard, Kim's research study was concerned with e-Learning intentions and plans by faculty members in higher education institutions. The study identified the determinants of professors' intentions to increase their use of e-Learning methods in universities. Furthermore, the study investigated the factors influencing the usage and acceptance of e-Learning, particularly in Korean higher education institutions.

Any system can success or fail depending on technological factors and human factors (Ozkan & Koseler, 2009). Although the literature on factors affecting university faculty regarding e-Learning is limited, there are several interesting studies that discussed motivators and inhibitors for use of e-Learning in teaching and learning.

Ertmer (1999) identified two types of barriers, external barriers related to technical skills needed to operate a computer and use internet and internal barriers concerned with intrinsic motivation and fundamental beliefs about current practice. He stressed the importance of clarifying the relationship between these different types of barriers or that delineates effective strategies for addressing different barriers.

Betts (1998) looked at the motivation behind the use of distance education at the George Washington University (GWU) and found that faculty were motivated by intrinsic factors and were inhibited by lack of release time and technical support. However, based on this study, the following conclusions were offered:

- Distance education is of interest at GWU. This interest is supported by both the high survey return rate and the extensive number of written comments provided by the faculty and deans supporting their opinions, concerns, and ideas regarding distance education.
- Deans who support distance education and/or who have experience with distance education at GWU will continue to have an increased number of faculty participating in distance education.
- Faculty who have extensive experience in higher education and faculty who are not involved in the tenure and promotion process are more likely to participate in distance education than faculty with less experience in higher education and/or faculty who are vying for tenure.
- Faculty members are more likely to participate in distance education if inhibiting factors are eliminated by the administration, and the intrinsic benefits involved in distance education are stressed by the administration.
- Distance education participants will continue and/or increase their participation in distance education, if their needs are satisfied.
- Faculty participation will not increase significantly unless the administration begins to eliminate inhibitors that deter faculty from participating in distance education.
- Regardless of whether or not faculty felt positive or negative toward distance education, the faculty members recognize the value of distance education in postsecondary education.

Schifter (2002) studied two other factors for their impact on a faculty member's intention to offer an e-Learning course: personal needs (e.g., saving time and monetary rewards) and extrinsic motives (e.g., a requirement of one's department and support of school officials). The data showed that faculty who had taught online courses were more likely to name intrinsic motives while those who had not were more likely to name extrinsic motives. Fredericksen, Pickett, Shea, Pelz and Swan (2000) drew similar conclusions, suggesting that faculty motivated to offer e-

Learning courses rated the experiences more satisfying than those where motivation was a fear of being left behind. To increase the number of participating faculty and cumulative experiences in e-Learning courses, rewarding faculty and releasing time for training need to be considered (O'Quinn and Corry, 2004).

In general, the reviewed literature identified some challenges for implementing e-Learning systems tools in the institutions of higher education, which are due to a number of different issues (Al-Shboul, 2007). The most common challenges are: faculty members hesitate to change; some faculty members do not have the skills to use e-Learning systems, and are not especially eager to learn; and there is an institutional reluctance to provide sufficient personnel and financial assistance to facilitate the use of such technology. Other challenges is that timely faculty development, support, and learning materials are required to integrate e-Learning tools effectively; moreover, potential users are often reluctant to acquire the skills for using such technology.

One of the other challenges for implementing e-Learning systems in higher education is that some instructors may have felt threatened by change, so chose to resist e-Learning systems. Also, little formal effort was made to support instructors who tried to implement e-Learning systems (Anderson, 2003). Additionally, some faculty members are reluctant to adopt e-Learning systems because they believe the systems reduce their control of instruction and the instructional environment. Some faculty members and university administrators do not believe that e-Learning management systems fulfill their needs. Some literature indicated that the organizational cultures, norms, and planning are affecting the utilization of e-Learning systems (Butler & Sellbom, 2002).

The rest of the challenges for implementing e-Learning management systems in the academic institutions, according to the reviewed literature, can be summarized as the following: characteristics of e-Learning systems: protection of intellectual property rights; royalties on copyrighted materials; technological background; concern about students' technological skills; concern about loss of control over teaching process; concern about faculty workload; concern about faculty role; lack of monetary support; lack of adequate training in the use of e-Learning systems; lack of salary increase; lack of release time; lack of time to learn e-Learning systems; lack of technical support provided by the institution and, most importantly, a perceived lack of institutional encouragement, support, and incentives (O'Quinn, 2002).

Du Boulay, Coultas, Luckin, and Garnett, (2011) conducted a study to examine the effectiveness of e-Learning in higher education; they investigated factors determining the overall effectiveness of e-Learning systems used in higher education in the United Kingdom (UK). They indicated that attitudes to e-Learning can be influenced by both personal and situational factors.

In a systematic review of the literature of e-Learning in higher education in UK on implementing e-Learning programs for higher education, O'Neill, Singh & O'Donoghue (2004) acknowledged that technology can enhance the learning process but not replace the lecturer or tutor. They list the implications of e-Learning for universities who need quality and flexibility to meet the diversity of students' needs:

- Tailoring courses to suit differing educational needs and aspirations.
- Lecturers will be forced to fundamentally change their approach to teaching to accommodate the shift in student learning styles.
- Increased workload requires proactive and effective management. This has implications for the fundamental structure of the university itself.

- Universities must change to accommodate demand and in response to new competition from global, giant corporate and virtual universities. However the problems associated with the change must be fully recognized prior to the transition taking place.
- Many e-Learning implementations in the UK university sector are costly and yet superficial in terms of learner engagement and activity. They provide a content repository and in many cases limited active learner participation.
- When staff are 'forced' down the e-Learning route as a consequence of management directives and mission statements, the creation of sound pedagogic practice is often flawed or missing completely and the activities constructed service the technology rather than student or learner progression or association.

While this review focused largely on the technology and its implementation, O'Neill et al. (2004) argued that the critical factors for success will change with the implementation of e-Learning programs and asserted that the new key elements in the success of the e-Learning experience are: prior experience of using technology, the technological infrastructure, and the lecturer.

Osika, Johnson, & Buteau (2009) discussed the initial strategies developed to increase faculty participation in online instruction. They pointed out that online education has become a staple of higher education institutions. According to their study, in the latest survey conducted by the Sloan Foundation, it was found that over two-thirds of higher education institutions were offering a variety of online courses and programs. Moreover, they indicated that over 20% of all students took at least one online course in 2006 and this is projected to continue to increase over time. However, they stated that observations at a specific urban university in the mid-west, shows vast variation in terms of faculty who choose to utilize online instructional technologies and a significant lag in desired online development. With the importance of online instruction, Osika, Johnson, & Buteau stated that the question asked was "how can an institution encourage their faculty members to move forward with online instruction?" As a result, the study outlines the answer to that question by determining what factors were found to influence a faculty member's decision whether or not to integrate online technologies into the faculty member course. The factors considered centered on areas such as: (a) perceptions of online instruction, (b) past experience with online technologies, and (c) specific experiences at the university.

Alkhatnai (2009) evaluated the use of e-Learning at King Saud University (KSU) in Saudi Arabia using the e-Learning Maturity Model (eMM). The main essence of the eMM is improving the course-level adoption of e-Learning, as well as the institution-wide integration of e-Learning. The preliminary findings of the study highlight both strengths and weaknesses of KSU e-Learning implementation plan, in reference to the eMM standards.

Sahab (2005) conducted a study to summarize the current situation and opportunities at King Abdul-Aziz University (KAU) regarding e-Learning. Key issues were addressed and the key elements of the so-called the "ACTION methodology" were discussed with respect to KAU. Those are access, cost, teaching and learning, interactivity, organizational issues, novelty and speed. According to the study, there are lots of challenges facing the new direction, some are technological, and others are cultural. The study also addressed the key issues of e-Learning and the next steps to be taken by KAU in order to have a successful e-Learning program.

Al-Wehaibi, Al-Wabil, Alshawi, and Alshankity (2008) conducted a study to examine problems that faculty members experience in their adoption and use of Internet technologies in teaching, communication, and research. It was found that the most common barriers are related to Internet connectivity, intellectual property issues, and concerns with the loss of privacy. The findings of the study indicated no significant differences associated with faculty members' gender, academic

discipline, teaching experience, and age. However, significant correlations were found with faculty members' academic rank and years of Internet experience.

Jamlan (2004) conducted a study to determine how faculty members at the University of Bahrain's College of Education perceive e-Learning, and how they might choose to integrate it into their everyday teaching activities. However, the results of the study indicated that faculty generally perceive e-Learning as a positive force in helping students' achieve their learning objectives. The findings of the study also indicated areas of weakness: specifically that baseline technological and human resource prerequisites are necessary to support e-Learning, and that these baseline prerequisites are not yet available at the University of Bahrain. Other baseline prerequisites are: staff training, well prepared online courses and learning materials, sufficient groundwork for the smooth transition from traditional modes of learning towards e-Learning delivery, and the implementation of a more robust technological infrastructure to support all the technical aspects necessary to launch and sustain e-Learning.

Alenezi (2012) investigated faculty members' attitudes towards e-Learning in higher education in the Kingdom of Saudi Arabia and the factors influencing their attitudes. The study examined differences in attitude between faculty members based on age, gender, faculty rank, and teaching experiences. The results showed that there is a difference between the levels of e-Learning based on different components of identity. The gender perceptions were the first indication of differences, with perceptions by females being more positive than that of males. This was followed by age differences in which the ages under 44 had a stronger perception of e-Learning than those over the ages of 45. Faculty rank was noted as being affected by the perceptions of e-Learning being stronger with those who had a rank of assistant professor. Furthermore, results showed that faculty members who had less teaching experience had a stronger perception than those who had been teaching for more than 10 years. There was an overall positive outlook toward e-Learning by faculty members with the belief that it is a tool which enhances learning. When responding to questions about challenges and obstructions of e-Learning, participants revealed that a lack of tools and knowledge created impediments to teaching e-Learning courses.

Hussein (2011) conducted a research study aims to identify the attitudes of faculty members at Saudi Universities towards using e-Learning Management System JUSUR, which follows the National Center for e-Learning. The results showed a positive attitude of the members of the faculty at Saudi University towards e-Learning management system JUSUR, although it has not activated in a sufficient way yet. In addition, the results showed a need for training in using the JUSUR system and in particular learning content management and file sharing, forums, and Questions Bank. Moreover, results showed there were no differences in attitudes towards using the system among the faculty members regarding gender or the types of colleges humanitarian, scientific, and health.

Babić (2012) mentioned that introducing e-Learning into higher education institution brings about changes on organizational, economical and technical level; however, the practice shows that e-learning has been introduced into such institutions in various ways which resulted in different quantity and quality of the education processes using e-learning technology. To improve the effectiveness of e-Learning, there is a need or changes to be occurred for developing the quality management system in the field of e-Learning. Additionally, Babić have grouped in several categories the factors that influence academic teacher's acceptance of e-Learning technology, these factors categories are: teacher competence (knowledge and skills), teacher's attitude towards e-Learning technology, teacher's personality, characteristics of students and the field of study, acquiring knowledge and skills, and institutional factors.

Little-Wiles, Hundley, Worley, and Bauer (2012) examined an online learning management system in relationship to faculty in the School of Engineering and Technology at Indiana

University-Purdue University Indianapolis; the study focused on two main areas of inquiry, faculty usage and faculty perceptions of the learning management system. Researchers also gave faculty the opportunity to respond to four open-ended questions including what they liked most and least in the system, suggestions for improving their use of the learning management system, and finally, how they could use the learning management system more effectively in their courses. The last section of inquiry concentrated on faculty's perceptions of online courses to help researchers gauge interest, experience, and opinions on the subject.

Little-Wiles, Hundley, Worley, and Bauer's research study centered on what faculty use in a learning management system to aid their students in not only gaining knowledge, but also in engaging them in the course and area of focus. Specific elements were identified that (1) faculty commonly use within the learning management system, (2) faculty perceive students respond best to, and (3) faculty perceive students care most about. The results provide both administrators and faculty with general guidelines in developing and maintaining successful online learning environments. Furthermore, the study discussed the determination of faculty's training experience and requirements. Finally, an understanding of faculty perceptions of the learning management system has been summarized and reported in the study.

Harrington, Staffo, and Wright (2006) investigated how faculty members uses of a course management system (CMS) helps improve content and instruction, and how faculty attitudes may help or hinder that effort. Results of this study show that communication and organization play key roles in course improvement, that a university's commitment and support is critical in securing faculty involvement.

Learning Management Systems (LMS) are web-based systems allowing instructors and/or students to share materials and interact online. The use of technology for teaching and learning in higher education has grown exponentially in the past decade, particularly the use of web-based systems (Lonn, Teasley, & Krumm, 2009). Hawkins and Rudy (2007) reported that over 90% of all responding universities and colleges have established one or more LMS to allow instructors and students to share instructional materials, make class announcements, submit and return course assignments, and communicate with each other online.

Cook, Ley, Crawford, and Warner (2009) examined how rewards systems, extrinsic and intrinsic, could play an important role in providing incentives for university faculty to teach (or remain teaching) electronic and distance education courses. The study indicated that, while faculty members were inherently committed to helping students, faculty members wanted their basic physiological needs met by university administration through extrinsic motivators, such as salary increases and course releases.

Lee and Lee (2008) investigated how professors perceive the blended instructional mode and what supports they need to use this mode. It is envisaged that the results of this study will help university administrators to establish the policies and strategies that would facilitate faculty members use of blended e-Learning.

Lee-Post (2009) demonstrated the applicability of an e-Learning success model to guide the design, development, and delivery of e-Learning. A primary contribution of her research is in furthering scholars' understanding of how to define, assess, and promote e-Learning success. However, Lee-Post's e-Learning model calls for institutional supports for instructors, in particular for those who are e-Learning skeptics. Some critical institutional supports include, first, a sound technical infrastructure such as campus-wide high speed Internet access, and institutional learning management systems like Blackboard or Moodle should be provided. Second, ongoing instructors' workshops should be organized to allow training and sharing of e-Learning best practices. Third, e-Learning developmental support in the form of technical and pedagogical aids should be established to facilitate instructors' e-Learning adoption. Fourth, technical support

should be in place to address any issues that arise in e-Learning delivery and access. And fifth, incentives such as grants, awards and other forms of recognition should be placed to encourage e-Learning practices.

Lee-Post's e-Learning model also calls for an evaluation of e-Learning institutional outcomes so that the impacts of e-Learning can be assessed on the institutional level as well. Specific measures for institutional outcome can be cost saving, increased enrollment, higher rankings, increased endowment, etc. Lee-Post's model provides a more comprehensive view of e-Learning success – that students, instructors, and institutions all have roles to play (Lee-Post, 2009).

Fazlollahtabar and Abbasi (2012) explored learning management systems in e-Learning educational system; their study revealed that LMS provides properties of an educational administrative system. Furthermore, Fazlollahtabar and Abbasi emphasized that e-Learning management system has many benefits to the academic institutions such as manages learners and keeps track of their progress and performance across all types of learning activities. E-Learning management system also manages and allocates learning resources such as registration, classroom, instructor availability; monitors instructional material fulfillment; and provides online delivery of learning resources. E-Learning management system is a large Web-based software application comprising a suite of tools that centralizes and automates aspects of the learning process through the following functions: register learners; maintain learner profiles; maintain a catalogue of courses; store and deliver self-paced e-learning courses; download e-Learning modules and tools; track and record the progress of learners; assess learners; track and record assessment results; and provide reports to administration.

Pituch & Lee (2006) stated that the benefits of an e-Learning system will not be maximized unless learners and instructors use the system; they also indicated that whereas educational institutions have invested substantial resources in e-Learning systems, the benefits of such systems will not be realized if learners and instructors fail to use the system. Their study proposed and tested alternative models that seek to explain student and faculty members' intention to use an e-Learning system when the system is used as a supplementary learning tool within a traditional class method. Additionally, based on e-Learning and information technology adoption literature and technology acceptance model (TAM), Pituch & Lee developed a model that integrates key constructs involved in e-Learning use. The constructs are (a) system characteristics such as functionality, interactivity, and response time (bandwidth capacity); (b) user characteristics, which means individual attributes related to technology usage and technical skills; (c) perceived ease of use and usefulness of the system, which impact intention to use a technology application; and (d) use of the technology, which means the user perceptions of the beneficial characteristics of the system.

Salmon (2005) proposed an e-Learning strategy for higher education institutions in the United Kingdom (UK); he developed a strategic framework for e-Learning for the University of Leicester and pedagogical innovation in higher education institutions in UK. Salmon stated that academic staff are naturally reluctant to change their methods of teaching and learning without a deep understanding of why and how and what the impact will be in terms of quality and any resultant benefits. Furthermore, he indicated that most staff who are inexperienced in e-Learning initially believe that it is about technical 'solutions' rather than pedagogical innovation. Given the research imperative in most institutions of higher education, there are few direct benefits for academics to innovate in their teaching, and as such staff development and support are essential to promote and encourage uptake. To engage large numbers of academics, any approach must seek to ensure that ownership, not only of content but also of pedagogy, continues to lie directly within academic departments, but also recognizes that a wide variety of supportive mechanisms must underpin the continued developments.

Statement of the problem, importance of the study, and questions of the study

The UJ is the first public Jordanian university in Jordan, it was established in 1962. UJ is both a modern as well as old leading academic institution of Higher Education in Jordan; it has 19 faculties 2 deanships and 15 centers in the main campus in Amman in addition to 5 faculties in Aqaba branch. The UJ took e-Learning and ICT-led development initiative in its vision since 2003, when the LMS was integrated into its information system; Blackboard in 2005 and Moodle in 2012 (Al-Shboul, Rababah, Al-Sayyed, Sweis, & Aldreabi, 2013).

The UJ was using Blackboard as e-Learning platform to provide better service to students and instructors, to facilitate accessing the required material from anywhere, and to facilitate the communication between students and instructors. Blackboard has been used in UJ mainly to design a well formed virtual learning environment (VLE) which facilitates the interaction among all parties in the teaching process, students, and instructors. From the academic year 2012-2013, the UJ is starting to use Moodle instead of Blackboard as a main LMS, but the using still in the beginning; the LMS can be accessed by registered users from anywhere in the world using Internet and web browsers (Almarabeh, 2014). Hence, the web-based communication tools have given the online education a new edge.

Almarabeh and Mohammad (2013) reviewed the status of e-Learning in Jordan in SWOT model showed that Jordan has sufficient awareness of the importance of e-Learning, the factors that help in the success and the challenges of such project, and explained that the implementation process is gradual and needs patience, encouragement, and continuous technical support. Thus, the increasing availability of effective technology and e-Learning tools at Jordanian universities in general, and at the UJ in specific, justifies investigating the perceptions and attitudes of the faculty members towards such tools and the challenges that are associated with using these technologies.

E-Learning has been the focus of recent scholarly attention; as integrating technology into higher education becomes an institutional imperative at universities all over the world, adoption of digital courses in a new e-Learning becomes both an organizational goal and a source of data upon which to evaluate performance (Feeney, 2001). Furthermore, Feeney stated that higher education institutions face persistent challenges in the use of technology, with the e-Learning being the latest technology challenge.

Despite the expansion of e-Learning programs and its related tools, many faculty members are reluctant to participate in distance education or use its related technology such as e-Learning (Oravec, 2003). Faculty reluctance has been linked to internal issues such as a lack of incentives and rewards systems to encourage faculty participation and a lack of an institutional framework to train distance teaching faculty (Irani & Telg, 2007). Kim (2008) stated that one of the primary factors that influences faculty participation in distance education and its related technology is the effect on faculty workload.

In summary, the reviewed literature identified that the level of e-Learning use has increased as faculty perspectives toward such technology have been addressed (Ong, Lai, & Wang, 2004; Roca, Chiu, & Martínez, 2006). Therefore, the stated aim of this study is to assess the level of e-Learning integration at the UJ as well as to investigate and address those factors that faculty members identify as being influential in their decision and ability to use e-Learning in instruction.

Statement of the problem

Technology by itself cannot be effective. Providing the latest technology to learners does not necessarily ensure improved learners' participation or achievement. Additionally, technology does not necessarily improve instruction. Faculty perception and attitude towards technology was found to be an important element in a successful integration of technology (Afshari, Bakar, Luan, Samah, & Fooi, 2009; Nelson, 2003). It is important to investigate the faculty's attitudes and

perceptions towards the utilization of e-Learning in their classrooms and their involvement in such technology. Consequently, this research study was conducted to investigate the perceptions of faculty members at the University of Jordan towards e-Learning integration and to address the challenges that may affect e-Learning deployment at the indicated university.

A review of the recent literature shows that many articles have been written comparing the functionality of different e-Learning tools and exploring students' readiness, perceptions, and attitudes towards e-Learning; however, faculty members' perceptions of e-Learning, faculty users and non-users, have rarely been addressed. Some scholars, such as Ndahi (1999), Muilenburg and Berge (2001), Butler and Sellbom (2002), Morgan (2003), Gammill (2004), Baltaci-Goktalay and Ocak (2006), Harrington, Staffo, and Wright (2006), Abdelzaher (2009), Alshangeeti, Alsaghier, and Nguyen (2009), Meyer and Xu (2009), Osika, Johnson, and Buteau (2009), Benson, Anderson, and Ooms (2011), Hussein (2011), Alenezi (2012), Babić (2012), Al-Shboul (2013), and Govender and Dhurup (2014), have highlighted a need to explore such issues.

