Factors Affecting the Intention to use E-Learning Systems in Middle East

العوامل التي تؤثر على نية استخدام أنظمة التعليم الإلكتروني في الشرق الأوسط

By

Anissa Bettayeb

100116

Dissertation submitted in partial fulfillment of

Master of Science in Information Technology Management

Faculty of Engineering & Information Technology

Dissertation Supervisor:

Dr. Khalid Shaalan

March-2014

To Dad, Mom and Husband for their Unlimited Love, Support and Prayers.

Abstract

This thesis investigates the factors that influence continuance intentions to use Learning Management Systems (LMS) by faculty members as a supplement to the traditional face-to-face way of education. A theoretical model is developed by extending the Expectation Confirmation Model (ECM) with the following factors: technical support, training, computer self-efficacy and Blackboard user-interface design. Data was collected from 108 faculty members at a university in United Arab Emirates (UAE) through a qualitative approach in order to investigate the faculty members' experiences with the LMS. The thesis found that system design and technical support factors are very important factors that affect the intention to use the system in addition to the satisfaction and usefulness .Those findings supported the assumed hypotheses in the new model and can be adapted to other similar environments to improve the continuance intentions to use LMS in academic institutions.

Keywords

Learning Management Systems, LMS, Blackboard, Higher Education, Expectation Confirmation Model (ECM), E-Learning.

Abstract – Arabic

الملخص:

هذه الأطروحة تحقق في العوامل التي تؤثر في استمرار استخدام نظم إدارة التعليم (LMS) من قبل أعضاء هيئة التدريس كمكمل للطريقة التقليدية في التعليم (وجها لوجه). تم تطوير نموذج نظري بالإستناد إلى "نموذج تأكيد التوقع" (ECM) مع إضافة العوامل التالية: الدعم التقني والتدريب و الكفاءة الذاتية في إستخدام الكمبيوتر و تصميم واجهة المستخدم الخاصة ببلاكبورد. وقد تم جمع البيانات من 108 من أعضاء هيئة التدريس في جامعة من جامعات الإمارات العربية المتحدة من خلال نهج نوعي من أجل التحقيق في خبرات أعضاء هيئة التدريس في إستخدام نظام التعليم. الأطروحة في النهاية لخصت أن تصميم واجهة النظام والدعم التقني هي عوامل هامة جدا تؤثر على نية استخدام نظام التعليم بالإضافة إلى عاملا الارتياح والفائدة المرجوة من النظام. هذه النتائج تدعم الفرضيات المفترضة سابقا في النموذج الجديد، ويمكن أن تتكيف مع بيئات أخرى مماثلة لتحسين استمرار استخدام نظام التعليم LMS في المؤسسات الأكاديمية.

Acknowledgement

I would like to express my sincere gratitude to my supervisor, Dr. Khalid Shalaan, for his guidance, support and inspiration during my work on this thesis. Their rich knowledge and encouragement have been a great value to me throughout this thesis. I would like also to express gratitude to my family for their continuous support.

Contents

Chapter 1: Overview

This chapter presents the overview of the thesis by describing the problem area and aim of the study and research question, as well as, the research delimitations. Moreover, it describes the whole thesis structure and content.

1.1 Introduction

Technology is a very important pillar for institutional development and competitive advantage, and many universities are investing resources in terms of time, manpower and money on the Blackboard system, yet they don't have much insights on the impact of this system on the quality of education and whether faculty members and students do benefit from the various features of the system.

With the advancement of technology, Universities have been considering eLearning and Online Learning initiatives as an important platform to improve the learning experience for the students and empowering the faculty with interactive teaching capabilities (Siritongthaworn, Krairit, Dimmitt, & Paul, 2006, p. 139).