In a study of technology innovations, Lynch (2002) found that a low percentage of faculty members making use of e-Learning tools in educational settings. However, research indicated that one of the problems hindering the use of e-Learning and its related technology in higher education is faculty resistance (Kim, 2008). Therefore, research is needed to explore the faculty perceptions about the use of e-Learning tools in instruction in higher education institutions and to define the most important factors affecting e-Learning integration in education.

Rationale for the study

Some of the reasons for conducting this study are the lack of studies conducted on this area of research within the context of higher education institutions in Jordan. This study is valuable for the Instructional Technology leadership because it establishes a cornerstone for any development training program for faculty technology integration at higher education institutions. In addition, this study is beneficial to instructional technologists in understanding faculty reluctance when diffusing new instructions, educational technologies, or e-Learning programs.

As more courses require use of e-Learning tools, as more funding is required to implement and support these classes, and as more time is required to develop and facilitate these courses, it becomes critical to understand faculty members' perceptions towards e-Learning to realize why faculty members choose to use or not to use e-Learning tools to support their courses.

Purpose of the study

The purpose of this study was to identify faculty members' perceptions towards the use of e-Learning tools in higher education at one public Jordanian university, explore the level of integration of e-Learning at the UJ, examine factors that are related to faculty's attitudes towards the use of e-Learning tools, probe what one academic institution can do to improve the utilization of e-Learning at its campus, and highlight the issues and challenges regarding the use of e-Learning tools in one of higher education institutions in Jordan. Specifically, the purpose of this study was to identify potential issues and concerns related to the use of e-Learning tools by faculty members (users and non-users) at this University; with an emphasis on e-Learning faculty members' non-users.

Significance of the study

Conducting research on faculty perceptions and attitudes towards the use of e-Learning tools in teaching-learning process is important because the findings will help understand technology integration. The importance of the obtained information can assist the university in determining the educational costs, and value in terms of e-Learning effectiveness, regarding the technology integration because academic institutions spend millions of dollars per year on technology. In addition, the obtained data can help in determining what academic institutions can do to improve

technology integration (such as e-Learning) at their campuses (Al-Shboul, 2013). The obtained data can provide information about what academic institutions can do to reduce, minimize, or overcome the obstacles to technology integration (such as e-Learning) because the level of technology integration has become a source of data upon which to evaluate university performance and reputation (Feeney, 2001).

Identifying faculty attitudes and perceptions towards e-Learning in higher education may lead to a better understand causes of reluctance to use e-Learning. This study helps fill the gap in the current Educational Technology knowledge base regarding the issues and concerns related to the deployment of e-Learning in higher education in Jordan and the main challenges associated with successful utilization of e-Learning systems.

The study will provide an understanding for why faculty do or do not utilize e-Learning in their instruction. Understanding what truly motivates faculty to employ e-Learning could help administrators in encouraging faculty who have stronger intrinsic motives over personal needs. Examining barriers to e-Learning could help administrators reduce or minimize those obstacles.

Furthermore, past researchers studying the diffusion of e-Learning have focused on the attitudes of faculty who have used it. As a result, attitudes and perceptions of potential users towards such technology are neglected. A need exists to understand faculty attitudes towards e-Learning, particularly perceptions and attitudes of the majority of faculty members who have not used e-Learning (Reiser & Dempsey, 2002). Therefore, there is a need for better representations of why some faculty members adopt e-Learning technology and why some faculty members resist it.

Questions of the study

This study sought to determine the issues and concerns related to e-Learning integration in higher education in Jordan and to identify the faculty members' perceptions and attitudes towards the use of e-Learning at the higher education, in general, and at the University of Jordan, in specific. Consequently, the following research questions were addressed:

1. What are faculty members' perceptions and attitudes towards the use of e-Learning at their higher education academic institution?
2. What are higher education faculty members' major concerns regarding e-Learning use?
3. What do higher education faculty members believe their academic institution can do to improve the utilization of e-Learning at its campus?

Research methodology

This study presents information that will be useful to a number of institutions that have an interest in the diffusion of postsecondary online or Web-based instruction. This includes, but is not limited to, faculty at higher education institutions who are using e-Learning Management Systems and/or potentially will use e-Learning Management Systems, university administrators, and faculty development directors. The results of this study will benefit the expected audience in that it will identify faculty perceptions of what is currently taking place with e-Learning integration at a higher education institution.

A paper-based survey was sent to all faculty members at the UJ in the beginning of Spring Semester 2012-2013. Data was collected from the participants of the study; then, the survey was analyzed by using the Statistical Package for the Social Sciences (SPSS) statistics software, version 17.0.

Population of the study

The target population that the researcher would like to generalize about is all faculty members at postsecondary educational institutions in Jordan. However, the accessible population for this

study was all faculty members from the University of Jordan drawn from across all academic disciplines, who hold the rank of instructor/lecturer, assistant professor, associate professor, or full professor and who were employed full-time at the main campus during the academic year 2012-2013.

The faculty roster with a complete list of academic faculty members' names, academic rank, and faculties to which they belong were obtained from the Human Resources Department (HRD). Based on information obtained from the HRD database at this university for the academic year 2012-2013, there were 1314 full-time faculty members as identified previously with different ranks. Thus, the accessible population (N) for this study was 1314. Table 1 shows the breakdown of faculty rank per faculty (college) at this public university at the time of conducting this study.

Table 1
Faculty rank per faculty ($N=1314$)

Faculty	Lecturer	Assistant	Associate	Professor	Total
Faculty of Science	21	21	33	62	137
Faculty of Medicine	19	44	51	35	149
Faculty of Nursing	18	16	8	3	45
Faculty of Agriculture	5	13	23	46	87
Faculty of Pharmacy	18	15	13	16	62
Faculty of Dentistry	3	15	12	15	45
Faculty of Engineering and Technology	18	35	40	41	134
Faculty of Rehabilitation Sciences	16	15	2	---	33
King Abdullah Second for IT	17	24	8	9	58
Faculty of Foreign Languages	33	17	9	11	70
Faculty of Business	20	19	11	20	70
Faculty of Law	5	11	17	4	37
Faculty of Physical Education	9	7	6	13	35
Faculty of Shari'a (Islamic Studies)	10	20	27	20	77
Faculty of Arts and Design	23	2	5	1	31
Faculty of Educational Sciences	18	18	33	25	94
Faculty of Arts	14	8	30	36	88
Faculty of International Studies	2	3	5	5	15
Faculty of Archaeology and Tourism	5	3	3	3	14
Languages Center	13	11	9	---	33
Total	287	317	345	365	1314

Research design

The methodology used in this study, which follows the guidelines recommended by some of the reviewed literature (Ndahi, 1999; Nelson, 2003; Gammill, 2004; Harrington, Gordon, & Schibik, 2004; Kim, 2008; Al-Shboul, 2013), employed quantitative data collection procedures. However, descriptive research was used as a methodology to answer the research questions. A non-experimental quantitative research approach was used in this study. The majority of the survey questions took the form of an attitude scale similar to a Likert-type scale. Respondents addressed each statement using a five-point Likert-type response set: 1=strongly disagree, 2=disagree, 3=do not know (neither disagree nor agree), 4=agree, 5=strongly agree; in addition to some statements took the form of closed-ended questions, or what is called dichotomous or two-point questions, (e.g. 'Yes' or 'No', 'Satisfied' or 'Unsatisfied', 'Agree' or 'Disagree').

Data collection procedures

Data were collected in several stages. Stage one involved obtaining institutional approval from the University's Administration. Prior to the survey distribution, an application was submitted to the Office of the Vice President for Scientific Research at this public university and the approval was obtained. Stage two was the survey distribution (both pilot and then primary). After obtaining a list of faculty members' information from HRD, paper-based surveys were sent to the selected full-time faculty members. Faculty members received the distributed surveys describing the intent of the voluntary study and an invitation to participate. All participants were informed of the intent of this study, invited to participate, and ensured confidentiality. The instrument was distributed in person and collected by the research assistant.

Stage three was the survey follow-up. Reminder notices were sent to the study participants who did not respond to or had not completed the survey two weeks following the initial distribution. Stage four was an analysis of the survey data. Analysis of completed and returned surveys provided findings of statistically significant issues, patterns, and highlights.

To ensure consistency within collected data, reliability and validity issues were addressed throughout this study. To ensure reliability and validity, the design process of the surveys used in this study included a pilot study ($n=64$); approximately 5% of the population ($N=1314$). After the pilot surveys were reviewed for recommended changes, questions, and consistency, revisions were made to selected questions for the primary survey.

The questions of the survey were designed to identify potential issues and concerns related to the use of e-Learning tools by faculty members in one of higher education institutions in Jordan, as well as to highlight the issues and challenges regarding the use of e-Learning tools as perceived by e-Learning faculty members' users and non-users at this University. Respondents were asked to indicate the importance of e-Learning in their particular field of teaching and the likelihood they would use or are using this technology. Potential issues and concerns were determined based on previous research and as indicated in the reviewed literature.

Data analysis procedures

Data analysis included the use of frequencies, percentages, means, and standard deviation. Furthermore, appropriate levels of measurement and different techniques were applied to data measurement, depending on the selected scale measurement. Data analysis and computations for all statistical techniques were performed using the SPSS, version 17.0. Then, the results were reported based on the analyzed data.

The results of the study

The purpose of this study was to investigate faculty members' perceptions of e-Learning in higher education institutions in Jordan and the issues and concerns influencing their perceptions. In addition, it explored the major challenges and obstructions facing the implementation of e-Learning by faculty members in the UJ. The findings of this study are presented in the following sections.

The primary data collection

This public university has 19 faculties and one academic center; thus, the faculty members at these faculties and a center were considered as the population of the study. The survey was distributed in two stages. The first stage, which aimed to answer the survey questions 1-17, was sent on 23rd of September 2012; it was completed on October 15th 2012. The second stage, which aimed to answer the survey questions 18-39, was sent on 10th of February 2013; it was completed on February 24th 2013. In this regard, it is important to highlight that the same group of faculty members who participated in stage one and completed answering the survey questions did participate in stage two too without adding any new participants. In other words, those

respondents ($n=268$) who have already completed the survey questions in stage one were asked to answer and complete the rest of the survey questions in stage two.

To ensure the consistency and reliability of the results, that is the same respondents who participated in stage one and completed all the survey questions would participate in stage two, these distributed paper-based surveys which collected in stage one were coded and given a consequence number along with the participants list, for each department in every faculty in the university according to the indicated faculty roster, in order to follow-up in stage two to the same exact respondents who did reply in stage one. However, the reason for doing so is that it was more convenient to the participants due to the length of the survey, approximately 30-45 minutes to complete, it may be best completed in two sessions.

Generally, full-time faculty members have a busy schedule with a little spare time which makes it hard to complete a survey consisted of 15 pages with 39 questions, where some questions contained several Likert-scale statements; thus, the survey was distributed in two stages. As mentioned earlier, stage one included questions 1-17; consequently, the results of stage one was reported separately in a published article on April 2013, by the same researcher of this study, titled "The level of e-Learning integration at The University of Jordan: Challenges and opportunities". Whereas the current study emphasizes on the results and findings of stage two of the survey, which contains the survey questions 18 through 39.

Nevertheless, the survey was distributed, in person by the research assistant, to approximately 1115 faculty members with 268 (24%) responding. The survey consisted of a total of thirty-nine survey questions. While some of the questions applied to all respondents, some were only asked of specific group of faculty members: Questions 1 through 13, and 22 through 39 were applicable to all respondents. Questions 14 and 15 were directed toward those who use e-Learning tools at the UJ (full-time faculty users of e-Learning). Questions 16 through 21 were directed toward those who never have used e-Learning tools at the UJ (full-time e-Learning faculty non-users). In addition, the data obtained from this primary survey was imported, coded, and entered into the statistical software program SPSS to determine if there were statistical and practical differences in survey responses between faculty users and non-users of e-Learning.

Response rate

The population for this research study (N) consisted of 1314 full-time faculty members, as shown earlier in Table 1. Sixty-four of these faculty were selected to participate in the pilot test survey ($n=64$); thus, the accessible population for the primary data collection included 1250 faculty members who were employed full-time during the 2012-2013 fall and spring semesters at the UJ ($N=1250$). Forty-four surveys were undeliverable due to the faculty member declared clearly to the research assistant that he/she does not want to participate in the study periods, and not to bother him/her in the following-up process. Also, 91 surveys were returned due to one of the following reasons: faculty member on sabbatical leave or the visiting faculty program, faculty member taking a leaving of absence as confirmed by the department secretary, or retired faculty. Thus, only 1115 surveys were delivered.

Three hundred and twenty-one surveys were received out of the 1115; among the 321 surveys there were 53 incomplete surveys, consequently, they were dropped from the study. Two hundred sixty-eight surveys were completed and considered to be the main data for the primary study analysis; thus, the primary study return rate was 24%.

It is important to mention that this study consists of two subgroups: e-Learning faculty users and non-users. In the primary survey, participants of each subgroup were directed to answer some questions based on their classification as e-Learning users or non-users. Out of 268 respondents who have completed the surveys, there were 151 e-Learning faculty users ($n=151$) and 117 e-Learning faculty non-users ($n=117$).

The primary data analysis and findings

The following is a descriptive analysis of the survey research questions. Out of 268 respondents who completed the survey, 178 (66.4%) were males and 90 (33.6%) were females as shown in Figure 1.

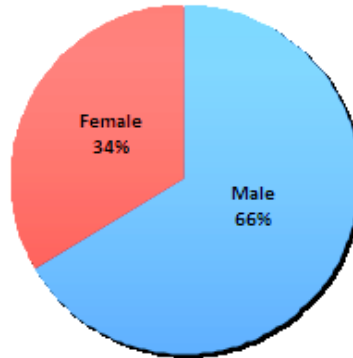


Figure 1. Distribution of faculty respondents by gender

The responding faculty rank consisted of 53 lecturers (19.8%), 95 assistant professors (35.4%), 57 associate professors (21.3%), and 63 full professors (23.5%) as shown in Figure 2.



Figure 2. Distribution of faculty respondents by rank

Table 2 shows the participants' representation with regard to the discipline.

Table 2
Participants representation with regard to the discipline (N=268)

Discipline/College	Response total	Response %
Faculty of Science	17	6.3%
Faculty of Medicine	27	10.1%
Faculty of Nursing	9	3.4%
Faculty of Agriculture	13	4.9%
Faculty of Pharmacy	11	4.1%
Faculty of Dentistry	10	3.7%
Faculty of Engineering and Technology	30	11.2%
Faculty of Rehabilitation Sciences	9	3.4%

Discipline/College	Response total	Response %
King Abdullah Second for Information Technology	19	7.1%
Faculty of Foreign Languages	8	3.0%
Faculty of Business	12	4.5%
Faculty of Law	6	2.2%
Faculty of Physical Education	14	5.2%
Faculty of Shari'a (Islamic Studies)	10	3.7%
Faculty of Arts and Design	16	6.0%
Faculty of Educational Sciences	26	9.7%
Faculty of Arts	17	6.3%
Faculty of International Studies and Political Science	4	1.5%
Faculty of Archaeology and Tourism	6	2.2%
Languages Center	4	1.5%
Total	=268	=100%

In a question about the type of e-Learning delivery tools faculty members are currently using or previously have used, the faculty respondents indicated that they are currently using or previously have used most is Blackboard. Seventy-two faculty members indicated that they are using or have used this type of e-Learning tool (26.8%). Forty-nine faculty members indicated that they are using or have used JU's Faculty Member Website as an e-Learning delivery tool (18.3%), and 30 faculty members indicated that they are using or have used Moodle for delivery of their classroom instructions (11.2%). While 117 faculty members indicated that they have not used any e-Learning tools (43.7%).

Figure 3 illustrates the type of e-Learning delivery tools that the respondents faculty are currently using or previously have used most.

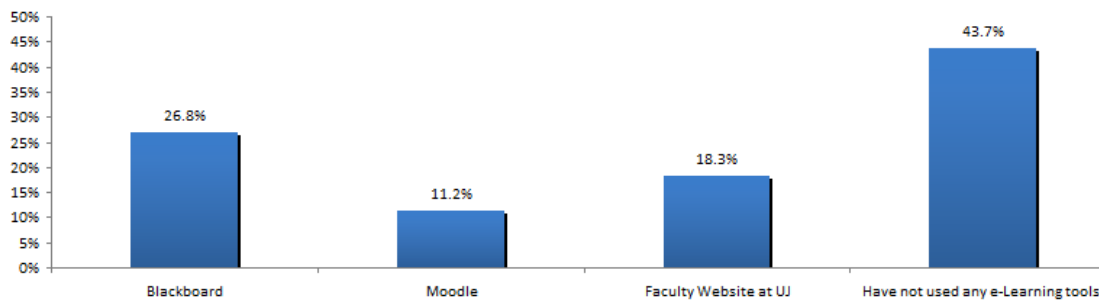


Figure 3. Type of e-learning delivery tools are currently using or previously have used most by the faculty respondents

In a question about faculty members' plans regarding using e-Learning tools, 60 faculty members indicated that they have no plans to teach a course using e-Learning tools (22.4%). Forty-two faculty members indicated that they plan to teach a course using e-Learning tools, but they are not sure (15.7%). Fifty-five faculty members indicated that they plan to teach a course using e-Learning tools in the coming year (20.5%). While 111 faculty members indicated that they either have taught a course using e-Learning tools or currently are teaching a course using e-Learning tools (41.4%). Figure 4 represents faculty members' plans regarding using e-Learning tools.

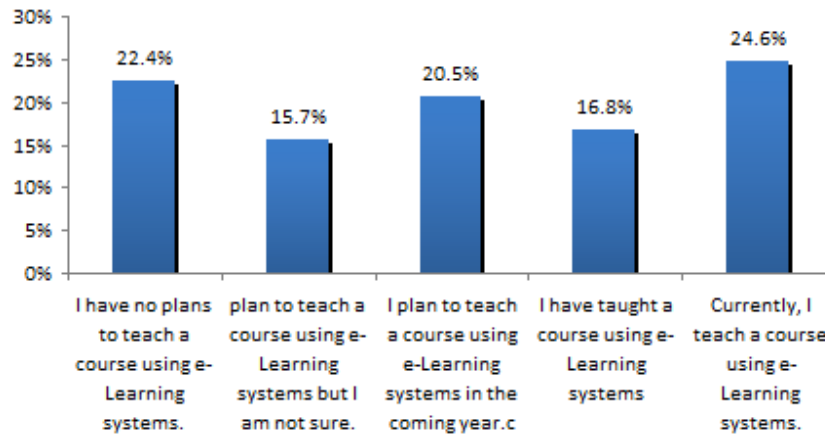


Figure 4. Faculty members' plans regarding using e-learning tools

In a question about if there is a relationship between exposure to e-Learning tools and attitude towards e-Learning tools, eight faculty members indicated they strongly disagree that there is a relationship between exposure to e-Learning tools and attitude towards e-Learning tools (3.0%). Fourteen faculty members indicated they disagree that there is a relationship between exposure to e-Learning tools and attitude towards e-Learning tools (5.2%). Thirty-three faculty members indicated they do not know whether there is a relationship between exposure to e-Learning tools and attitude towards e-Learning tools (12.3%). One hundred and fifty-seven faculty members indicated they agree that there is a relationship between exposure to e-Learning tools and attitude towards e-Learning tools (58.6%). Fifty-six faculty members indicated they strongly agree that there is a relationship between exposure to e-Learning tools and attitude towards e-Learning tools (20.9%). Figure 5 represents the respondents' indications whether there is a relationship between exposure to e-Learning and attitude towards it.

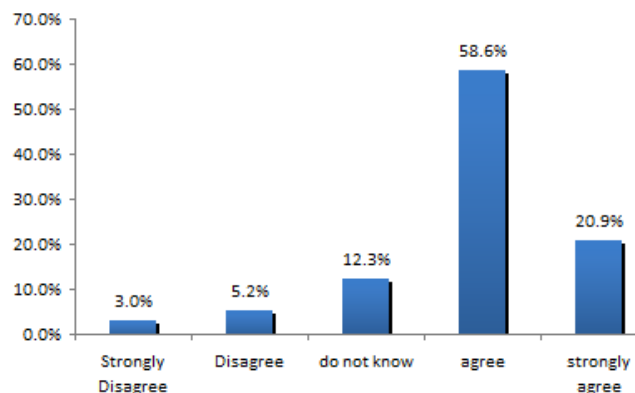


Figure 5. A relationship exists between exposure to e-learning and attitude towards it.

In a question about if there is a relationship between attitude towards the use of e-Learning and willingness to use e-Learning tools, five faculty members indicated they strongly disagree that there is a relationship between attitude towards the use of e-Learning and willingness to use e-Learning tools (1.9%). Sixteen faculty members indicated they disagree that there is a relationship between attitude towards the use of e-Learning and willingness to use e-Learning tools (6.0%). Thirty-three faculty members indicated they do not know whether there is a relationship between attitude towards the use of e-Learning and willingness to use e-Learning tools (12.3%). One hundred and sixty-one faculty members indicated they agree that there is a

relationship between attitude towards the use of e-Learning and willingness to use e-Learning tools (60.0%). Fifty-three faculty members indicated they strongly agree that there is a relationship between attitude towards the use of e-Learning and willingness to use e-Learning tools (19.8%). Figure 6 represents the respondents' indications whether there is a relationship between attitude towards the use of e-Learning and willingness or unwillingness to use it.

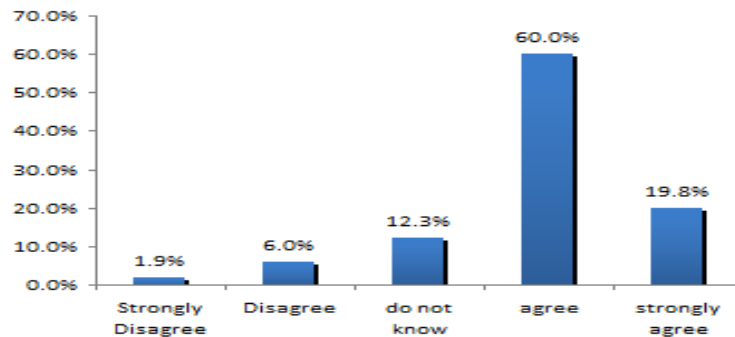


Figure 6. A relationship exists between attitude towards the use of e-learning and willingness to use it

In a question asked faculty about their attitudes and support towards the use of e-Learning tools in postsecondary education; only six faculty members indicated that he/she is highly resistant to using e-Learning (2.2%). Nine faculty members indicated that they resist using e-Learning (3.4%). Forty faculty members indicated that they have neutral feelings toward the use of e-Learning (14.9%). One hundred and forty-one faculty members indicated that they support using e-Learning (52.6%). Seventy-two faculty members indicated that they highly support using e-Learning (26.9%). Figure 7 represents the attitudes of the respondents' faculty members towards the use of e-Learning tools.

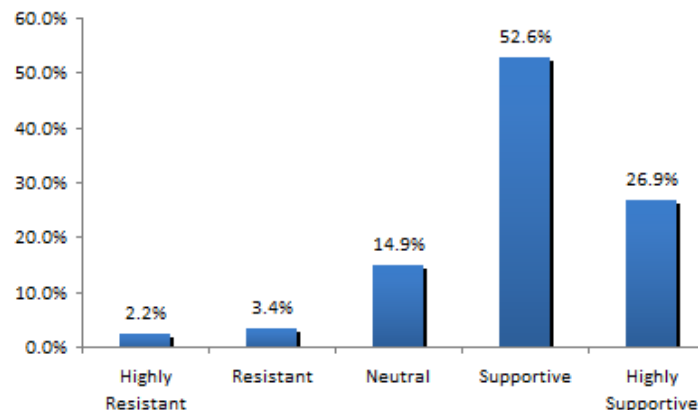


Figure 7. Faculty respondents' attitudes towards the use of e-learning tools

In a question asked about the classification of the e-Learning users, e-Learning faculty users versus e-Learning faculty non-users. One hundred and fifty-one faculty members classified themselves as e-Learning faculty users (56.3%), whereas 117 faculty members classified themselves as e-Learning faculty non-users (43.7%). Figure 8 shows faculty users versus non-users of e-Learning tools.

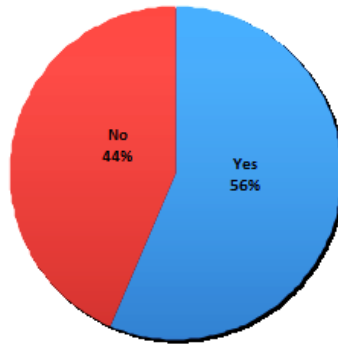


Figure 8. Faculty users and non-users of e-learning tools

General findings of survey research questions

Data from the completed surveys revealed that males participated (66.4%) more than females (33.6%); assistant professors (35.4%) were the majority among the participants in terms of faculty rank. The Faculty of Engineering and Technology (11.2%) was the majority among the faculties in this public university in terms of discipline. Blackboard (26.8%) was the most dominant e-Learning tool used at this public university. Faculty members who either have taught a course using e-Learning tools or currently are teaching a course using e-Learning tools (41.4%) were the majority among the participants. The majority of the participants (79.5%) either agree or strongly agree that there is a relationship between exposure to e-Learning tools and attitude toward e-Learning tools. The majority of the participants (79.8%) either agree or strongly agree that there is a relationship between attitude towards the use of e-Learning and willingness to use e-Learning tools. The attitude of the majority of the participants towards the use of e-Learning (79.5%) is either supportive or highly supportive. The number of e-Learning user participants (56.3%) was greater than e-Learning non-user participants (43.7%).

General findings regarding e-learning faculty non-users only

As mentioned earlier, survey questions 16 through 21 were directed toward those who never have used e-Learning tools at the UJ. Consequently, in response to the indicated questions, data from the completed surveys revealed that the majority of the e-Learning non-user participants ($n=117$) would be (a) interested in using e-Learning in the future, (b) willing to or interested in teaching a course that utilizes e-Learning tools in the future, and (c) interested in receiving training about the use of e-Learning in the future. Furthermore, e-Learning non-user participants indicated that the most major deterrents to their teaching a course that utilizes e-Learning tools in the future are they not interested in using e-Learning, they do not know enough about e-Learning tools to be comfortable utilizing it, and do not believe that e-Learning would be an effective teaching method for their field of teaching. These findings which related to the perceptions of e-Learning faculty non-users are illustrated in the following figures; Figures 9-12 respectively.

Figure 9 correspond to question 18 of the survey, which was for e-Learning faculty non-users only, asking whether they would be interested in using e-Learning tools in the future.

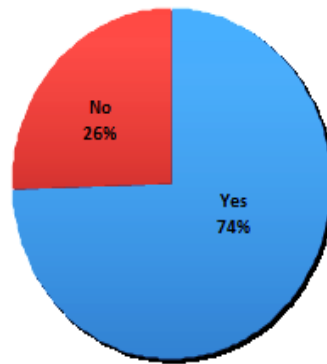


Figure 9. E-learning faculty non-users' interest in using or adopting e-learning in the future

Figure 10 correspond to question 19 of the survey, which was for e-Learning faculty non-users only, asking whether they would be willing to or be interested in teaching a course that utilizes e-Learning tools in the future.



Figure 10. E-learning faculty non-users' willingness to or interest in teaching a course that utilizes e-learning tools in the future

Figure 11 correspond to question 20 of the survey, which was for e-Learning faculty non-users only, asking whether they would be interested in receiving training about the use of e-Learning tools in the future.



Figure 11. E-learning faculty non-users' interest in receiving training about the use of e-learning in the future

Figure 12 correspond to question 21 of the survey, which was for e-Learning faculty non-users only, asking what would the major deterrent to their decision to teach a course that utilizes e-Learning tools in the future.

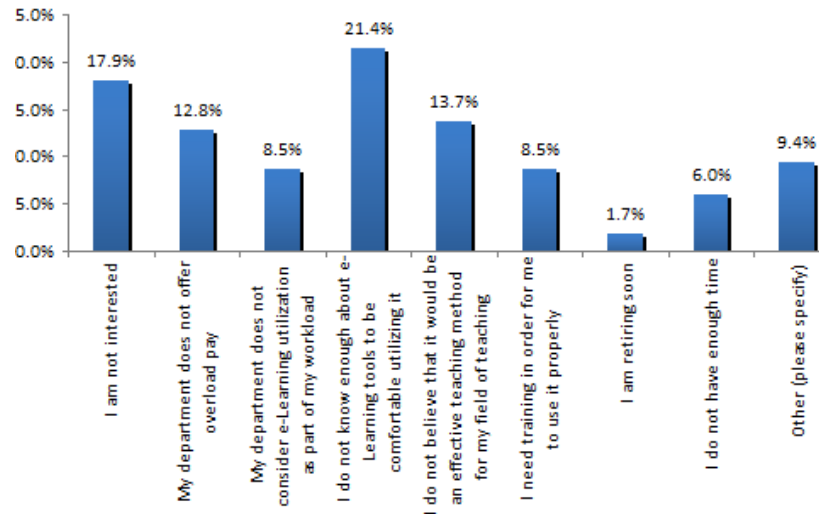


Figure 12. E-learning faculty non-users' major deterrent to teach a course utilizing e-learning tools in the future

General findings regarding e-learning faculty users and non-users

As mentioned earlier, survey questions 22 through 39 were directed to all respondents of the study; that is, those who use e-Learning tools and who never have used e-Learning tools at the UJ (e-Learning faculty users and non-users). Nevertheless, most participants, e-Learning faculty users and non-users ($N=268$), were generally positive in their perceptions of e-Learning at this Jordanian academic institution. Figure 13 correspond to question 22 of the survey which asked about how faculty members, overall, perceive the use of e-Learning tools.

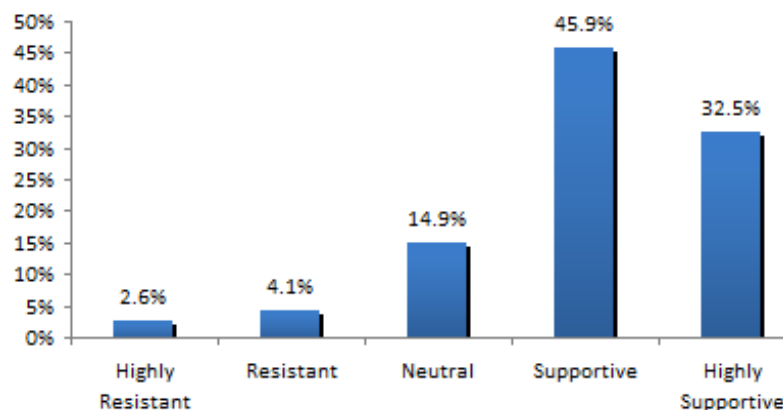


Figure 13. E-learning faculty users and non-users' perceptions of the use of e-learning

In a question (23) asked if the nature of the courses faculty members are teaching influences their decision about whether or not to use e-Learning tools, one hundred and seventy faculty members (63.4%) indicated that the nature of the courses they are teaching influences their decision about whether or not to use e-Learning tools, while ninety-eight faculty members (36.6%) indicated that the nature of the courses they are teaching does not influences their decision about whether or not to use e-Learning tools as shown in Figure 14.

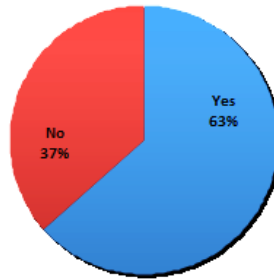


Figure 14. Does the nature of the courses that faculty members are teaching influence their decision about whether or not to use e-learning tools?

Figure 15 correspond to question 24 of the survey which asked whether faculty members will expand or intend to expand their use of e-Learning tools in the future.

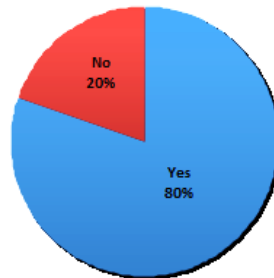


Figure 15. Do faculty members think that their use of e-learning, or their intention to use e-learning, will be expanded in the near future?

In a question (25) asked about what are or would be the major incentives for using e-Learning tools. E-Learning faculty users and non-users indicated that extra pay or overload assignment; extra time or in-load assignment; e-Learning sounds interesting; students would benefit from using e-Learning; interested in e-Learning use; trying to use e-Learning because it is a new method of instruction; being requested to use e-Learning; and other reasons are or would be the major incentives for using e-Learning tools. Some of these reasons as perceived by respondents are have no plan to use e-Learning; need training; e-Learning efficiency; save copying costs; convenience for communicating with large number of students; do not currently have teaching responsibility; provides opportunities for both greater usability and flexibility; time management; or ease of use.

Question 26 of the survey asked faculty members about how important it is to use e-Learning tools in their disciplines, one hundred and ninety-seven (73.5%) out of 268 participants indicated that it is important or very important to use e-Learning tools in their disciplines as shown in Figure 16.

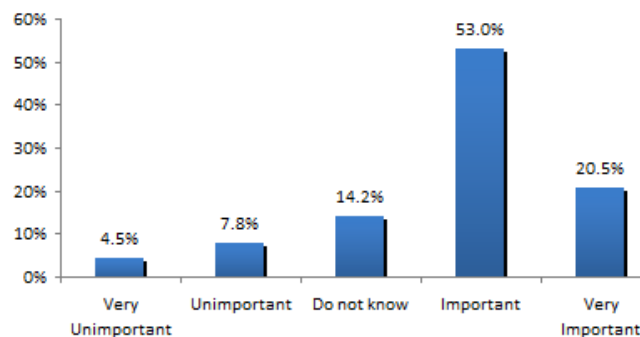


Figure 16. The importance of e-learning tools in the academic disciplines

In the question 27 of the survey, faculty members were asked to rate 1-5 (1-strongly disagree, 2-disagree, 3-do not know, 4-agree, 5-strongly agree) the extent to which they agree with the statements that were provided in the survey that related to the use of e-Learning tools. For details about these statements, see Appendix A. E-Learning faculty users' and non-users' responses to these statements are reported in Table 3.

Table 3
Survey question 27 results: faculty users and non-users' responses for the extent to which they agree with the provided statements in the survey (N=268)

Factor Number	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. Deviation
1	9 (3.4%)	34 (12.7%)	32 (11.9%)	144 (53.7%)	49 (18.3%)	3.71	1.015
2	4 (1.5%)	12 (4.5%)	17 (6.3%)	171 (63.8%)	64 (23.9%)	4.04	0.785
3	8 (3.0%)	36 (13.4%)	49 (18.3%)	146 (54.5%)	29 (10.8%)	3.57	0.956
4	5 (1.9%)	22 (8.2%)	21 (7.8%)	170 (63.4%)	50 (18.7%)	3.89	0.867
5	5 (1.9%)	13 (4.9%)	18 (6.7%)	178 (66.4%)	54 (20.1%)	3.98	0.795
6	46 (17.2%)	128 (47.8%)	36 (13.4%)	44 (16.4%)	14 (5.2%)	2.45	1.112
7	4 (1.5%)	23 (8.6%)	14 (5.2%)	181 (67.5%)	46 (17.2%)	3.90	0.833
8	8 (3.0%)	21 (7.8%)	25 (9.3%)	169 (63.1%)	45 (16.8%)	3.83	0.904
9	5 (1.9%)	8 (3.0%)	19 (7.1%)	166 (61.9%)	70 (26.1%)	4.07	0.785
10	8 (3.0%)	29 (10.8%)	34 (12.7%)	153 (57.1%)	44 (16.4%)	3.73	0.961
11	3 (1.1%)	12 (4.5%)	11 (4.1%)	177 (66.0%)	65 (24.3%)	4.08	0.748
12	25 (9.3%)	102 (38.0%)	60 (22.4%)	68 (25.4%)	13 (4.9%)	2.78	1.077
13	8 (3.0%)	38 (14.2%)	30 (11.2%)	144 (53.7%)	48 (17.9%)	3.69	1.018
14	4 (1.5%)	12 (4.5%)	23 (8.6%)	156 (58.2%)	73 (27.2%)	4.05	0.819
15	26 (9.7%)	97 (36.2%)	48 (17.9%)	76 (28.4%)	21 (7.8%)	2.88	1.157
16	15 (5.6%)	63 (23.5%)	42 (15.7%)	113 (42.2%)	35 (13.0%)	3.34	1.138
17	27 (10.1%)	94 (35.1%)	43 (16.0%)	74 (27.6%)	30 (11.2%)	2.95	1.217

Note: Whole number is row count and number in parenthesis is the percentage.

In this question, the respondents indicated that they agree or strongly agree most with statements 11, 9, 14, 2, 5, 7, 4, 8, 10, 1, and 13 respectively. In that order, these statements are as follows: combining e-Learning tools with traditional instruction is useful for the learning process; e-Learning tools offer more opportunities and experiences for learning compared to traditional instruction; time commitment is a major concern for preparing, delivery, and revision of courses that utilize e-Learning tools; e-Learning is positively related to teaching and the learning process; e-Learning could be a useful tool for supporting traditional methods of teaching; regardless of technological improvements, e-Learning tools will not be as effective as traditional instructional tools; e-Learning could effectively serve students with different backgrounds; e-Learning tools are supplementary tools for traditional instruction; e-Learning can be a more stimulating method of teaching than traditional instruction; faculty members should have loads lightened to make more time available for implementing e-Learning; and lack of technical knowledge is a major concern when deciding to use e-Learning tools.

In survey question 28, the participants were asked whether their departments are currently utilizing e-Learning; 120 faculty members indicated that their departments are currently utilizing

e-Learning tools (44.8%), whereas 148 faculty members indicated that their departments are not currently utilizing e-Learning tools (55.2%) as shown in Figure 17.

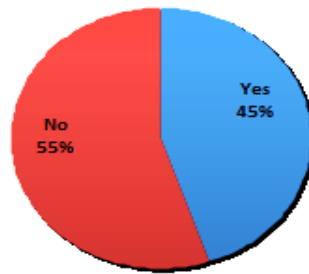


Figure 17. Does the academic department currently utilizing e-learning?

Survey question 29 asked if faculty think e-Learning tools could be employed effectively by their departments. One hundred and seventy-four faculty members indicated that e-Learning tools could be employed effectively by their departments (65.0%). Thirty-six faculty members indicated that e-Learning tools could not be employed effectively by their departments (13.4%). Fifty-Eight faculty members indicated that they do not know whether e-Learning tools could be employed effectively by their departments (21.6%) as shown in Figure 18.

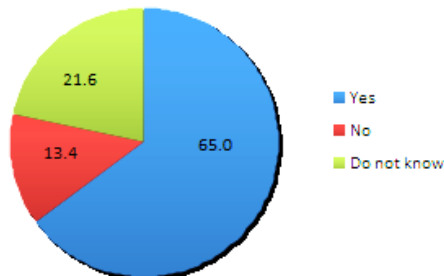


Figure 18. Do e-learning tools could be employed effectively by the department?

In survey question 30, faculty members were asked if their departments have plans to initiate or increase the use of e-Learning in the next academic year. Sixty-one faculty members indicated that their departments have plans to initiate or increase the use of e-Learning in the next academic year (22.8%). One Hundred and eight faculty members indicated that their departments do not have plans to initiate or increase the use of e-Learning in the next academic year (40.3%). Ninety-nine faculty members indicated that they do not know whether their departments have plans to initiate or increase the use of e-Learning in the next academic year (36.9%) as shown in Figure 19.

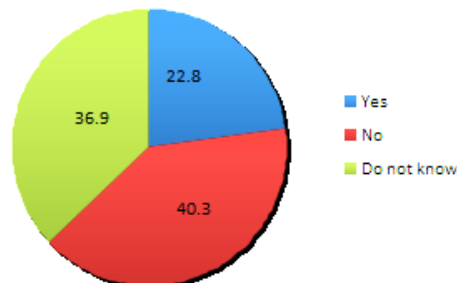


Figure 19. Does the academic department have plans to initiate or increase the use of e-learning in the next academic year?

In a question (31) asked if faculty have been asked to teach a course that utilizes e-Learning. Ninety-one faculty members indicated that they have been asked to teach a course that utilizes e-

Learning (34.0%). One hundred and seventy-seven faculty members indicated that they have not been asked to teach a course that utilizes e-Learning (66.0%) as shown in Figure 20.

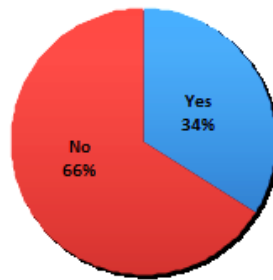


Figure 20. Teach a course that utilizes e-learning

Survey question 32 asked if faculty members have been asked to attend a training session about e-Learning use. Ninety-four faculty members indicated that they have been asked to attend a training session about e-Learning use (35.1%). One hundred and seventy-four faculty members indicated that they have not been asked to attend a training session about e-Learning use (64.9%) as shown in Figure 21.

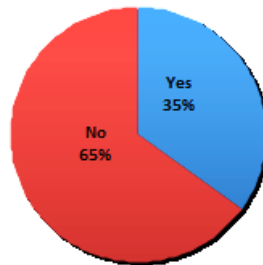


Figure 21. Attend a training session about e-learning use

In survey question 33, faculty members were asked whether they received any formal training at their academic institution regarding the use of e-Learning. Eighty-four faculty members indicated that they have received formal training at their academic institution regarding the use of e-Learning (31.3%). One hundred and eighty-four faculty members indicated that they have not received any formal training at their academic institution regarding the use of e-Learning (68.7%) as shown in Figure 22.

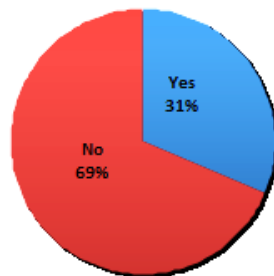


Figure 22. Receive a formal training regarding the use of e-learning

Survey question 34 was related to survey question 33; respondents who answered yes to Question 33 were then asked whether they thought the received formal training regarding the use of e-Learning was adequate. Eighty-four faculty members answered yes to the survey question (33) and 184 answered no ($n=84$ for this question). Seventy-one faculty members (out of 84 who responded to this question) indicated that the formal training they received regarding the use of

e-Learning was adequate (85.0%), whereas 13 faculty members indicated that the formal training they received regarding the use of e-Learning was not adequate (15.0%) as shown in Figure 23.