Information technology (IT) tools are being incorporated in nearly every aspect of life. It is hence no surprise that educational institutions are increasingly adopting Learning Management Systems (LMS) all around the world. LMS provide effective means for these institutions to supplement their customary methods of teaching. This is achieved by the ability of LMS to support distance learning, in addition to the role of LMS in storing, managing and communicating academic resources (Al-Busaidi and Al-Shihi , 2011).

Learning Management Systems provide many features that enrich and facilitate the learning progression (Burniske and Monke, 2001) such as Course management tools, discussion, assignment submission, and assessment tools (Yueh and Hsu, 2008).

This thesis investigates the factors that influence continuance intentions to use Learning Management Systems (LMS) by faculty members as a supplement to the traditional face-to-face way of education.

Expectation Confirmation Model (ECM), which links between the continuous intention of the system with the satisfaction of the user and the usefulness of the system, is used as a base of this research to develop a new theoretical model. The new model includes important factors such as: technical support, training, computer self-efficacy and Blackboard user-interface design. These factors played a major role in helping the faculty members to intend to use the blackboard system to support their teaching activities.

The research used a qualitative approach through gathering 300 softcopy and hard copy of the questionnaire. The participants of this research were faculty members from 14 different colleges at a university in UAE.

The thesis found that system design and technical support factors are very important factors that effect the intention to use the system in addition to the satisfaction and usefulness .

Several hypotheses or factors that effect the intention to use the LMS system are defined too. The findings supported the assumed hypotheses in the new model.

The findings can be adapted to other similar environments to improve the continuance intentions to use LMS in academic institutions.

This thesis suggests to focus on providing the needed technical support for the Learning management system .At the end, as a future plan we can define and test other factors such as Motivations and peer sociality as part of the model and test them.

The thesis includes 5 chapters and 2 appendixes organized as follows:

Chapter 1 presents the overview of the thesis and describes the problem, aim of the study and research question, as well as, the research delimitations.

In Chapter 2, the Expectation Confirmation Model (ECM) is described and related researchers to the fields are presented with their findings for each hypothesis.

In Chapter 3, the research methods and questionnaires details are listed.

Finally, the findings are detailed in Chapter 4 and the suggestions and conclusions of the research are summarized in the end in Chapter 5.

1.2 Problem Description

Several researchers have addressed the role of LMS in higher educations or schools in their studies (see Chapter 2). However, few researchers studied the effects of the usage of LMS in higher education. This thesis studies the factors that influence continuance intentions to use Learning Management Systems (LMS), in particular Blackboard, by the faculty members at a university in UAE as a supplement to the traditional face-to-face way of education. Therefore, a model is created based on Expectation Confirmation Model (ECM) supported with a review from other researchers findings. A quantative approach is used in order to investigate the faculty members' experiences with the LMS used at a University in UAE.

1.3 Aim of Research and Research Question

The aim of this research is to identify and explain patterns that affect the faculty members experience in the LMS, Blackboard, in a blended learning environment.

In order to achieve this aim, this research seeks to answer the following question: What are the factors that help faculty members in higher education universities in the Middle East to intend to use the LMS to support their teaching activities?

1.4 Limitations in the Research

As in the case of many research thesis and papers, some Limitations are presented in this research due to several aspects.

The first limitation is that this study discusses a single case for a specific university, which makes it hard to be generalized to other universities around the world. In addition to this, no cooperation to other cases and universities is done to be able to deep understand the case and narrow the differences, issues and aspects.

Second, not all the results of the study can be applied to other universities in the Middle East or in the world, they are likely to be applied to universities who are using the blending learning environment and may share some of the environment concepts in the way the LMS is designed and the training and technical support are conducted.

On the other hand, the ECM model is used in this study as a theoretical guide. The limitation of this model could reflect on the study as well.

1.5 Description of the Case

The study took place a University, a nonprofit well known education institution, one of the largest universities in UAE, with more than 10,000 students and 300 faculty members distributed in 5 campuses around the city. The University has 14 colleges (Arts, Humanities & Social Sciences, Sciences, Business Administration, Communication, Community College, Engineering, Fine Arts & Design, Health Sciences & Medical Colleges, Law, Sharia & Islamic Studies) offering 80 programs at the Bachelor, Masters, Doctoral, and Diploma levels .

Blackboard version 9.1 is the base learning platform used in teaching environment at the university since 2004 to supplement the traditional face-to-face way of education. Blackboard is offered in both languages to enables course delivery, content management and community engagement. It is rich of features that allow instructors to build their courses content and help to communicate and interact with students. (Hwang and Yi, 2003). The design of blackboard is aligned with the university theme and well-structured in a way to be easily accessed by the users.

The Information Technology Center (IT Center) at ABC University provides training sessions to all university faculty members on the usage of the provided IT services such as Blackboard. Blackboard sessions are organized through series of workshops and seminars at the beginning of each year in both languages, Arabic and English, depending on the college teaching language.

Although the training programs help the faculty to improve their IT skills and teach them how to use the various IT systems, yet only few faculty members attend these training sessions every semester. Conducting these training sessions requires a lot of time and effort to plan, coordinate and deliver, by the technical and support staffs who work in the IT Center.

Technical support is also provided by the IT Center through a centralized help desk contact person, email and telephone that receives all faculty member and students calls or emails and log them in to a service desk system and assign the cases to the

dedicated blackboard specialist. One blackboard specialist staff is available to address the whole community queries in blackboard. To better support the blackboard users, an online support site is created in both languages that contains all needed guides and manuals and frequently asked questions (FAQs) to refer to online anytime.

Chapter 2: Literature Review and hypotheses

This chapter presents an overview of elearning definitions and theories and elearning models. In addition, it introduces the Expectation Confirmation Model (ECM) that has been used as a basis to our new assumed model. All different factors estimated to build this model are described with supportive researchers findings.

2.1 Elearning Definitions and Theories:

Arbaugh (2002) E-learning is the echo system where knowledge providers share via the internet, content and learning materials with the students, and enable all parties to interact and collaborate digitally (Selim, 2007).

Universities are implementing various learning management system tools, for example Blackboard, to either complement the class room setting or to provide full online courses (Mouakket. and Al-hawari, 2012).

E-Learning has various benefits for students and faculty, including availability of content at any time and any place, the ability to set the pace and access classes on demand and in a nonlinear manner, improves interactivity and collaboration, virtualization which eliminates the cost of physical classes and travel time (Bhuasiri et al., 2012).

As more universities are adopting learning management systems, e-learning became very essential to complement the traditional class room learning experience. Table (1) below compares the advantages and disadvantage of both models (Taha, 2007).

Table 1: Characteristic comparison between the two learning paradigms (Sources: Wang (2003); Zhang et al. (2004))

Characteristics	Traditional	E-learning

Advantages	• Active classroom interaction • Immediate response and motivation • Creating social learning groups	• Learner-centric • Time and location flexibility • Access to information plethora • Capability of developing learning objects (LO) using web resources • Foster self-pace learning • Allow packaging essential LO to all students • Consistent
Disadvantages	• Instructor-oriented • Time and location constraints • Limited access to remote information • More expensive • Less consistent	• Latent relation (instructor-learner) • Weak feedback in asynchronous • Gaps in computer knowledge

E-learning includes two types of communication; the Synchronous type which means real time interaction and Asynchronous type that is on demand interaction (Hrastinski, 2008). Asynchronous online learning is enabled by email and discussion boards that establish communication between multiple people over a period of time (Oye, Salleh and Iahad, 2012).

The challenges that students and faculty experienced using e-learning at a number of Jordanian universities was researched (Mashhour and Saleh, 2010) by questioning 120 teachers. Although there is great consideration for the usage of e-learning in academia, the participants raised two main concerns which were the lack of resources,(Although the government has been very supportive in providing institutions with the infrastructure and encouraging the use of technology in universities) and the lack of trained and experienced manpower that can implement the learning management systems and champion it within the institution to educate and encourage the use of the new technologies among students and faculty.