Figure 23. Receive adequate training regarding the use of e-learning

In survey question 35, participants were asked if their university should reward faculty who use e-Learning in a different way than faculty who do not use e-Learning. One hundred and sixty-nine faculty members indicated that their university should reward faculty who use e-Learning in a different way than faculty who do not use e-Learning (63.1%). Ninety-nine faculty members indicated that their university should not reward faculty who use e-Learning in a different way than faculty who do not use e-Learning (36.9%) as shown in Figure 24.

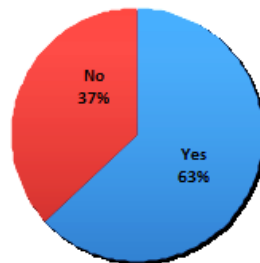


Figure 24. The university should reward faculty member who use e-learning

In survey question 36, participants were asked whether they would be interested in faculty development programs that focus on the use of e-Learning training. Two hundred and fourteen faculty members indicated that they would be interested in faculty development programs that focus on the use of e-Learning training (79.9%). Fifty-four faculty members indicated that they would not be interested in faculty development programs that focus on the use of e-Learning training (20.1%) as shown in Figure 25.

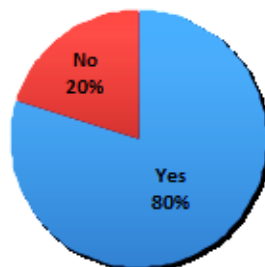


Figure 25. Participate in faculty development programs that focus on the use of e-learning training

Faculty members were asked, in survey question 37, whether they believe there is pressure on them to use e-Learning tools. Sixty-six faculty members indicated that they do believe there is a pressure on them to use e-Learning tools (24.6%). Two hundred and two faculty members indicated that they do not believe there is a pressure on them to use e-Learning tools (75.4%) as shown in Figure 26.

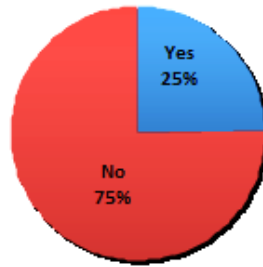


Figure 26. Pressure to use e-learning tools

In survey question 38, faculty members were asked how they rate the administrative support and the technical and pedagogical training that is available to them at their academic institution which related to the utilization of e-Learning tools. Thirty-seven faculty members indicated that the administrative support and the technical and pedagogical training that is available to them at their academic institution is very inadequate (13.8%). Sixty-four faculty members indicated that the administrative support and the technical and pedagogical training that is available to them at their academic institution is inadequate (23.9%). Seventy-one faculty members indicated that they do not know whether the administrative support and the technical and pedagogical training that is available to them at their academic institution is adequate or not (26.5%). Seventy-four faculty members indicated that the administrative support and the technical and pedagogical training that is available to them at their academic institution is adequate (27.6%). Twenty-two faculty members indicated that the administrative support and the technical and pedagogical training that is available to them at their academic institution is very adequate (8.2%). Figure 27 reflects the perceptions of faculty members towards the administrative support and the technical and pedagogical training that is available to them; which provided by their academic institution.

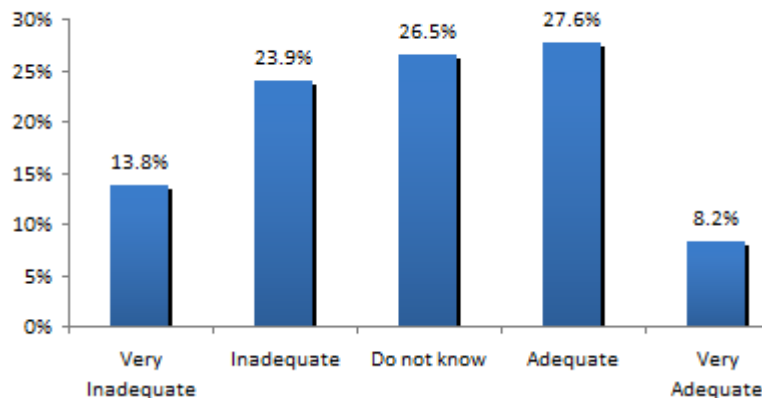


Figure 27. The administrative support and the technical and pedagogical training that is provided to the faculty members

In survey question 39, faculty members were asked to rate on a 1-5 scale (1-strongly disagree, 2-disagree, 3-do not know, 4-agree, 5-strongly agree) the extent to which they agree with the statements that were provided in the survey that related to the administrative support and the technical and pedagogical training regarding the use of e-Learning tools. For details about these statements see Appendix B. Table 4 presents e-Learning faculty users' and non-users' responses for these statements.

Table 4
Survey question 39 results: faculty users and non-users' responses for the extent to which they agree with the provided statements in the survey (N=268)

Factor Number	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. Deviation
1	25 (9.3%)	91 (34.0%)	59 (22.0%)	70 (26.1%)	23 (8.6%)	2.91	1.146
2	11 (4.1%)	31 (11.6%)	48 (17.9%)	143 (53.4%)	35 (13.0%)	3.60	0.991
3	9 (3.4%)	40 (14.9%)	39 (14.6%)	121 (45.1%)	59 (22.8%)	3.68	1.079
4	7 (2.6%)	33 (12.3%)	31 (11.6%)	136 (50.7%)	61 (22.8%)	3.79	1.015
5	6 (2.2%)	20 (7.5%)	22 (8.2%)	137 (51.1%)	83 (31.0%)	4.01	0.946

Note: Whole number is row count and number in parenthesis is the percentage.

Referring to Table 4, the data reveal that the majority of the participants indicated that they agree with all of the provided statements except the first statement. In other words, faculty members agree that (a) Lack of clear institutional policies on the use of e-Learning tools affects its use by faculty members; (b) Lack of institutional incentives is an obstacle to using e-Learning tools; (c) E-Learning tools is difficult to utilize without a proper training; and (d) Adequate institutional support is a major concern in adopting and using e-Learning tools. Whereas, faculty members indicated that they disagree with statement one which states "My department does not encourage faculty to develop courses that utilize e-Learning tools". Figure 28 represents faculty members' perceptions on each statement in question 39 Appendix B, concerning the administrative support and the technical and pedagogical training regarding the use of e-Learning tools.

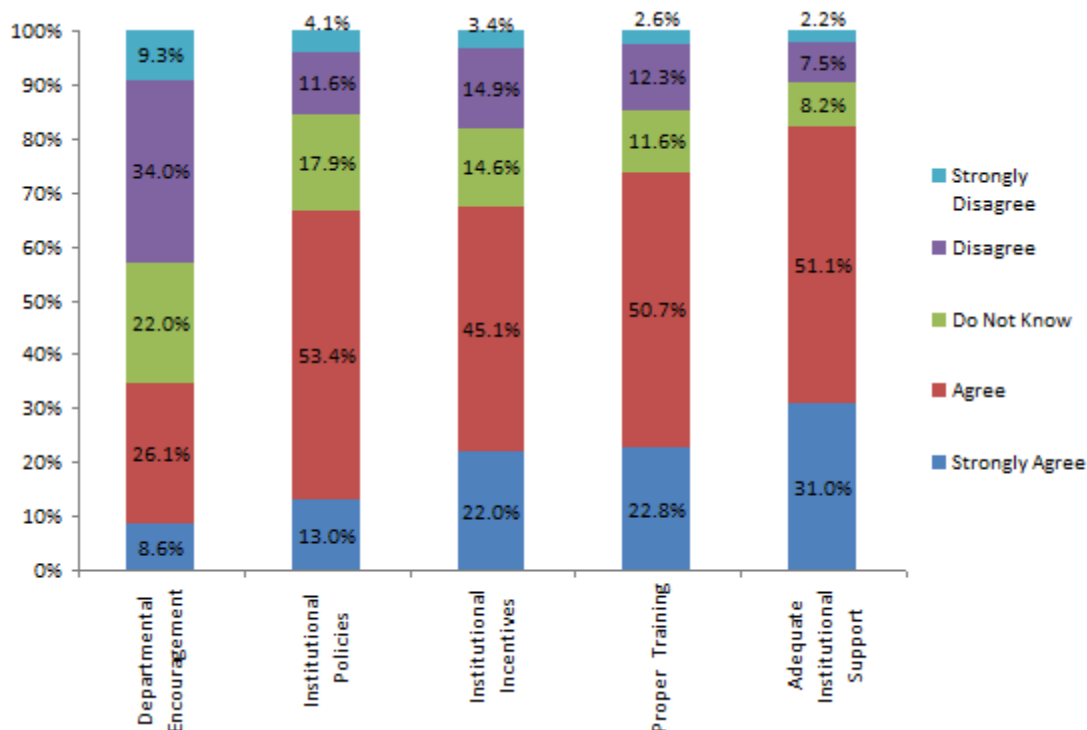


Figure 28. Faculty members' perceptions towards the institutional encouragement, policies, incentives, training, and support to utilize e-learning tools

Discussion

For the purpose of this study, three major research questions were investigated: (a) what are faculty members' perceptions and attitudes towards the use of e-Learning at their higher education institution; (b) what are higher education faculty members' major concerns regarding e-Learning use; and (c) what do higher education faculty members (users and non-users) believe their academic institution can do to improve the utilization of e-Learning at its campus. The discussion of the findings of these research questions are presented below.

Discussion of research question one findings

This question sought to reveal the perceptions and attitudes of faculty members towards the use of e-Learning tools at the UJ. A total of 268 respondents completed the survey; 151 were e-Learning faculty users (56.3%) and 117 were e-Learning faculty non-users (43.7%). Therefore, it can be concluded that the number of e-Learning user participants was greater than e-Learning non-user participants. Data from the completed surveys revealed that more than half of non-user participants are (a) interested in using e-Learning tools in the future (74.4%), (b) willing or interested in teaching a course that utilizes e-Learning tools in the future (72.6%), and (c) interested in receiving training about the use of e-Learning tools in the future (70.1%).

Also, results from the completed surveys revealed that the majority of the participants (78.5%), overall, were either supportive or highly supportive toward the use of e-Learning tools at this Jordanian academic institution; this means that faculty users and non-users were generally positive in their perceptions of e-Learning. Additionally, the results revealed that the majority of the participants (63.4%) indicated that the nature of the courses that they are teaching influences their decision about whether or not to use e-Learning tools. The majority of the participants (80.2%) indicated that their use or intention to use e-Learning will be expanded in the near future. The majority of the participants (73.5%) indicated either it is important or very important to use e-Learning tools in their disciplines. The majority of the participants (51.9%) indicated that the major incentive for using e-Learning, or for using e-Learning in the future, is that students would be benefit from using e-Learning tools.

Furthermore, more than half of the participants indicated that their departments are not currently utilizing e-Learning tools (55.2%). Therefore, it can be concluded that only less than half of the participants' departments are currently utilizing e-Learning. This means that e-Learning tools are currently integrated into instruction at this Jordanian university to its moderate use.

In short, data from the completed surveys revealed that the majority of the e-Learning user participants generally perceive e-Learning as a positive force in helping students' achieve their learning objectives. Whereas, completed surveys indicated that the majority of the e-Learning non-user participants verify that if they perceive some benefit to their using of e-Learning tools in instruction, they will likely be more motivated to adopt such technology in the near future. Overall, faculty users and non-users were generally positive in their perceptions of e-Learning at this Jordanian academic institution.

In addition, the participants of the study ($N=268$) perceived that e-Learning delivery tools for instruction are not a replacement for traditional face-to-face instruction but are additional tools for teaching practices. They affirmed that e-Learning must be used to enhance the educational experience, not to overpower or replace it.

Discussion of research question two findings

This question sought to reveal the major concerns that faculty members have about the use of e-Learning tools. Referring to Tables 3 and 4, data from the completed surveys revealed that the following are some of the concerns that faculty members have (e-Learning users and non-users agree or strongly agree):

- Faculty workload: the majority of the participants (72.0%) indicated that faculty members should have teaching loads lightened to make more time available for implementing e-Learning tools.
- Release time: the majority of the participants (85.4%) indicated that time commitment is a major concern for preparing, delivery, and revision of courses that utilize e-Learning tools.
- The majority of the respondents (65.3%) indicated that there is limited reliable information concerning the effectiveness of e-Learning tools.
- The majority of the respondents (88.0%) indicated that training in the use of e-Learning tools is important; they reported that e-Learning is difficult to utilize without the proper training.
- The majority of the respondents (71.6%) indicated that lack of technical knowledge is a major concern when deciding to use e-Learning tools.
- The majority of the respondents (55.3%) indicated that e-Learning delivery tools are not appropriate for all courses or disciplines.
- The majority of the respondents (66.5%) indicated that lack of clear institutional policies on the use of e-Learning tools affects its use by faculty members.
- The majority of the respondents (67.1%) indicated that lack of institutional incentives is an obstacle to using e-Learning tools.
- The majority of the respondents (82.1%) indicated that adequate institutional support is a major concern in using e-Learning tools.

As mentioned earlier, the findings revealed that the majority of the participants (79.5%) indicated they agree or strongly agree that there is a relationship between perceived use of e-Learning and the level of faculty member use of e-Learning; faculty subjects who have positive attitudes toward e-Learning tend to use e-Learning more. Therefore, taking a close look at these concerns is important when faculty development directors intend to overcome the barriers and obstacles to e-Learning utilization in higher education institutions.

In summary, data from the completed surveys revealed that lack of incentives for using e-Learning in instruction was a major concern or issue related to the level of faculty use of e-Learning tools in this study. This confirmed by the reviewed literature; several studies imply clearly that institutional incentives, support, and encouragement are essential issues for successful implementation of new technology in higher education settings.

Discussion of research question three findings

This question sought to reveal what academic institution can do to improve the utilization of e-Learning at its campus based on the opinions of e-Learning faculty users and non-users. Referring to Tables 3 and 4, data from the completed surveys revealed that the majority of the faculty member respondents indicated that their academic institution should do following regarding the utilization of e-Learning:

1. Offer more training sessions in the use of e-Learning tools; because it was noted that e-Learning training is both necessary and important, even though the e-Learning training at this Jordanian university was sufficient (85.0%).
2. Offer workshops concerning the technical issues in using e-Learning tools.
3. Reduce teaching loads to make more time available for employing e-Learning tools, to develop courses that utilize e-Learning tools, and to engage in e-Learning training.
4. Offer rewards for using e-Learning tools.

5. Offer adequate administrative encouragement and support concerning the use of e-Learning tools.
6. Offer incentives for using e-Learning, such as credit toward promotion and tenure, and recognition from the administration.

In summary, the majority of the participants verified that this Jordanian academic institution should offer valued incentives, which could be in various forms – release time, supplemental pay, reduced faculty load, etc, in order to promote and encourage faculty members to use e-Learning tools. However, since the reviewed literature indicated that there is a relationship between academic institutional support and the level of faculty use of e-Learning; that is, the more the academic institutional support, the more likely the faculty members are to use e-Learning; as well as to recruit and maintain motivated faculty members to use e-Learning, the academic institutions should offer valued incentives, eliminate obstacles, and provide equitable rewards for utilizing e-Learning tools in instruction.

Like all technology, e-Learning tools have their own advantages and disadvantages. However, the success of e-Learning implementation rests on the willingness of faculty members to use such technology and the institutional support provided to faculty members (Gammill, 2004).

Conclusions, implications, and recommendations for future research

Conclusions

E-Learning systems have become popular tools for teaching and learning; e-Learning has grown significantly over the last decade to become a significant mode of instruction in higher education (Curran, 2004). Advanced e-Learning systems, such as Blackboard, Moodle, and self-created Web-based open source tools have been developed recently that integrate a variety of functions (Pituch & Lee, 2006). Such systems provide a variety of instructional aids and communication methods, and offer learners great flexibility as to the time and place of instruction. As a result, these e-Learning systems may better accommodate the needs of learners who are geographically dispersed and have conflicting schedules. Given these advantages, it is not surprising that educational institutions are making substantial investments in e-Learning systems. Hence, this study identified prevalent faculty members' perceptions and attitudes towards the use of e-Learning tools in higher education at one Jordanian university, determined faculty members' major concerns regarding e-Learning use, and probed what one academic institution can do to improve the utilization of e-Learning at its campus. Specifically, this study aimed to determine the perceived barriers and solutions to the utilization of e-Learning in higher education in Jordan.

The systematic review of the literature identified important issues which need to be in place for e-Learning to effectively take place. The barriers and potential solutions identified are useful for those designing e-Learning programs in any professional context. The summary of findings and results point to several requirements for e-Learning success: national standards and strategies; curriculum integration; change management; flexible programming; skills training; and support and access to technology for administrators, instructors, and learners. The author of the article believes that educational technology specialists play an important role in e-Learning adaptation and utilization in academic settings and identify several areas in which educational technology specialists can contribute.

This study revealed several major findings regarding faculty members' perceptions and attitudes towards the use of e-Learning in higher education. Several major conclusions emerge from this study:

1. Perceptions and attitudes towards the use of e-Learning tools vary across the faculty at this Jordanian university.

2. Perceptions and attitudes towards the use of e-Learning tools are influenced by several issues; the most important concerns are receiving a recognition/reward from the administration, administrative encouragement and support, release time, teaching workload, and training in the use of e-Learning.
3. More than half of e-Learning faculty non-user participants are interested in using e-Learning tools in the future, and half of e-Learning faculty non-user participants are willing or interested in teaching a course that utilizes e-Learning tools in the future.
4. E-Learning tools are currently integrated into instruction at this Jordanian university to its moderate use.
5. Faculty participants indicated that lack of institutional incentives is an obstacle to using e-Learning tools, e-Learning is difficult to utilize without the proper training, and adequate institutional support are major concerns in utilizing e-Learning tools.
6. Faculty participants, regardless of attitude, indicated that e-Learning training for faculty who utilize or would utilize e-Learning tools is both necessary and important.

Based on these conclusions, three themes emerged: (a) faculty members need financial incentives, rewards systems, administrative recognition to encourage them to use e-Learning tools; (b) faculty members need training, technical assistance, and institutional support to enable them to use e-Learning tools; and (c) faculty members need more information about the effectiveness of e-Learning tools for instruction.

Implications

The study findings have implications for the administration of this Jordanian university and may provide areas of consideration for educators in other higher education institutions and, specifically, for e-Learning practitioners (users and non-users) in higher education. The findings imply that personal experience with e-Learning tools is an influential factor in individuals' attitudes toward e-Learning use. If e-Learning diffusion strategies and efforts are to be promoted and expanded, it is important that faculty members are provided with the opportunity to engage in a positive e-Learning use experience. This may be accomplished in several ways:

1. Define what obstacles need to be overcome to ensure the success of e-Learning use in higher education environments. Also provide adequate training for faculty who utilize or would utilize a course using e-Learning tools; such training opportunities should be publicized. This is important because training in e-Learning use is essential to encourage higher levels of faculty use and more effective uses of the technology.
2. Provide institutional encouragement, support, and incentives for faculty members who desire to use e-Learning tools.
3. Encourage and reward faculty for exemplar uses of e-Learning tools to support instruction. Also reduce the faculty workload and provide faculty with more time to develop and use e-Learning tools.
4. Offer a hands-on learning experience to faculty who express a desire to use e-Learning tools; such learning experience could be included as part of the introductory tour provided by institutions to all incoming faculty members.
5. Create university-level policies on the use of e-Learning tools for this Jordanian university and establish college-level policies on the use of e-Learning tools for each of the nineteen faculties at this university. According to the reviewed literature, institutional policies on the use of e-Learning tools are important in attracting and retaining faculty to participate in the use of e-Learning tools.
6. Provide a comprehensive e-Learning program to combat the resistant perceptions and attitudes of e-Learning faculty non-users. To implement e-Learning tools, faculty must

perceive that using e-Learning has a relative advantage over not using e-Learning. Therefore, faculty development programs should make faculty aware of the many advantages of e-Learning, such as convenience, flexibility, accessibility, and cost-effectiveness.

7. Encourage appropriate assessment and evaluation of the impact of e-Learning tools on the teaching and learning process because the cost of technology and time needed to learn how to use such tools properly are critical for academic institutions.
8. Provide release time or reduce teaching load for faculty who use e-Learning tools in their classes.

Recommendations for future research

The results from this study suggest several areas for future research:

1. Further research is needed to determine whether these perceptions and attitudes towards the use of e-Learning that determined from the surveys returned are correct.
2. Conduct a similar study at different academic institutions to examine the identified issues and concerns related to faculty members' perceptions and attitudes towards the use of e-Learning tools.
3. Conduct a study from the students' perspective that will be useful to identify additional constructs that would account for faculty's perceptions and attitudes towards the use of e-Learning tools.
4. Conduct a study to examine the level of faculty use of e-Learning tools within each individual faculty/college (Humanities Faculties, Scientific Faculties, and Health Faculties) at this Jordanian university.
5. Conduct a study at private higher education institutions to identify how participation in the use of e-Learning tools compares to that of public higher education institutions.
6. Conduct a follow-up study with a select sample of the original respondents using a qualitative data collection method to verify the findings of this study.
7. Conduct a study to investigate the administrative leadership (University President, University Vice President, Deans of Faculties, and Departments' Chairmen) role in shaping and encouraging faculty use of e-Learning.

Should higher education institutions decide to become more involved in the use of e-Learning tools, then faculty participation as well as additional research will be essential. In short, the attitudes of both e-Learning faculty users and non-users towards the use of e-Learning tools in higher education institutions need further examination, since teaching innovations cannot succeed without their support (Clark, 1993). It is important to point out that this study is not meant to be the definitive word on faculty's perceptions and attitudes; rather, it is intended to encourage robust investigations into the issues related to faculty's perceptions and attitudes towards the use of e-Learning tools with more powerful treatments and greater sample sizes.

It is obvious that differences exist between the perceptions of e-Learning faculty users and non-users towards the use of e-Learning tools in higher education. Understanding these differences might go a long way toward helping institutions of higher education successfully integrate e-Learning tools into instruction. Also, understanding what truly motivates faculty members to use e-Learning tools in their teaching practices could help administrators in encouraging faculty members who have been reluctant to use such tools.

References

- Abdelzaher, A. (2009). *Faculty perceptions of teaching in undergraduate computer science education*. Unpublished Doctoral Dissertation, University of Virginia, Charlottesville, Virginia.
- Abouchedid, K., & Eid, G. (2004). E-learning challenges in the Arab world: Revelations from a case study profile. *Quality Assurance in Education*, 12(1), 15-27.
- Afshari, M., Bakar, K., Luan, W., Samah, B., & Fooi, F. (2009). Factors affecting teachers' use of information and communication technology. *International Journal of Instruction*, 2(1), 77-104.
- Al-Adwan, A., & Smedley, J. (2012). Implementing e-Learning in the Jordanian higher education system: Factors affecting impact. *International Journal of Education and Development Using Information and Communication Technology*, 8(1), 121-135.
- Albalawi, A. & Badawi, M. (2008). Teachers' perception of e-Learning at the University of Tabuk. In C. Bonk et al. (Eds.), *Proceedings of World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education*, 2008(1), (pp. 2434-2448). Las Vegas, Nevada.
- Alenezi, A. (2012). *Faculty members' perception of e-Learning in higher education in the Kingdom of Saudi Arabia (KSA)*. Unpublished Doctoral Dissertation, Texas Tech University, Lubbock, Texas, United States.
- Alkhatnai, M. (2009). Evaluating the use of e-Learning at KSU using the e-learning maturity model. In T. Bastiaens et al. (Eds.), *Proceedings of World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education* (pp. 809-818). Vancouver, Canada.
- Almarabeh, T. (2014). Students' perceptions of e-learning at The University of Jordan. *International Journal of Emerging Technologies in Learning (iJET)*, 9(3), 31-35.
- Almarabeh, T., & Mohammad, H. (2013). E-learning in the Jordanian higher education system: Strengths, weakness, opportunities, and threats. *Journal of American Science*, 9(3), 281-287.
- Alshangeeti, A., Alsaghier, H., & Nguyen, A. (2009). *Faculty perceptions of attributes affecting the diffusion of online learning in Saudi Arabia: A quantitative study*. Proceedings of the 4th International Conference on E-Learning (pp. 10-24), University of Toronto, Canada, 16-17 July.
- Al-Shboul, M. (2007). *Faculty attitudes and perceptions concerning the use of course management systems in higher education*. Unpublished Doctoral Dissertation, Northern Illinois University, DeKalb, Illinois.
- Al-Shboul, M., & Alsmadi, I. (2010). Challenges of utilizing e-Learning systems in public universities in Jordan. *International Journal of Emerging Technologies in Learning (iJET)*, 5(2), 4-10.
- Al-Shboul, M. (2011). Potential use of course management systems in higher education institutions in Jordan. *US-China Education Review*, 8(2), 220-232.
- Al-Shboul, M. (2013). The level of e-Learning integration at The University of Jordan: Challenges and opportunities. *International Education Studies*, 6(4), 93-113.
- Al-Shboul, M., Rababah, O., Rizik Al-Sayyed, D., Sweis, G., & Aldreabi, H. (2013). Roadmap to advance e-Learning management system at The University of Jordan. *Journal of American Science*, 9(1), 531-545.
- Al-Wehaibi, K., Al-Wabil, A., Alshawi, A. & Alshankity, Z. (2008). Barriers to internet adoption among faculty in Saudi Arabian universities. In J. Luca & E. Weippl (Eds.), *Proceedings of World Conference on Educational Multimedia, Hypermedia and Telecommunications*, 2008(1), (pp. 24-33). Vienna, Austria.
- Anderson, J. (2003). *Faculty perspectives of the blackboard course delivery system*. Paper presented at the Mid-South Educational Research Association (32nd, Biloxi, MS, November 5-7).
- Babić, S. (2012). Factors that influence academic teacher's acceptance of e-Learning technology in blended learning environment. Edited by Elvis Pontes, Anderson Silva, Adilson Guelfi, and Sérgio Takeo Kofuji, in *E-Learning Organizational Infrastructure and Tools for Specific Areas*. Retrieved April 14, 2014, from: <http://cdn.intechopen.com/pdfs-wm/28695.pdf>
- Baltaci-Goktalay, S., & Ocak, M. (2006). Faculty adoption of online technology in higher education. *The Turkish Online Journal of Educational Technology*, 5(4), 1-8.

- Benson, V., Anderson, D., & Ooms, A. (2011). Educators' perceptions, attitudes and practices: Blended learning in business and management education. *Research in Learning Technology*, 19(2), 143-154.
- Betts, K. (1998). An institutional overview: Factors influencing faculty participation in distance education in postsecondary education in the United States: An institutional study. *Online Journal of Distance Learning Administration*, 1(3), 1-13.
- Borstorff, P. & Lowe, S. (2007). Student perceptions and opinions toward e-Learning in the college environment. *Academy of Educational Leadership Journal*, 11(2), 13-29.
- Butler, D., & Sellbom, M. (2002). Barriers to adopting technology for teaching and learning. *Educause Quarterly*, 25(2), 22-28.
- Clark, T. (1993). Attitudes of higher education faculty toward distance education: A national survey. *The American Journal of Distance Education*, 7(2), 19-33.
- Cook, R., Ley, K., Crawford, C., & Warner, A. (2009). Motivators and inhibitors for university faculty in distance and e-Learning. *British Journal of Educational Technology*, 40(1), 149-163.
- Curran, C. (2004). *Strategies for e-Learning in universities*. University of California, Berkeley: Center for Studies in Higher Education. Retrieved May 9, 2014 from <https://escholarship.org/uc/item/78280303>
- Du Boulay, B., Coultas, J., Luckin, R., & Garnett, F. (2011). Factors determining the overall effectiveness of e-Learning systems used in higher education. In *Intelligent Tutoring Systems in E-learning Environments: Design, Implementation, and Evaluation*, 303-326.
- Ertmer, P. (1999). Addressing first-and second-order barriers to change: Strategies for technology integration. *Educational Technology Research and Development*, 47(4), 47-61.
- Fazlollahtabar, H., & Abbasi, A. (2012). A computer integrated framework for e-Learning control systems based on data flow diagrams. *Journal of Control Engineering and Technology*, 2(2), 97-105.
- Feeney, D. (2001). *Rates of adoption in a university course management system*. Unpublished Doctoral Dissertation, West Virginia University, Morgantown, West Virginia.
- Fredericksen, E., Pickett, A., Shea, P., Pelz, W., & Swan, K. (2000). Factors influencing faculty satisfaction with asynchronous teaching and learning in the SUNY learning network. *Journal of Asynchronous Learning Networks*, 4(3), 245-278.
- Gammill, T. (2004). *Factors associated with faculty use of web-based instruction in higher education*. Unpublished Doctoral Dissertation, Mississippi State University, Starkville, Mississippi.
- Georgouli, K., Skalkidis, I., & Guerreiro, P. (2008). A framework for adopting LMS to introduce e-Learning in a traditional course. *Educational Technology & Society*, 11(2), 227-240.
- Govender, D., & Dhurup, M. (2014). An exploratory factorial analysis of teachers' perceptions of perceived pedagogical benefits of adoption of information and communication technology in teaching and learning. *Mediterranean Journal of Social Sciences*, 5(20), 1214-1224.
- Harrington, T., Staffo, M., & Wright, V. (2006). Faculty uses of and attitudes toward a course management system in improving instruction. *Journal of Interactive Online Learning*, 5(2), 178-190.
- Hawkins, B., & Rudy, J. (2007). Educause core data service: Fiscal year 2006 summary report. Boulder, CO: Educause, 32-33. Retrieved July 15, 2014 from http://digital.library.okstate.edu/etd/Akour_okstate_0664D_10760.pdf
- Hussein, H. (2011). Attitudes of Saudi universities faculty members towards using learning management system (JUSUR). *The Turkish Online Journal of Educational Technology*, 10(2), 43-53.
- Irani, T., & Telg, R. (2007). Building it so they will come: Assessing universities' distance education faculty training and development programs. *The Journal of Distance Education*, 17(1), 36-46.
- Jamlan, M. (2004). Faculty opinions towards introducing e-Learning at the University of Bahrain. *The International Review of Research in Open and Distance Learning*, 5(2), 1-14.
- Kim, M. (2008). Factors influencing the acceptance of e-Learning courses for mainstream faculty in higher institutions. *International Journal of Instructional Technology and Distance Learning*, 5(2), 29-44.

- Lee-Post, A. (2009). E-Learning success model: An information systems perspective. *Electronic Journal of e-Learning*, 7(1), 61-70.
- Lee, S., & Lee, H. (2008). Professors' perceptions and needs on blended e-Learning. *Proceedings of the World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education*, 2008(1), (pp. 984-993). Las Vegas, Nevada, USA. Retrieved August 5, 2014 from <http://www.editlib.org/p/29737>
- Levin, T. & Wadmany, R. (2008). Teachers' views on factors affecting effective integration of information technology in the classroom: Developmental scenery. *Journal of Technology and Teacher Education*, 16(2), 233-263.
- Little-Wiles, J., Hundley, S., Worley, W., & Bauer, E. (2012). *Faculty perceptions and use of a learning management system at an urban, research institution*. In American Society for Engineering Education. Retrieved August 10, 2014 from <http://www.asee.org/public/conferences/8/papers/3818/download>
- Lonn, S., Teasley, S., & Krumm, A. (2009). *Investigating undergraduates' perceptions and use of a learning management system: A tale of two campuses*. Paper presented at the Annual Meeting of the American Educational Research Association (April 16th), San Diego, California. Retrieved June 6, 2014 from https://ctools.umich.edu/access/content/group/research/papers/Survey_FinalPaper_AERA09.pdf
- Lynch, D. (2002). Professors should embrace technology in courses. *Chronicle of Higher Education*, 48(19), B15-B18. Retrieved July 22, 2014 from: <http://chronicle.com/article/Professors-Should-Embrace/34437/>
- Majdalawi, Y., Almarabeh, T., & Mohammad, H. (2014). Factors affecting students' usage of learning management system at The University of Jordan. *Life Science Journal*, 11(6), 666-671.
- Meyer, K., & Xu, Y. (2009). A causal model of factors influencing faculty use of technology. *Journal of Asynchronous Learning Networks*, 13(2), 57-70.
- Morgan, G. (2003). *Faculty use of course management systems*. Educause Center for Applied Research. Retrieved August 23, 2014, from <http://net.educause.edu/ir/library/pdf/ERS0302/ekf0302.pdf>
- Muilenburg, L., & Berge, Z. (2001). Barriers to distance education: A factor-analytic study. *The American Journal of Distance Education*, 15(2), 7-22.
- Naidu, S. (2004). Trends in faculty use and perceptions of e-Learning. *Asian Journal of Distance Education*, 2(2), 1-8.
- Ndahi, H. (1999). Utilization of distance learning technology among industrial and technical teacher education faculty. *Journal of Industrial Teacher Education*, 36(4), 21-37.
- Nelson, J. (2003). *Integration of course management system communication tools in instruction*. Unpublished Doctoral Dissertation, University of Tennessee, Knoxville, Tennessee.
- Newton, R. (2003). Staff attitudes to the development and delivery of e-Learning. *New Library World*, 104(10), 412-425.
- O' Neill, K., Singh, G., & O' Donoghue, J. (2004). Implementing e-Learning programmes for higher education: A review of the literature. *Journal of Information Technology Education*, 3(1), 313-323.
- Ong, C., Lai, J., & Wang, Y. (2004). Factors affecting engineers' acceptance of asynchronous e-Learning systems in high-tech companies. *Information & management*, 41(6), 795-804.
- O'Quinn, L. (2002). *Factors that influence community college faculty participation in distance education*. Unpublished Doctoral Dissertation, George Washington University, Washington D.C.
- O'Quinn, L., & Corry, M. (2004). Faculty preferences for course delivery: Distance and traditional settings. *International Journal of Instructional Technology and Distance Learning*, 1(8), 17-35.
- Oravec, J. (2003). Some influences of online distance learning on US higher education. *Journal of Further and Higher Education*, 27(1), 89-103.
- Osika, E., Johnson, R., & Buteau, R. (2009). Factors influencing faculty use of technology in online instruction: A case study. *Online Journal of Distance Learning Administration*, 12(1), 13-24.

- Ozkan, S., & Koseler, R. (2009). Multi-dimensional students' evaluation of e-Learning systems in the higher education context: An empirical investigation. *Computers & Education*, 53(4), 1285-1296.
- Paechter, M., Maier, B., & Macher, D. (2010). Students' expectations of, and experiences in e-Learning: Their relation to learning achievements and course satisfaction. *Computers & Education*, 54(1), 222-229.
- Pituch, K., & Lee, Y. (2006). The influence of system characteristics on e-Learning use. *Computers & Education*, 47(2), 222-244.
- Reiser, R., & Dempsey, J. (2002). *Trends and issues in instructional design and technology*. Upper Saddle River, NY: Merrill Prentice Hall.
- Roca, J., Chiu, C., & Martínez, F. (2006). Understanding e-Learning continuance intention: An extension of the technology acceptance model. *International Journal of Human-Computer Studies*, 64(8), 683-696.
- Sahab, S. (2005). Starting e-Learning program at King Abdul-Aziz University in Saudi Arabia. In P. Kommers & G. Richards (Eds.), *Proceedings of World Conference on Educational Multimedia, Hypermedia and Telecommunications* (pp. 613-618). Montreal, Canada.
- Salmon, G. (2005). Flying not flapping: A strategic framework for e-Learning and pedagogical innovation in higher education institutions. *Research in Learning Technology*, 13(3), 201-218.
- Schifter, C. (2002). Perception differences about participating in distance education. *Online Journal of Distance Learning Administration*, 5(1), 1-15.
- Tomasegovic, T., Elias, P., Baracic, M., & Mrvac, N. (2011). E-Learning and evaluation in modern educational system. *US-China Education Review*, 8(2), 198-203.

About the author



Dr. Muhannad Al-Shboul is Associate Professor of e-Learning in the Department of Curriculum and Instruction, Faculty of Educational Sciences at the University of Jordan, Amman, Jordan. His primary research interests include e-Learning, Web-based Learning, Web Design, e-Government, Distance Learning, e-Content Development, Human Resources Development, and Educational Technology Utilizations in Higher Education. So far, he has published more than 19 articles in reputed International Journals related to his field of specialization, published two books in e-Learning, delivered many oral presentations at international educational conferences, and conducted several training sessions including faculty development, human resources management, leadership skills, and instructional design strategies. Dr. Al-Shboul received a M.S. in Computer Science from Northeastern Illinois University and a Ph.D. in Educational Technology from Northern Illinois University in the United States.

Contact Information: malshboul@ju.edu.jo

Appendix A

Survey Question 27: Rate the extent to which you agree with the following statements:

	Statements	Strongly Disagree 1	Disagree 2	Do not know 3	Agree 4	Strongly agree 5
1.	Faculty members should have loads lightened to make more time available for implementing e-Learning tools					
2.	E-Learning is positively related to teaching and the learning process					
3.	There is limited reliable information concerning the effectiveness of e-Learning tools					
4.	E-Learning tools could effectively serve students with different backgrounds					
5.	E-Learning could be a useful tool for supporting traditional methods of teaching					
6.	Opportunity for faculty training in the use of e-Learning tools is important					
7.	Regardless of technological improvements, e-Learning tools will not be as effective as traditional instructional tools					
8.	E-Learning tools are supplementary tools for traditional instruction					
9.	E-Learning tools offer more opportunities and experiences for learning compared to traditional instruction					
10.	E-Learning can be a more stimulating method of teaching than traditional instruction					
11.	Combining e-Learning tools with traditional instruction is useful for the learning process					
12.	Traditional classroom-based courses and e-Learning - based courses are given the same recognition					
13.	Lack of technical knowledge is a major concern when deciding to use e-Learning tools					
14.	Time commitment is a major concern for preparing, delivery, and revision of courses that utilize e-Learning tools					
15.	E-Learning instruction is at least as effective as face-to-face instruction					
16.	E-Learning delivery tools are not appropriate for all courses or disciplines					
17.	Teacher-student interaction is difficult when using e-Learning tools to deliver instruction					

Appendix B

Survey Question 39: Rate the extent to which you agree with the following statements:

	Statements	Strongly Disagree 1	Disagree 2	Do not know 3	Agree 4	Strongly agree 5
1.	My department does not encourage faculty to develop courses that utilize e-Learning tools					
2.	Lack of clear institutional policies on the use of e-Learning tools affects its use by faculty					
3.	Lack of institutional incentives is an obstacle to using e-Learning tools					
4.	E-Learning is difficult to utilize without the proper training					
5.	Adequate institutional support is a major concern in adopting e-Learning use					

[Return to Table of Contents](#)

Editor's Note: This study provided valuable information regarding the readiness and acceptance of students for mobile learning.

Students' behavioral intention toward adoption of mobile learning in higher education

Joongkak Kook
Republic of Korea

Abstract

The objective of this research is to better understand college students' perceptions of mobile learning (m-learning) and to investigate the factors that affect their behavioral intentions to use m-learning, targeting higher education students in Korea. This paper describes the results of a survey of 276 students about their attitude and perception toward the use of m-learning, especially focusing on identifying the factors that affect their behavioral intention to use m-learning and testing the proposed hypotheses.

Keywords: mobile learning (m-learning), mobile technology, TAM, student's perception, student's behavioral intention, higher education.

Introduction

Within the last ten years, mobile and wireless technologies have offered cheaper and more convenient communication. Students as well as general users can access information and communicate with one another anytime, anywhere, individually and ubiquitously, by using various mobile devices. Mobile learning (m-learning) is a method of using wireless and mobile technologies in education. As mobile technology becomes increasingly widespread, it is likely to offer various learning opportunities. Thus, mobile experts and educational technologists predict that the evolution and advancement of mobile technology will continue to accelerate in learning and education. As a result, m-learning has become a critical component in developing learning strategies for use in higher education. By using strategies that incorporate m-learning, we may achieve better outputs from classes.

Recently, many studies have brought into focus m-learning and its environment, such as users' acceptance of the m-learning environment, the setting for m-learning, and the implementation of m-learning in many countries. The adoption of m-learning should be explored on a case by case basis, as it is not the same in all countries.

Currently, m-learning in Korea is not established enough to be easily adopted. It is a new stage in the development of distance learning. As such, it is not yet familiar to students and instructors on college campuses, and it is still in the early stage of development. Few universities have established m-learning in their learning environment. Naturally, it is assumed that slow movement toward m-learning comes with a high cost of investment, which university administrators must consider carefully. Another major consideration is the decision about when to invest or not invest in m-learning. All of these factors can affect the implementation of m-learning at colleges. Even so, in anticipation of future investment in m-learning within education, we hope that this study will lead to a better understanding of students' acceptance of the m-learning environment (Park et al., 2012; Jairak et al., 2009).

This paper is structured as follows. First, a literature review that explains the theoretical background and predicts acceptance of applications of new technology, such as m-learning. Second, the research methodology, including the questionnaire, hypotheses, and measurement instrument. Third, the data analysis, and finally, the results and conclusions of this study.

Theoretical background of mobile learning in higher education

Many theories and models have addressed the acceptance of new technology, which has been widely studied. Among the many models, the literature review presents information suggesting that the Technology Acceptance Model (TAM) is a solid theoretical model whose validity can extend to the m-learning context. The review also emphasizes the robustness of TAM and its extensions, as the results of some studies generally support TAM findings. Accordingly, the authors made appropriate adaptations to the TAM to reflect the research objectives and contextual realities in this study (Davis, 1989). TAM is referred to representatively in the theoretical background.

First, TAM provides a theoretical background that predicts and explains the user's behavioral intention or acceptance of new technology use, such as m-learning. TAM was developed by Davis (1989). It is one of the most widely employed models of individual acceptance and use of new technologies. It predicts the use and acceptance of information systems and technology by individual users. The model was initially developed and tested in the 1980s. As shown in Figure 1, it is based on the theory of reasoned action and is aimed at predicting users' acceptance of a certain information system (Davis et al., 1989). TAM assumes some constructs as follows. The actual use of the computer system is determined by a users' behavioral intention to use it; users' behavioral intention to use it is determined by their attitude toward using it and its perceived usefulness; users' attitude toward using it is determined by its perceived usefulness and perceived ease of use; and the perceived ease of use affects the perceived usefulness, which also mediates the effect of perceived ease of use on attitude toward using (Davis et al., 1989). Furthermore, TAM assumes, as shown in Figure 1, that external variables affect the perceived usefulness and perceived ease of use of the system, which also mediate the effect of external variables on users' attitude toward using it. Thus, TAM provides a basis for relationships among external variables, beliefs, attitudes, intention to use, and actual use (Davis et al., 1989).

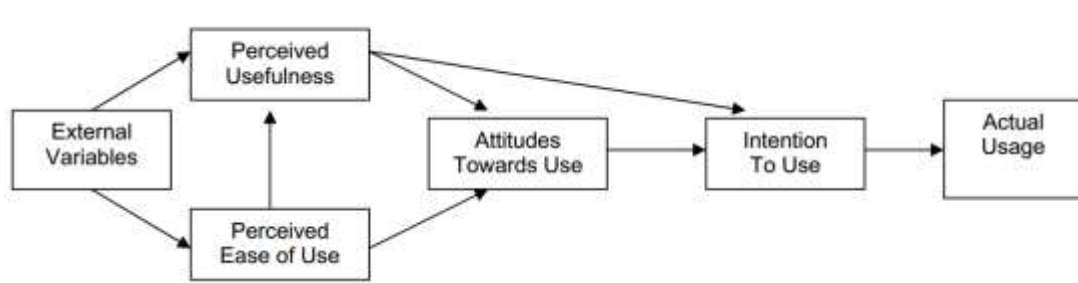


Figure 1. Technology Acceptance Model (TAM) (by Davis et al., 1989)

Another model, the Unified Theory of Acceptance and Use of Technology (UTAUT) was developed by Venkatesh and Davis (2000) and is widely used in the field of information and communication technology acceptance modeling. It is based on TAM. It attempts to explain user intentions to use a new information system and subsequent usage behavior (Venkatesh et al., 2003; Nassuora, 2012).

The UTUAT includes five main concepts: performance expectancy with perceived usefulness (PU), effort expectancy with perceived ease of use (PE), social factors (SF), facilitating conditions (FC), and attitude towards behavior (AT), which each have a direct influence on intention to use technology (Venkatesh et al., 2003). The details of the model include constructs and items that explain the user's behavioral intention or acceptance of the use of new technology like m-learning. Surprisingly, the UTUAT was able to explain 70% of technology acceptance behaviors between factors that consisted of these five constructs, which directly influence usage intention (Masrom & Hussein, 2008). The other variables, such as gender, age, and experience, have a moderate effect (Venkatesh et al., 2003).

Research Framework

Based on the literature review, this study adopted TAM to integrate the theory and some variables in the conceptual model of intention to adopt m-learning. The following are the constructs used: perceived usefulness (PU), perceived ease of use (PE), social factors (SF), facilitating conditions (FC), attitude toward behavior (AT), and behavioral intention to use (BE).

Based on TAM, the proposed framework was created in order to maintain the simplicity of the study. As Figure 2 shows, the research framework was slightly modified. The modified, simplified model was expected to explain the behavior of m-learning users in this context. We used five main factors that have a direct effect, as mentioned previously, on behavioral intention to use m-learning, and excluded mediator variables such as gender, age, and experience.

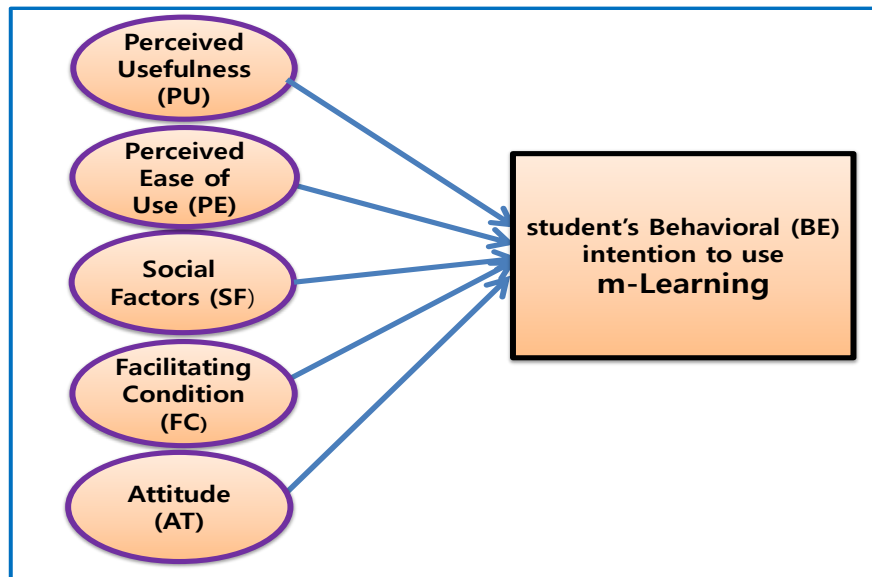


Figure 2. Research Framework

Proposed research hypotheses

From the literature review mentioned above, we derived the research hypotheses (Hs), which are listed below. H1 predicts that students who perceive that m-learning has high usefulness will have more positive intentions to use it in their studies. The other hypotheses have similar associations (Almatari, et als.,2013; Jambulingam, 2013; Al-fahad, 2009; Alzu'bi, 2014).

- H1: The Perceived usefulness of m-learning will have a positive influence on students' behavioral intention to use it.
- H2: The perceived ease of use of m-learning will have a positive influence on students' behavioral intention to use it.
- H3: Social factors will have a positive influence on students' behavioral intention to use m-learning.
- H4: Facilitating conditions will have a positive influence on students' behavioral intention to use m-learning.
- H5: The students' own attitude towards behavior will have a positive influence on students' behavioral intention to use m-learning.

Research methodology

A questionnaire was used as the instrument for data collection. The questionnaire was developed and modified, and designed with 20 items to measure the students' level of acceptance of m-learning (Jairak et al., 2009). It was divided into two parts: Part I, which collected general information on the participants, and Part II, which contained items and questions to measure constructs. The participants were asked to rate their level of agreement with various items on a 5-point Likert scale (from 1 "strongly disagree" to 5 "strongly agree"). The questionnaire also included a simple introduction to the research and asked the participants for their help. The question domains were the following: PU 4 items, PE 3 items, SF 3 items, FC 4 items, attitudes toward using technology (AT) 3 items, and Behavioral intention (BE) 3 items. In short, we use 20 items to measure 6 constructs.

The questionnaires were distributed to the students using Google Drive and were accessible anytime and anywhere. The data were collected during the month of April 2013. We asked some students to assist. They helped facilitate participation in the survey at some sites that students often visited. The sample included the data of 276 participants who successfully completed the questionnaire.

Data analysis and results

For convenience, the data are analyzed in five sections. The first section reports the participants' general information; The second section uses statistical analytical techniques of reliability and validity to see whether the hypothesis testing is appropriate for the data analysis; The third section shows the correlation coefficients that have a relationship among the constructs; and the fourth section discusses the students' overall level of perception and acceptance of m-learning. Finally, the fifth section checks the overall significance of the proposed model and the results of multiple regression.

Participants' general information and background

The first part of the data analysis presents the demographic information of the study participants. We analyzed the data using statistical frequency and percentages.

Out of 276 participants, 53% were female and 47% were male. Among them, more than half (53%) were aged 20 to 23, while 19.6% were under 20 years old and 27.5% were over 23. The vast majority of the students had experience using mobile devices (97%). However, more than half (59.8%) were not familiar with m-learning. Their most frequent uses of m-learning were contents (29%), followed by inner contents (24%). The major contents were major course (19%) and English conversation (26%).

Analysis of Reliability and Validity

Before testing the research hypotheses, we examined the internal consistency reliability and construct validity. Among the 276 questionnaires received, only the 171 questionnaires that were fully completed were processed using SPSS 20, and linear regression was used for statistical testing of the data.

Table 1
Participant characteristics

		Frequency	Percentage
Gender	Female	146	52.9%
	Male	130	47.1%
Age	under 20	54	19.6%
	20~23	146	52.9%
	over 23	76	27.5%
Experience using mobile technology (Smartphone)	Yes	268	97.1%
	No	8	2.9%
I am familiar with the mobile learning.	Yes	111	40.2%
	No	165	59.8%
What is the main purpose in your use of m-learning?	Contents	79	28.6%
	Video instruction	40	14.5%
	Inner contents	66	23.9%
	Other	91	42.8%
What are the major contents of your m-learning?	Major course	51	18.5%
	English conversation	71	25.7%
	Job certificate	17	6.2%
	Job preparation	19	6.9%
	Other	118	33.0%

Table 2 shows the values of both rotated factor loading and Cronbach's alpha. In the data analysis, Cronbach's alpha coefficient is used to test the reliability of the scale, and the results are shown in the right-hand column of the table. Cronbach's alpha coefficient ranged from 0.704 to 0.843. The reliability measures were above the minimum recommended level of 0.70 that is considered "acceptable" in most research. Therefore, the internal consistency of the measurement model was judged to be sufficient.

Next, we tested the validity of the constructs. We performed a factor analysis using principal component analysis with varimax rotations. In Table 2, the first result shows factor loadings from factors 1 to 5, and the second result is given to factor 6. Thus, these analyses were done twice. The results yielded four factors based on the minimum eigenvalue of 1. The cumulative variance explained from these factors, including at, pe, pu, and fc, produced a cumulative value of 64.1% in explaining the total variance of data. Also, the appropriateness of the factor analysis is significant according to two indices: Kaiser-Meyer-Olkin (KMO) and Bartlett's test of sphericity. The KMO overall assessed sampling adequacy as 0.891, which means that within the recommended level, it is statistically significant at $p < 0.05$. Bartlett's test of sphericity was 2398.650 (d.f. = 171; sig. = 000) and statistically significant at $p < 0.05$, which indicates a good correlation among the questionnaire constructs, as also suggested in the next section. Thus, it can be said that overall, all the items are appropriate and acceptable for regression analysis of the research hypotheses.

Table 2
Results of rotated factor loading and Cronbach's Alpha

Item	Component						Cronbach's Alpha
	1	2	3	4	5	6	
at2	.799						.843
at3	.734						
at1	.679						
pe2		.796					.793
pe3		.783					
pe1		.758					
pu3			.747				.764
pu2			.734				
pu4			.654				
pu1			.565				
fc3				.756			.774
fc4				.735			
fc2				.735			
sf2					.754		.704
sf1					.748		
sf3					.607		
be1						.757	.834
be2						.753	
be3						.798	
(1) Eigenvalue:	6.292	1.549	1.308	1.107	0.847	2.254	
(2) Variance Explained (%):	39.328	9.683	8.176	6.918	5.291	75.125	
(3) Cumulative Variance Explained (%):	39.328	49.01	57.19	64.104	69.396	75.125	

Correlation Coefficient

Subsequently, other results measured by statistical techniques of correlation showed a correlation coefficient (r), as presented in Table 3, and all values were significant at the level of $p < 0.01$. The coefficient indicates a strong degree of relationship among constructs. The table helps readers understand the r value. The Pearson correlation coefficient provides a numerical summary of the direction and linear relationship between two variables (Pallant, 2003, Nassuora, 2013). Its value can range from -1 to +1. The front sign indicates that if a positive correlation of one variable increases, it is followed by the other or vice versa. In the interpretation of the correlation coefficient, a value in the range of 0.70~0.90 can be interpreted as a high correlation, values from 0.40~0.70 indicate a moderate correlation, and those from 0.20~0.40, a low correlation.

Table 3
Correlation coefficients

Factor	Mean 'M'	Std.Dev. 'SD'	pu	pe	sf	fc	at	be
pu	3.1451	0.62509	1					
pe	3.4282	0.68527	.474**	1				
Sf	2.7127	0.67234	.501**	.342**	1			
fc	3.1389	0.73501	.499**	.476**	.380**	1		
at	3.042	0.69865	.606**	.480**	.479**	.595**	1	
be	3.3062	0.70292	.537**	.566**	.358**	.593**	.739**	1

** p<0.01

* p<0.05

Students' acceptance of mobile-learning

Table 3 above shows the levels of students' perception and acceptance of m-learning, as well as the statistical means (M) and standard deviations (SD).

The survey indicated that the students believed m-learning is generally useful at a moderate level, PU: M= 3.15, and they tended to agree that it is easy to use and easy to learn with a high level, PE: M= 3.43. Another factor, SF, showed that the students were not affected by others telling them they should use m-learning, SF: M= 2.71 (low mean value). The results for FC suggested that the students believed they had the necessary resources and help to use m-learning, at a moderate level, FC: M= 3.14. The participants responded that m-learning is good idea, they liked to use it, and it is fun, at a moderate level, AT: M= 3.04. Finally, the results suggested a high level of use in terms of behavioral intention to use m-learning in the future, BE: M= 3.31.

Testing the research hypotheses

To check the overall significance of the proposed model and the significance of independent variables on the dependent variable, regression analysis was performed. These statistical measures were performed at the 5% significance level. Table 4 shows that in the regression model, value of R Square was 0.628, and the F value (= 85.94) was significant at the 0.05 level. It also shows a number that tests for autocorrelation in the residuals from the statistical regression analysis. The Durbin-Watson statistic is always between 0 and 4. Here, the value of the Durbin-Watson's statistic (1.96) is approaching 2, which means there was no autocorrelation in the sample.

As Table 4 shows, linear association among the variables was measured by R (R = 0.793). The model for determining the adoption of m-learning was 79.3% statistically significant in measuring the adoption of m-learning. The value of adjusted R square (= .621) shows a good enough capacity of model to accurately predict the factors that influence the adoption of m-learning. On the basis of this model summary, the proposed model for measuring m-learning adoption can be said to be reliable in presenting a detailed picture of the factors affecting the intention to use m-learning.

Table 4
Model Summary

Dependent Variable	Independent Variable	R	R Square	Adjusted Square	Std. Error of the Estimate	F	Sig.	Dubin-Watson
BE	PU	.793	0.628	0.621	0.4164	85.9360	0.000	1.955
	PE							
	SF							
	FC							
	AT							

Table 5 shows the results of multiple regression. The predictive factors of students' behavioral intention to use m-learning can be summarized as the beta values of each factor.

The predictive factors PE ($B = 0.245$), FC ($b = 0.160$), and AT ($B = 0.553$) had positive results, being statistically significant at the 5% level, as the p value corresponding to each factor was less than 0.05. However, PU was not statistically significant at the 5% level of significance, as the p value corresponding to this factor is larger than 0.05. Another predictive factor, SF, was statistically significant but had a negative relationship with behavioral intention to use m-learning.

In summary, PE, FC, and AT are accepted, but SF is not. Accordingly, Hypotheses H2, H4, and H5 are supported, but H3 is not supported.

Table 5
Results of multiple regression

Model	Unstandardized Coefficient		Standardized Coefficient	t	Sig.
	B	Std. Error	Beta		
PU	.055	.057	.048	.960	.338
PE	.251	.046	.245	5.455	.000**
SF	-.103	.046	-.100	-2.220	.027*
FC	.149	.046	.160	3.245	.001**
AT	.541	.053	.553	10.125	.000**

** $p < 0.01$

* $p < 0.05$

Discussion of the findings

Today, the young generations are shifting their learning styles and methods from traditional learning to technology-based learning. They can access convenient communication, and it is easy to communicate with one another anytime, anywhere, individually and ubiquitously, using various mobile devices. Whether students and educators like it or not, m-learning is coming to college campuses. Many are optimistic that its positive influence on learning will not only continue but increase. In the near future, more advanced features of mobile devices like smartphones will expand the range of learning opportunities available to students. As such, universities need, at a minimum, to supplement traditional learning with m-learning in the age of high technology, as most students consider their mobile devices to be indispensable tools in their

daily lives, both on and off campus. In spite of this learning environment and the wireless communication age, universities are currently not to prepare to adopt m-learning.

This study provides baseline information on factors that influence Korean college students' behavior intention of using mobile technology in the learning environment. As a result of advancing technology, m-learning becomes a critical component as a new learning method in higher education and technology-oriented society. Eventually, it will become essential for universities to identify factors such as the ones we have tried to elucidate in this study.

In summary, this study identified statistically significant factors affecting students' adoption of m-learning. Not all the hypothesized relationships were supported. Some factors showed a positive relationship between the dependent variable (BE) to adopt m-learning and independent variables such as perceived ease of use (PE), facilitating conditions (FC), and attitude toward behavioral intentions (AT). Meanwhile, there was a negative relationship between the dependent variable of behavioral intention to use m-learning adoption (BE) and the independent variable of social factors (SF).

Conclusion

The objective of this research was to study the acceptance of m-learning by focusing on higher education students in Korea and also to investigate some factors that had a positive relationship with behavioral intention to adopt m-learning, based on a modified model.

In this research, more than half of the participants were not familiar with m-learning. Despite this fact, the survey results affirmed that three of the hypotheses (H2, H4, and H5) support a positive relationship in the proposed framework model. That is, perceived ease of use (PE), facilitating conditions (FC), and attitude towards behavior (AT) have a positive influence on behavioral intention to use m-learning. Therefore, the university authority should consider m-learning as a strategy that is appropriate for students' perception. We expect that this research can be used not only for better decision making, but also for preliminary research or developing m-learning for students in the future.

Although not all the hypothesized relationships were supported, this study proved that the past TAM research results were powerful and reliable in terms of predicting the factors affecting students' intention to adopt m-learning. In addition, the results of this research provide practitioners and educators with useful guidelines for designing a successful m-learning system.

The results acquired could not be generalized because external variables such as gender, age, experience, system, individual innovation, system security, and so on, were not considered. This matter is open for further research.

References

- Al-fahad, F. N. (2009). Students' attitudes and perceptions towards the effectiveness of mobile learning in King Saud Arabia. *The Turkish of Educational Technology-TOJET*, 8(2), 111-119.
- Almatari, A. Y., Iahad, N. A., and Balaidd, A. S. (2013). Factors influencing students' intention to use m-learning. *Journal of Information Systems Research and Innovation (JISRII)*, Volume 5. December 2013 - Special Issues.
- Alzu'bi, M.M.S.(2014). Student acceptance of mobile learning in the Malaysian higher education institutions. *Proceeding of the International Conference On Humanities Sciences And Education ICHE2014*, 24-25 March 2014, Kuala Lumpur, MALAYSIA.
- Davis, F. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology,, *MIS Quarterly*, 13, 319-340.

- Davis, F, Bagozzi, R, & Warshaw, P. (1989). User acceptance of computer technology: a comparison of two theoretical models. *Management Science*, 35(8): 982-1003.
- Fusilier, M. and Durlabhji, S. (2005). An exploration of student internet use in India: the technology acceptance model and the theory of planned behavior. *Campus-wide Information Systems*, 22(4), 233-246.
- Jairak, K., Paneetolgrang, P., and Mekhabunchakji., K. (2009). An acceptance mobile learning for higher education students in Thailand. *The sixth International Conference on eLearning for Knowledge-Based Society*, 17-18 December, 2009, Thailand.
- Jambulingam, M. (2013). Behavioral intention to adopt mobile technology among tertiary students. *World Applied Sciences Journal* 22 (9), 1262-1271.
- Liu, Y. Hu, F. and Li, H. (2009). Understanding learners' perspectives on m-learning: results from a survey. *Proceedings of the 2009 Euro American Conference on Telematics and Information Systems: New Opportunities to increase Digital Citizenship*.
- Nassuora, A. B. (2013). Students acceptance of mobile learning for higher education in Saudi Arabia. *International Journal of Learning Management System*, 1(1), 1-9.
- Pallant, J. (2003). *SPSS survival manual : A step by step guide to data analysis using SPSS for Windows*: Australia: Allen & Unwin.
- Park, S. Y, Nam, M. W. and Cha, S. B. (2012). University students' behavioral intention to use mobile learning: Evaluating the technology acceptance model. *British Journal of Educational Technology*, 43(4), 592-605.
- Sharma, S. K. and Chander, J. K. (2013). Technology acceptance model for the use of learning through websites among students in Oman. *International Arab Journal of e-Technology*, 3(1), 44-49.
- Venkatesh, V., & Davis, F. D.. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management Science*, 46(2): 186-204.
- Venkatesh, V., Morris, M.G., and Davis, G. B., and Davis, F. D. (2003). User acceptance of information technology toward a unified view. *MIS Quarterly*, 27, 425-478.

About the author

Joongkak Kook, Ph.D is a full professor in the Department of Computer Science and Engineering, College of Science and Technology, Sahmyook University, Seoul, Republic of Korea. He has worked for 25 years at the Sahmyook University. He received his Master Degree in Computer Information from McGill University, Montreal, Canada, and a Ph.D. in Computer Information from University of Oregon, U.S.A.

Email: jkkook@syu.ac.kr or cookyok@daum.net

[Return to Table of Contents](#)

Editor's Note: eLearning requires changes in the way we teach and the way we learn. The learner assumes more responsibility for planning, scheduling, participation, learning and evaluation. Additional tools and resources are provided via the internet to support individual study and group activities. The instructor role is changes to facilitator, providing resources, activities, and interaction through the learning management system and the internet.

Real-time engagement in a learning environment

Kathleen Young, Marty Martin and Tiffany Yates

USA

Abstract

Technology advances have brought new interaction to learning environments. Effective use of new technologies to enhance educational outcomes requires learning guides, collaboration and engagement on the part of the instructor, not just on the part of the student or participant. This article discusses synchronous environments that allow interaction between an instructor, students/participants in a classroom and remote-based students/participants. The article provides an overview of differences between traditional classroom and synchronous teaching environments. A list of synchronous methods and theories is discussed. A process for synchronous instruction is provided including a tactical list of best practices. Virtual classrooms provide an opportunity for real-time engagement between the instructor and students, but also changes the roles of each. With students now engaging more with other peers through social media and other platforms, both in and out of the classroom, instructors become more facilitator-like in their delivery of content. This new format for delivery of content also requires greater collaboration with technology experts in-house. Overall, synchronous instruction has implications for future distance education theory and research.

Keywords: Synchronous, virtual classroom, remote classes, interaction, learning engagement

Introduction

The world of education has been experiencing technology disruption at an extremely fast pace. Traditional classroom settings, consisting of students sitting in their chairs and faculty lecturing using a whiteboard and/or PowerPoint, have given way to a variety of new teaching environments. These new environments may include use of technology in the classroom including Smart Boards, cameras, video equipment, connections that link to the internet for web browsing ability, and connections that allow users to connect remotely to classrooms via a conference call connection and/or via a laptop computer. These are just a few examples and the world of education is continuing to change. These changes impact both the instructors delivering the content and the end-user or attendee.

Anyone that has ever participated in a conference call or conference call combined with PowerPoint presentation knows the temptation to multi-task. In addition to watching a PowerPoint presentation on a computer screen, the end user may also be listening to the presentation through an audio connection, interacting with others on the conference call presentation through some type of instant messaging tool, and checking e-mail at the same time. Interaction and engagement are critical from a teaching perspective and from an audience perspective for academics including faculty and practitioners. Adding synchronous components to this basic online facilitation, such as a video connection from one classroom to another hundreds of miles distant, can be challenging.

Synchronous virtual classrooms involve some type of interaction online between the facilitator and the viewing and listening audience. Synchronous learning is real-time and instructor-led. All participants receive information at the same time and they can communicate with other learners in

the environment (Ruiz, Mintzer and Leipzig, 2006). Synchronous classes allow the attendee to participate from a remote destination but at a specific date and time, as opposed to most on-line learning where students visit websites and participate on their own schedule. In an educational setting, synchronous online classes might involve faculty teaching the course with a group of students in one classroom, and another group of students at a distant location connected by a technology such as video conferencing. Synchronously-taught courses are changing the future of education and learning in many ways. These include learning to be collaborative while individualized and transforming the roles of instructor and learner. The role of the instructor in synchronous environments will require more facilitation and technical ability. While the role of the learner has become more engaged and active versus previously sitting at a desk, legs dangling, writing in a notebook and watching the clock on the wall tick the minutes away.

There are many advantages to synchronous teaching including the ability to engage remote students in a foreign country, participating in the class from their home, or learning on another campus of a global institution. Students can be engaged by a variety of text, audio, videos, animations, simulations and other technology. Gone are the days of basic, PowerPoint template presentations. Synchronous teaching allows faculty to engage students with text chats, whiteboards, video links, and sharing of desktops. Another benefit of synchronous teaching is the ability to record an instructional session for playback.

This synchronic interaction can increase student satisfaction (Cao, Griffin & Bai, 2009). Other benefits of using this methodology include multiple perspectives and interaction in the classroom, greater dynamics, the ability to provide immediate and personalized feedback to name a few (Park & Bonk, 2007). Studies have revealed that students are more engaged with each other in the synchronous environment than in the basic classroom, which has historically been more one-way communication (Chou, 2002). Synchronous components can enrich meaningful interactions (Repman, Zinskie and Carlson, 2005). Equally important, the opportunity to use technology to allow students from geographically diverse locations to interact with one another and the subject matter of the course provides students with different perspectives on important issues (Vockley, 2007).

Interactions can include the traditional instructor to learner relationship and student-to-student interactions. Other interactions include instructor and technology department collaboration. Technology departments and faculty within higher education now need to work together more closely to foster best-use of synchronous technology in the classroom and encourage greater interaction. Fostering interaction in the classroom using the available technology can be a challenge. This article discusses best practices with an end-goal of increased use of opportunities within synchronous courses.

Table 1 provides an overview of typical classroom activities to provide perspective on some of the key similarities and differences between a traditional bricks and mortar classroom and a synchronous teaching environment. Note that a synchronous environment could include students in a traditional classroom coupled with online/remote students participating in that same course.

Traditional and synchronous teachings are both designed to foster student interaction and engagement. There are pit-falls for each that could disrupt the students' ability to engage. For example, a traditional classroom PowerPoint might have graphics that are too small to read from the back of the classroom, while a synchronous PowerPoint might use the same graphic and remote students found it appeared too small on their screen sharing. Faculty training and support is critical for successful deployment of synchronous courses. Offering synchronous courses isn't a guarantee that learning will occur. In a traditional classroom, obstacles to learning could include students sitting side-by-side conversing during a lecture. In a synchronous environment, obstacles could include students instant messaging each other privately or publicly during the

presentation. From a practitioner standpoint, these distractions are referred to as multi-tasking but in reality are obstacles to focusing on the content being presented.

Table 1
Typical classroom activities

Traditional	Synchronous
Set meeting time/date for instruction	Set meeting time/date for instruction
Lecture from PowerPoint	Lecture from Power point, embed video clips, URL links, screen share, and conduct web tours.
Call on a student to answer a question	Call on a student to answer a question. Ability to ask questions and have all students/participants type in response simultaneously
Student raises hand to ask question	Students use raise-a-hand icon to ask a question.
Polling of students, requiring a manual hand count or a collection of responses and then time required to tally responses and post on whiteboard.	Polling buttons and functionality to ask yes/no; agree/disagree questions. Ability to ask questions and share results immediately while allowing anonymity of students if desire.
Write on a white board in the classroom	Write on a virtual whiteboard, ability to have students to write on virtual whiteboard & share
Students work in small, collaborative group discussions/exercise	Students work in small, collaborative groups communicate via audio and/or text chats and emoticons. Cameras enable students to see each other while working in their group. Students use screen sharing to show a response or solution.
Students ask questions of each other/instructor by raising their hand	Students engage in discussions by raising their hand in the virtual classroom, they can use private chat or public chat. Audio polling and other tools are used to reach a consensus around topics or specific answers to questions.
Annotation and highlighting of ideas on whiteboard by using different colored markers	Ability to highlight words, phrases and draw on screen.
Games are incorporated such as a PowerPoint with questions and responses that are revealed for points. Usually played pitting small groups of students against each other.	Interactive games and activities can be incorporated. The traditional question/answer game type PowerPoint can be used. Bingo type games can be used where a grid with words that participants are asked to listen for during a lecture or presentation is made available. Students/participants have to mark an x through the term in the grid as they hear it and then shout a specific phrase if they get all of the words marked through.
Student misses class and has to schedule time outside of the classroom to make-up the lecture/work.	Student misses class and can access a recording of the entire session.
Quizzes, assessments, exams, testing typically given as a hard copy in a classroom environment	Quizzes, assessments, exams, testing can be given as a hard copy to download and complete, as an online version with automatic scoring allowing for real-time assessment and discussion

Synchronous teaching theories and models

Training in teaching using synchronous environments is critical to the quality of content delivery and success of the learner. Three areas that contribute to expertise in synchronous environments include course content, skills for instructors and technology support. Technology will continue to

develop rapidly and disrupt teaching methodologies that have been in place for years. Presenters now need to take time to plan for the synchronous teaching environment.

A rubric is recommended to isolate and determine interactivity goals. A four-dimensional rubric to score interactivity of distance education based on social and instructional goals and types/uses of technology was developed by Roblyner and Ekhaml (2000). Their design also assessed the impact of interactive qualities. Their model has elements that contribute to a course's level of interaction and a scoring mechanism to identify low, moderate and high interactive qualities.

Other models have been developed to assess interaction include Henri's (1992) model which looks at participation, social interactivity, cognitive skills and metacognitive knowledge and skills as dimensions to consider. Synchronous interaction analysis developed by Schullo (2005) classified interactions as academic, social or technical. Understanding different types of content in eLearning can help with designing an architectural framework for delivering content synchronously (Clark and Mayer, 2007).

One of the considerations in synchronous teaching is the potential for several cognitive learning facets to be in use simultaneously. A learner may have to process more than two different sources of information in real time such as listening to the instructor present, watching the PowerPoint slide presentation and responding to instant messaging from classmates discussing the presentation. For the practitioner, multi-tasking is an assumed job skill. For the learning environment and learner, too many sources of input and engagement can result in too heavy a learning load to absorb. Reduction of text in presentations and considerations to reduce the extraneous load a student/attendee has to view result in a better learning outcome (Tabbers, 2000). Traditional learning models such as the four-level model of reaction, learning, behavior and results (Kirkpatrick, 1979) are relevant in an online, e-learning or synchronous environment.

Overall, e-learning frameworks, synchronous classrooms, and online learning have been explored and models have been built. A commonality most have is that extraneous factors and their impact are difficult to explore due to the growing complexity of technology. It can be difficult to take into consideration a range of factors such as:

- ability to see full screen;
- screen size of presentation;
- environmental noise, and
- mouse versus touch screen;

for consistency in researching learning outcomes. More research should be done in this area.

Table 2 presents a summary of theory and models pertaining to online, e-learning and synchronous content, skills and technology support

Table 2
Theory and model Summary

Course content	Online courses developed from constructivist principles should be relevant, interactive, project-based and collaborative and provide learners with some choice or control over their learning.	Partlow and Gibbs (2003)
	Content comes one of the following: Fact, concept, process, procedures or strategic principle.	Clark and Mayer (2007).
Skills for instructors	Survey of 21 graduate students showing that important skills for an online instructor include how to develop or plan for high-quality online courses. The study found that instructors using synchronous systems can address study understanding of concepts just-in-time providing for immediate sharing, interaction and feedback. The study recommended using a variety of synchronous features.	Marin, F., Parker, M.A. and Deale, D. (2012).
	Conceptual framework of what is considered to be a positive online educational experience. The model includes three aspects: 1) Social Presence, 2) Cognitive Presence and 3) Teaching Presence	Garrison, Anderson & Archer (2000)
	Effective instructors teaching online courses challenge and acknowledged their students.	Perry & Edwards (2004)
	Cognitive Load theory (CLT) developed providing guidelines for e-learning content to prevent learning cognitive overload.	Mayer, R.E. (2001)
	Research showing that split-attention effects from increased extraneous load can be avoided.	Chandler, P.S. and Sweller, J. (1991), Tabbers (2000)
Technology Support	Acknowledged keys to success with online learning including keeping things as technically uncomplicated as possible and providing necessary training and tech support upfront.	Benshoff, J.M., and Gibbons, M.M. (2011)

Rubrics and teaching models can provide the overarching strategy when beginning to include synchronous elements in an instructional environment. There are more tactical considerations that evolve as the preparation begins and eventually gives way to delivery in a synchronous environment. For example, an instructor needs to be aware of potential bias towards technology-savvy students in a synchronous environment. Careful attention needs to be given prior to teaching the content to ensure that all participants understand the technology and how to use it.

Instructors that use synchronous teaching need to think about a process prior to teaching the content. Given the many different types of programs available that an instructor can use to conduct synchronous learning, there is no one-set way to conduct a synchronous classroom learning session. Advance preparation is a requirement for teaching a synchronous session.

Advance preparation could include making a list of all possible functions available such as video, audio, instant messaging chat ability, screen share, virtual whiteboard, classroom whiteboard, polling buttons, and other features. Consideration must then be given to the content and knowledge that is to be transferred. The instructor now has to consider how best to achieve learning objectives using the list of functions provided by the technology. This is the point when the instructor can move forward to create the outline, presentation and activities for the session.

Once a classroom framework, presentation and activities have been completed, it is a good idea to go back and review for cognitive overload. Simply put – have you put too many functions and interactive activities in the session that could hinder rather than support participant engagement? Figure 1 provides an illustration of this synchronous pre-work process.

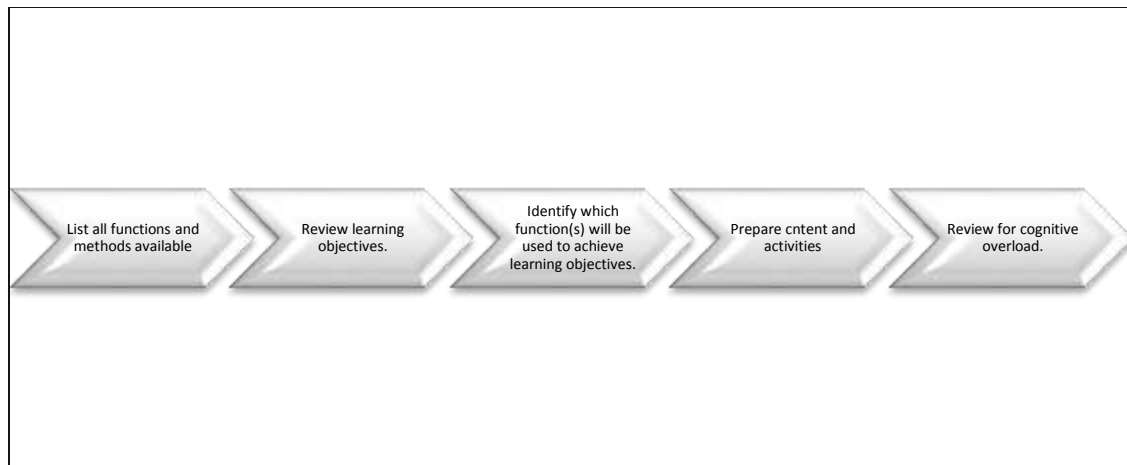


Figure 1. The Synchronous Advanced Preparation Process

Once the process is in place the next step is the tactical preparation for delivery. In a traditional classroom, an instructor might run copies of handouts and put them in a folder to bring to the class session. Some instructors have back-up activities and plans in a section of their instruction notebook that are ready-to-go, on the fly in the event there is a technical glitch with PowerPoint for example. For synchronous instruction, tactical considerations are extremely important. If there is a power outage for example, and the instructor was not prepared or had not thought through how to contact remote participants, it is possible an entire classroom session may have to be cancelled or restarted at a new time and date. Table 3 represents a list of tactical best practices when instructing in a synchronous environment.

Table 3
Tactical best practices for synchronous instruction

Tactical preparation	Delivery tips	Awareness tips
Put the technology help desk number in to your cell phone so that if you have a power disruption, you can easily find the number(s) you need.	Email the remote attendees the day before the meeting, if there is going to be a group activity. This helps to fill them in ahead of time so they can be better prepared to participate.	<p>Take time to think through a presentation from a remote attendee perspective and answer the following questions:</p> <p>Are there clear instructions for start-time, breaks, and activities?</p> <p>Do all attendees have an opportunity to introduce themselves?</p> <p>Will all attendees be required to state their name prior to speaking?</p> <p>Is access provided for all handouts and materials utilized?</p> <p>Are a variety of learning style activities utilized to engage attendees including video, Q&A, individual and group activities.</p> <p>Has a back-up plan been developed in the event a connection was temporarily lost?</p> <p>Has a remote attendee perspective been considered from start to finish for the presentation?</p>

Tactical preparation	Delivery tips	Awareness tips
<p>Email remote attendees from a cell phone or other device prior to the meeting so that a method is established and in place in the event of a power disruption and provide instructions to easily inform them what is happening and provide status updates.</p>	<p>Use the cameras in the room, particularly for individual presentations and group projects. For example, during individual presentations point the camera on the attendees so that remote students feel connected.</p>	<p>From an instruction standpoint, consider where the instructor will be standing in the room as a camera is turned on. Considerations from an online/remote viewer standpoint may include thinking through:</p> <p>Should the attendee see the presenter lecturing, the presentation, the whiteboard or all of these? What about other attendees, should they be able to see those in the classroom? Practice working the controls so that these considerations can be accomplished.</p> <p>Pacing the room can put an instructor in and out of the camera view creating a distraction. Place a masking tape X on a spot to stand as a reminder to not to pace around the floor.</p>
<p>Put remote instructions on your slides when you are getting ready to do an activity. This serves to remind the instructor to go over the remote instructions and also provides a visual for attendees that are dialed in remotely with clear, concise instructions.</p>	<p>Utilize etiquette for synchronous instruction.</p> <p>Before any attendee speaks, the attendee should announce his/her name. This enables remote students to know what is going on and who is speaking.</p> <p>Set rules and expectations so that various synchronous components are not misused and distracting. For example, if attendees can use emoticons to express emotions, set the expectation in advance for when and how these should be used.</p>	<p>Record a presentation and watch the playback. Adjust accordingly!</p>
<p>Set up folders on a shared drive or other system that contains materials such as agendas, handouts, or quizzes/exams. Unlock the materials just before a meeting to allow attendees access. Create a 'back-up plan' folder with an exercise or article to read, in the event the unlikely happens and a connection is temporarily disabled.</p>	<p>Embed video links (for example YouTube links or website links) in to your Power Point presentation. Embed hyperlinks to any web sites. This requires preparation in advance, but makes the instructional process seamless for attendees participating remotely.</p>	<p>Ask online/remote attendees at the first break for their feedback on how the session is going and any feedback they would like to provide for better engagement.</p>
<p>When possible, consider the social considerations of the synchronous class participants prior to creating content including activities. For example, if the students have never worked together or participated in a class session together, consider including an ice breaker activity.</p>	<p>If conducting an all-day or long meeting, create PowerPoint slides for breaks, as reminders to begin and end recordings, and as placeholders to ensure clear expectations (for example, create a Power Point slide that says "BREAK 10 MINUTES"; another slide may state "BEGIN RECORDING"; another may state "END RECORDING").</p>	<p>If remote attendees have access to webcams, require or strongly encourage their use in order to help students connect with one another</p>

Tactical preparation	Delivery tips	Awareness tips
<p>Also, consider creating course etiquette and setting rules slide that provides guidance on using emoticons, personal chat and other tools.</p> <p>This may include creating a list of unacceptable behaviors/actions and having a plan in place to enforce. For example, if a student posts inappropriate content or makes inappropriate instant messages, have a plan in place to remove/disconnect the student from the course session (including remote students).</p>		
	<p>Pass the controls to the remote attendees. Some synchronous technology providers have a virtual whiteboard space for writing and remote attendees can share their PowerPoint presentations and desktop.</p>	

Conclusion

Classroom interaction was once considered a goal of instructors and is now considered a given due to engaging technology and technology applications. Synchronous classrooms provide a new flexible and cost effective method of providing instruction to students that cannot attend a classroom session in –person but instead attend remotely.

Best practices recommended in this article can help instructors bridge the gap between the overarching strategy for the course/content and the tactical requirements to effectively conduct the course. Understanding and using these best practices in a synchronous environment can help to train instructors ahead of time on how to use various applications and how to create course content that best utilizes the technology. Training programs will need to be developed that help instructors maximize use of the various and evolving features of technology now available for a synchronous teaching and learning environment. It can also help to minimize any issues a remote student or participant may have by thinking through the lens of these remote participants and ensuring that course content and use of technology is appropriate and communicated effectively. Overall, synchronous classrooms can provide a high level of engagement.

References:

- Benshoff, J.M., and Gibbons, M.M. (2011). Bringing life to e-Learning: Incorporating a synchronous approach to online teaching in counselor education. *The Professional Counselor: Research and Practice*. Vol. 1, Issue 1, pages 21-28. Retrieved from <http://tpcjournal.nbcc.org/wp-content/uploads/bringing-life-to-elearning-Article.pdf>
- Bonk, C. J. (2002) "Online Teaching in an Online World" (executive summary), *USDLA Journal*, Vol. 16, No. 1, January 2002. Retrieved from http://www.usdla.org/html/journal/JAN02_Issue/article02.html.
- Bonk, C.J. & Kyong-Jee, K. (2006). The Future of online teaching and learning in higher education: The Survey says...A survey substantiates some ideas about online learning and refutes others.

- EDUCAUSE Quarterly*, No. 4 pp. 22–30 2006. Retrieved from <https://net.educause.edu/ir/library/pdf/eqm0644.pdf>
- Cao, Q., Griffin, T.E. & Bai, X. (2009). The importance of synchronous interaction for student satisfaction with course web sites. *Journal of Information Systems Education*, 20(3), 331-338.
- Chandler, P.S. and Sweller, J. (1991). Cognitive load theory and the format of instruction. *Cognition and Instruction*, 8, pp.293-332.
- Chou, C. (2002). A comparative content analysis of student interaction in synchronous and asynchronous learning networks. *Proceedings of the 35th Hawaii International Conference on System Sciences*, 5, 134.2. Retrieved from <http://courseweb.stthomas.edu/ccchow/triennial/Publications/HICSS35.pdf>
- Clark, R. C., and Mayer, R. E. (2007). *eLearning and the science of instruction*. San Francisco: Pfeiffer
- Garrison, D. R., Anderson, T., & Archer, W. (2000). Critical inquiry in a text-based environment. <http://www.anitacrawley.net/Articles/GarrisonAndersonArcher2000.pdf>
- Henri, F. (1992). Computer conferencing and content analysis. In A.R. Kaye (Ed.), *Collaborative learning through computer conferencing* (pp.117-136). Heidelberg: Springer.
- Marin, F., Parker, M.A. and Deale, D. (2012). Examining interactivity in synchronous virtual classrooms. *The International Review of Research in Open Distance Learning*, Vol 13, No 3.
- Park, Y.J. and Bond, C.J. (2007). Is life a breeze: A cast study for promoting synchronous learning in a blended graduate course. *Journal of Online Learning and Teaching* 3 (3), 307-323.
- Partlow, K.M. and Gibbs, W.J. (2003), Indicators of constructivist principles in internet-based courses, *Journal of Computing in Higher Education*, Vol. 14, No. 2, 2003, pp. 68–97.
- Perry, B., & Edwards, M. (2005). Exemplary online educators: Creating a community of inquiry. *Turkish Online Journal of Distance Education*, 6 (2).
- Repman, J., Zinskie, C., & Carlson, R. (2005). Effective use of CMC tools in interactive online learning. *Computers in the Schools*, 22(1–2), 57–69.
- Ruiz, J.G., Mintzer, M.J., and Leipzig, R.M. (2006) ‘The impact of e-learning in medical education’, *academic Medicine*, Vol. 81, No. 3/March.
- Roblyner and Wiencke (2003). *Journal of Asynchronous Learning*
- Repman, J., Zinskie, C., & Carlson, R. (2005). Effective use of CMC tools in interactive online learning. *Computers in the Schools*, 22(1/2), 57-69.
- Schullo, S. (2005). An analysis of pedagogical strategies: Using synchronous web-based course systems in the online classroom. University of South Florida.
- Tabbers, H. , (2000). Multimedia instructions and cognitive load theory: split-attention and modality effects. Paper presented at the AECT 2000 in Long Beach, CA. Retrieved from <http://openuni.nl/Docs/Expertise/OTEC/Publicaties/huib%20tabbers/AECT2000%20Huib%20Tabbers.pdf>.
- Vockley, M (2007) Maximizing the impact: the pivotal role of technology in a 21st century education system. Partnership for 21st Century Skills. <http://www.p21.org/storage/documents/p21setdaistepaper.pdf>

About the authors

Dr. Kathleen Young is currently Vice President – Strategic Learning & Development Consultant at Wells Fargo Advisors, LLC. Kathleen is responsible for developing strategy for learning programs throughout the organization. She brings more than 30 years' experience as an educator in financial services and in the academic arena. Kathleen is on the adjunct faculty at Webster University teaching undergraduate and graduate business curriculum and is the recipient of the Missouri and Kansas Association of Private and Career Colleges Instructor of the Year award for 2011.

Dr. Young holds an MBA from Fontbonne College and a BS in Economics from Washington University. She was awarded a Doctorate in Management from Colorado Technical University. Her dissertation is entitled "Business Incubators: A Study in Connectivity." Her dissertation research examines collaboration and networking in the context of business incubators in the United States.

eMail: kathleenyoungconsulting@yahoo.com

Dewey V. "Marty" Martin is Director Media & Academic Technology Services at Webster University, with 40 years of experience working in media and instructional design. As a part of Webster's global initiative, he is working with others in the University's IT department to connect students and instructors from 80 campuses on four continents using video conferencing technology for both classroom to classroom and instructor to individual student interaction.

Marty holds a BA from Centre College of Kentucky in English and Philosophy and a M.S. in Communications and Educational Media from Miami University of Ohio. He has done additional post graduate work at Ohio State University where he served as director of the Instructional Materials Lab in the College of Education, and founded Video & Communications Design, a media production and instructional design consulting firm.

eMail: deweymartin21@webster.edu

Dr. Tiffany Yates is the current Doctoral Department Chair with Colorado Technical University. In this administrative position, she leads proximately one hundred faculty. Her team is responsible for the learning process of 500 doctorate students in a variety of concentrations areas focusing in computer science and management. She values the vital scholar-practitioner model by enabling student engagement around career progression. Her research efforts are in organization development, employee engagement, strategic organization design, innovation, and large scale change initiatives. Dr. Yates is published within the Academy of Management, Midwest Academy of Management, Southwest Academy of Management, ISEOR Division of the Academy of Management, American Society for Quality, and the Organization Development Journal.

Dr. Yates holds a MA in Economics and BBA in Marketing. She was also awarded a Ph.D. from Benedictine University in organization development. Her dissertation is entitled "Developing a Culture for Continuous Innovation: A Qualitative Study of Organization Development." Her dissertation research examines how dimensions of organizational culture affect continuous innovation.

eMail: tiffanyyates@hotmail.com

[Return to Table of Contents](#)

Editor's Note: 3402 words

e-Teaching and learning of professional business communication in Nigerian universities

**Franklin Ohirole Ohiwerei and Victor Igbenedion
Nigeria**

Abstract

The paper discusses the possibility of e-teaching and e-learning for professional business communication in Nigerian universities, specifically: the meaning of e-learning, challenges of e-learning, and obstacles to e-teaching and e-learning for professional business communication. In addition, the paper discusses e-learning effectiveness and ICT applications for teaching and learning, activity theory, needs assessment, subject matter, and communication tools. A literature search revealed that professional business communication could be taught through e-learning, and this study documents many challenges and recommendations to handle those challenges. For example, there should be a portable electrical generator to back up and substitute for failure of electricity. The government should assist by reducing the high cost of hardware in Nigeria. The government should also reduce import tariffs. Teaching how to use computers should be inculcated into the curriculum of both secondary schools and tertiary institutions. And all institutions in Nigeria should be connected to internet.

Introduction

Communication is a process of exchanging of ideas, opinions, information, thoughts and feelings between two or more people. Professional business communication could involve interaction between an employee and employer and between employee and employee in discharging duties such as assignment of jobs and responsibilities, communication between one establishment and another, and in transaction of business.

Business communication has been described by several authors in several ways. Ohiwerei and Umoeshiet (2006) stated that business communication involves the giving out of messages from one person or organization and the receiving and understanding of the messages by another person or organizations. Communication is an indispensable management tool in business organizations. Business communication has sometimes been described as the art of transferring information and ideas from one mind or organization to another. It is much more than this. In its vital sense, communication means a sharing of ideas and feelings in a mood of mutual understanding, a two-way process in which the speaker must have a listener and the writer must have a reader to share his experience. The understanding can be achieved only if the parties "speak the same language" that is, if the words communicated have the same meanings to both and are used in the same sense. For his part, the person/organization communicating must first be clear about his aim, what he wants to say and wants the receiver to know, and how he wants him to react to what he tells him. He must then express it in language free from ambiguity and also appropriate to the receiver's level of understanding. These conditions are essential as a prelude to successful business relationships.

Any means that an individual or organization uses to transfer meaning; ideas, feelings, emotion or attitude to others is communication. There are speechless messages that are transmitted by facial expressions, by the use of the eyes, body movement, and gesticulation of the hands, shaking the head in approval or disapproval, smiling or frowning. These are sometimes more accurate ways of expressing oneself than the conventional oral or written messages given out by a person/organization but not received or understood. The methods of communicating in

organizations include speech, non-verbal communication, writing, audio-visual and electronic means. The method used will depend on the precise message that needs to be passed on. Business communication messages may contain factual information, opinion and emotion.

The term communication has many and varied meanings. To some it denotes the means of passing information, example by the telephone, telegraphs, or television. To others, it has to do primarily with, the channels of communication in the organization, such as the grapevine, the formal chain of command, the complaint box, or the grievance procedure. The definition has to do with the act of inducing others to interpret an idea in the manner intended by the speaker or writer. The term is derived from a Latin word *communis*, which means common. If we effect a communication of ideas, we have established a common meeting ground for understanding. (Flippo 1976 in Nwosu 2002).

What is elearning?

According to Olaniyi (2006) e-learning is all about learning that occurs at the computer. In our contemporary world, the learning through the aid of a computer simply means online knowledge acquisition through the internet or offline through CD-ROM etc. In other words, it is the use of network technologies to create, foster, deliver and facilitate learning, anytime and anywhere. DFES (2003) says e-learning has the potential to revolutionize the way we teach and how we learn. While Horton (2005) stated that e-learning is the use of internet and digital technologies to create experiences that educate our fellow human beings.

Jacobs in Oyekanmi (2008) explains that e learning is teaching system through the use of a PowerPoint presentation, web-based learning, internet integration, video conferencing and short messaging service (SMS). E-teaching and e-learning are any teaching and learning experience that makes use of electronic information and communication technologies.

Abifarin (2000) describes internet as a computer network through which computer users globally communicate effectively with one another using telephone lines. Song and Khong (2001) expressed that internet is a worldwide collection of networks, gateway services and computers using a common set of telecommunication protocols to link up.

Denantis (2003) defines e-learning as one form of learning that utilizes technology to deliver, interact or facilitate information.

E-learning cannot take place effectively unless students possess information and communication technology skills and resources identified by association of American universities (2000) and Yusuf (2005) as follows:

- To provide basic computer literacy skills.
- To provide basic computer literacy skills relevant to respective academic disciplines.

To improve students motivation.

- To improve access to remote resources.
- To improve communication skills.
- To improve higher order thinking skills.
- To Provide content (e.g. CD-Rom, www.etc).
- To support teaching methodology e.g tools for group assignments on the internet.
- To improve course management (both in the regular curriculum and in distance education).
- To collaborate in online teaching and learning with other faculty and students from around the world.

Information and Communication Technology

According to Information Technology Association of America ITAA (2008), information communication technology is the study, design, development, implementation, support or management of compute-based information systems, particularly software applications and computer hardware, deals with the use of electronic computers and computer software to convert, store, protect, process, transmit and securely retrieve information. Today, the term information has ballooned to encompass many aspects of computing and technology, and the term has become very recognizable. It professionals perform a variety of duties that range from installing applications to designing complex computer networks and information databases. A few of the duties that information technology professionals perform may include data management, networking, engineering computer hardware, database and software design, as well as the management and administration of entire systems. When computer and communications technologies are combined, the result is information technology, or “infotech”. Information technology is a general term that describes any technology that helps to produce, manipulate, store, communicate and or disseminate information. Presumably, when speaking of information technology as a whole, it is noted that the use of computers and information are associated.

Challenges of e-learning in Business Education in Nigeria

Olaniyi (2006) states the challenges posed to the Nigeria communication commission in 2001 which by all standard is equally challenges to business education in Nigeria, which he acknowledged that some had been met while some had not seen the light of the day:

Telecommunication market is not yet liberalized. There is no proactive policies which shall make telephone (fixed and mobile) available and affordable thereby boosting Tele-density from the present 0.006% to at least 1% by 2003 and 5% by 2007 and 10% by 2010.

License has not been given to many internet services providers (ISPS) to use diverse facilities to connect to the internet thereby boosting bandwidth, which is crucial to down stream information.

License fee is prohibitive.

The cost of registration for the .ng name is on the high side.

Internet cafes not promoted across cities, towns and villages while the cost of the permit is on the high side.

A website is not Evolve. There is unnecessary bureaucracy delays and wastages.

Unavailability of internet connectivity most especially wireless access protocol in the country.

Nafukho (2007) argued that current development in technology has an extraordinary potential for transforming education to meet the growing need for customized, on-demand learning. In spite of the bright prospect of e-learning in Nigeria, there are some generic obstacles militating against the effective implementation and some of these obstacles are equally affecting the teaching on line of business education in Nigeria which are:

High cost of hardware in Nigeria.

High import tariffs and less price competition.

Transmission cost is equally high in Nigeria and Africa.

Internet access in Nigeria and Africa is through a foreign gateway.

Shortage of skilled manpower.

Existing telecommunication infrastructure is in very poor condition.

Computer technology illiteracy among the students.

Cost of acquiring and installing the gadget required for e-learning.

Incessant Power Supply.

Maintenance culture.

Bandwidth limitations. Limited band-width means slower performance for sound, video and intensive graphics, causing long waits for download that can affect the ease of the learning process.

Activity theory: The subject, the need and the tool

Our world is characterized by the coexistence of humans and nonhumans. Individually or collectively, we cannot subsist without technical artifacts just as much as the artifacts only exist because of human beings (Miettinen, 1999 in Ekundayo (2012). These assertions typically refers to the interplay between the subject and object of an activity as purported by activity theory. Activity theory aims at understanding the interaction of human beings and the social entities that compose their everyday natural setting. Achieving this understanding requires going through an analysis of the genesis, structure and process of human activities (Kaptelinin and Nardi, 2006).

The genesis of human activity starts with a subject and an objective (a need). Where the subject is the human being, consciousness is significant in what he does and how he reacts to the needs in his life. In activity theory, any activity is an activity of a subject. Not any entity is a subject. Subjects live in the world; they have needs that can be met only by being and acting in the world” (Kaptelinin and Nardi, 2006, p. 33). Some theories for instance, actor-network theory, assume symmetry between the social and the technical (that is, humans and non-humans) elements of an activity, suggesting both are ‘collective’ in that they are equal in their influence on each other (Latour 1999). Activity theory does not subscribe to this philosophy. Rather it grants agency to human subjects only, emphasizing their superiority over non-human elements as social beings with significant traits of consciousness and intentionality (Diaz Andrade, 2010; Miettinen, 1999).

Diaz Andrade and Ekundayo (2011) argue that “the ultimate cause for human activity is needs”. The survival of humans in the world is based on their ability to meet their needs using the tools available to them. The needs of human beings are what lead to the creation, continuous modification and appropriation of tools to meet the needs. This again emphasizes that the interaction between human subjects and their objectives is not a symmetrical relationship; rather it is initiated and carried out by human subject to fulfill its needs. This is where the role of consciousness and intentionality come to play in the activities of human being. For every human activity, there is always a motive, a goal, and the consciousness trait of humans provides the platform by which the goal is to be met (Miettinen, 1999).

Mwanza and Engestrom (2005, pp. 453-454) opined that “the current surge to implement information and communications technologies (ICT) within teaching and learning process has created an inevitable need to store, access and distribute educational resources via technology-based systems, particularly databases and web-based systems”. The use of ICT as a tool in teaching and learning processes has great implications for both lecturers and students as creators and users of educational content. There is also an inevitable need for current higher education administrators to involve technical, information and educational specialist when handling issues regarding the management and distribution of educational content especially in e-learning environment. In the current era of higher education delivery, ICT as tool has been influential in distributing learning materials to a large number of people especially when they are separated by

distance and time. Without doubt, higher education delivery, shape and is in turn shaped, by ICT technologies as mediators of teaching and learning activities.

Writing Effective Customer Service Letter

Through the help of e-teaching and learning students can be taught as well as learn to write customer service letters that explain your company's position while maintaining the customer's goodwill. Using samples of their own on-the-job writing, participants will learn to satisfy customers with easy-to-follow explanations presented in a positive, personal manner. At the end of the e-teaching and learning programme students would have learned how to

1. Explain policies and procedures clearly.
2. Apologize for mistakes or misunderstandings while maintaining the customer's good will.
3. Present negative decisions in a positive way.
4. Effectively describe solutions to problems.
5. Profile the customer's needs and characteristics.
6. Select the right contents, language, and style for a particular situation.
7. Write in a natural tone to avoid the form-letter feel.
8. Apply the principles learned to improve oral communications as well.

Writing for administrators

The objective of online teaching of writing for administrators are to provide administrators with a structured approach to all correspondence, with special emphasis on how to inform, request, and motivate. Using samples of their own on-the-job writing, participants will learn how to open and close more effectively, develop content logically, and write clearly and assertively. At the end of the e-teaching and learning programme, students would have learned to

1. Prepare correspondence more quickly and effectively with the six building blocks of effective communication.
2. Achieve objectives the first time, minimizing the need for follow-up reminders.
3. Profile an audience's needs and characteristics.
4. Determine what information to include and what to exclude.
5. Select the right kind of opening and closing for each situation.
6. Write assertively while maintaining a pleasing tone and inviting format.
7. Apply the principles learned to improve oral communications as well.

From the above analysis it is discovered that professional business communication could be taught online, but there are so many factors that need to be considered for this to actually materialize. Such as finance, equipment, electricity, expertise and connectivity. For anyone to undertake online professional business communication course, he or she needs some financial backing such that he or she could purchase a computer set, have link to internet, should be able to operate computer and internet expert. How regular is electricity?

Incase such course is not free, considering the Naira versus Dollar exchange rate, how many Nigerians can avoid such expensive programme?

However, for those who can afford the above mentioned, professional business communication can be taught online. It is an easy way of learning. This could be done at a more convenience time. All the students need to do is to connect their computers to internet at any time of the day,

and teaching and learning can take place. Through professional business communication online, students can be taught, writing effective customer service letters, writing for administrators and technical presentations i.e. plan the best strategy for meeting objectives with the six Building blocks of effective communication. Select what technical information to include or exclude with the plus and minus game. Building involvement through audience and subject matter profiling. Present technical information clearly. Using the right language and level of detail. Project confidence through effective use of voice, appearance, and body movement. Use visual aids in ways that clarify technical material rather than distract. Recognize the best time to introduce solutions and recommendations and answer questions and any other additional features.

Conclusion

It is hereby concluded that having considered the analysis above, professional business communication could be taught online. This is in line with Gunawardana (2005) who highlights that studies in e-learning have shown that most programmes are likely to succeed with the constant involvement of facilitators through e-mail discussion lists and individualized messages. But before this could be achieved so many factors such as the student must be computer and internet literate. Student must be financially balance such that he or she could purchase a computer set, connect to internet, able to pay fee in Dollars and there must be a generating set to back up electricity supply which is not regular. On the contrary, professional business communication could not be taught online.

Recommendations

The authors after a due consideration of the above facts recommended as follows:

For any student who wishes to undergo a professional business communication online course, need to first of all undergo computer and internet training.

There should be a generating set to back up to substitute failure of electricity.

The teaching of computer should be inculcated into the curriculum of both secondary schools and tertiary institutions in Nigeria.

All institutions should be connected to internet.

The government should assist by reducing the high cost of hardware in Nigeria.

The government to reduce the import tariffs.

The government should also assist by reducing the Transmission cost in Nigeria.

References

- Abifarin, M. S. (2000). The internet and the development of technology education in Africa. *The case of Nigeria African Journal of Research in Education*, 1(1), 109-114.
- Abimbade, A. (2002). Perspective of technology integration and effectiveness of computer assisted instruction (CAI) in primary mathematics classroom. *Uniqua Research Chronicle*, 4(2).
- Abimbade, A. (2005). A welcome address at the opening ceremony of e-learning conference organized by e-learning network of Nigeria (eLNN).
- Association of African universities (2000). Technical experts meeting on the use and application of ICTs in higher education institutions in Africa. May 17-19, University of Dar-es-salam, Yanzania. <http://www.aau.org/english/documents/aau-ictreport.htm>.
- Diaz Andrade, A. & Ekundayo, M. S. (2011). Mediated action and network of actors: From ladders, stairs and lifts to escalators (and revelators). *International Journal of Actor Network Theory and Technological Innovation*, 3(3), 21-34.

- Desantis, C. (2003). What is e-learning? Retrieved |August 9, 2008 from <http://elearners.comelearning/91.asp>.
- DfES (2003). Towards a unified e-Learning strategy, London: DfES Economist Intelligence Unite in (2008).
- Ekundayo, M. S. (2012). The use of activity theory to explain the complexities surrounding the use of ICT in overcrowded university classrooms: The ease of Nigeria. A thesis submitted to the Auckland University of Technology in fulfillment of the requirements of the degree of Doctor of Philosophy.
- Flippo (1976) in Nwosu, B. O. (2002). Communication in office. *Office management in Nigeria*. Owerri: Chin & Chis Ventures.
- Gunawardana (2005), An empirical study of potential challenges and benefits of implementation proceedings of the second international conference on e-learning for Knowledge-Based Society. August 4-7, Bangkok, Thailand.
- Horton, W. (2005). Leading e-learning: <http://www.e-learningguru.com> ASTD.
- Information Technology Association of America (2008). ITAA.org <http://www.ita.org/does/information%20Technology%20Definitions.pdf>. p30, Accessed March 3.
- Kaptelinin, V., & Nardi, B. A. (2006). Acting with technology – Activity theory and interaction design. Cambridge, MA: MIT Press.
- Latour, B. (1999). Pandora's Hope: Essays on the reality of science studies. Cambridge, MA: Harvard University Press.
- Mwanza, D. & Engestrom, Y. (2005). Managing content in e-learning environments. *British Journal of Educational Technology*: 36(3), 453-463.
- Ohiwerei, F. O. & Umoeshiet, E. A. (2006). *Business communication*. Agbor: Pon Publisher Ltd.
- Oyekanmi, O. 92008, April, 2). Nigerian urged to embrace e-learning. This day Retrieved January 30, 2009 from <http://www.pcng.com/encyclopedia-term/0.2542,t=virtuallibrary>.
- Song, J. & Khang, P.W. (2001). Empirical study on the effectiveness of e-method in web-based environment. *International Journal of the Computers: The Internet and Management*. 9(2). 40-51.
- Yusuf, M. O. (2005). Information and communication technology (ICT) and education. Analysing the Nigerian national policy for information technology. *International Education Journal*. 6: 316-321.

About the authors

Franklin Ohiole Ohiwerei, Department of Vocational and Technical Education, Faculty of Education, Ambrose Alli University, Ekpoma, Edo State, Nigeria e-Mail: Ohiolefr@yahoo.com

Dr. Victor Igbenedion, Faculty of Education, Department of Vocational and Technical Education, University of Benin, Benin City.

[Return to Table of Contents](#)