Albirini (2006) researched the use of technology within the education sector in Syria, and illustrated the understanding and experience of the educators with the technology.

Learning Management Systems (LMS) are online softwares that empower faculty to distribute learning materials via the internet, and also provide a platform for communication and interactions between the students and their courses (Abu Shawar, 2009, p. 3). They offer an “innovative, convenient, and functional resource that has strong potential to meet today’s learners’ requirements” (Vrielink, 2006) from anywhere and anytime.

Although there are many Learning Management Systems in the market, the widely used system in the US universities is Blackboard (Falvo and Johnson 2007). Another software is Moodle, as an open source software.

2.2 Elearning Models

2.2.1: Technology Acceptance Model (TAM):

A commonly applied model is the one developed by Davis (1989), refereed to as the Technology Acceptance Model (TAM). TAM is a variation of the Theory of Reasoned Action (TRA) (Fishbein and Ajzen, 1975) but with extensive emphasis on user acceptance of Information systems. Consequently, investigating user acceptance of new information technologies has repeatedly applied TAM as a reference model (Lee et al., 2007; Yi and Hwang, 2003).

TAM is one of several models that look at investigating the intention to adopt and consequently the adaptation of new Information Sytem (IS). Perceived Ease of Use (PEOU) and Perceived Usefulness (PU) are considered the main driving factors for a user’s behaviour towards an IS, but these two factors are in turn influenced by other exogenous factors, such as social influence, and possibly other technical characteristics of IS. Therefore, Davis (1989 and 1993) recommends the addition of exogenous factors, depending on the context, to enhance the predictively power of the model. As stated by Mouakket and Al-hawari (2012) , A number of studies (Liu et al., 2005; Saadé and

Galloway, 2005; Landry et al., 2006) have applied Davis' model in analysing users' perceptions of e-learning .

2.2.2: Community of Inquiry (COI):

The Community of Inquiry (COI) model focuses on how the social life contributes in learning, where constructivism and social collaborative aspects of learning are two main driving factors. COI model is a useful reference/evaluation model/tool (McKerlich & Anderson, 2007) in such population to be studied. The COI model was frame-worked in the late nineties to look at the on-line learning process and context (McKerlich & Anderson, 2007). Its roots goes back to Dewey's (1933) practical inquiry, which further developed into Lipman's community of inquiry and Garrison's (1991) model of critical thinking (McKerlich & Anderson, 2007).

The principle behind this model is described in three core educational elements, which describe a collaborative-constructivist learning experience. Those three elements are social presence, cognitive presence and teaching presence (Garrison et al., 2000).

The Social Presence element is the ability of users to present their personal characteristics to the other participants. This element indirectly facilitates the cognitive presence element and the development of critical thinking supported by other interacting user/learners.. (jamal and shanaah, 2011)

2.2.3: Motivation Hygiene Theory:

As stated by Cynthia (2011) Motivation and job satisfaction have been explored by a number of studies, and the results have been generalized to a wide range of career fields including education (Herzberg et al. 1959; Betts, 1998; Chyung, 2005; Lee 2001). Individuals were found not to be the only source of motivation and, as emphasized by Herzberg, the administrative system of the organization has a key role in motivating individuals to work. "The results indicated that motivators were the primary cause of satisfaction and hygiene factors the primary cause of unhappiness on the job" (Herzberg, 1968, p. 57). Two important factors were defined by the study; motivators and hygiene factors.

Motivators can be intrinsic and extrinsic. The motivation hygiene theory identifies some motivator factors such as the factors are achievement, recognition for achievement, the work itself, responsibility, growth or advancement that affect an individual's ability to be motivated and preserve a positive attitude towards their profession and organization (Herzberg,1968p. 58).

2.2.4: Expectation Confirmation Model (ECM)

Expectation-confirmation Model (ECM) suggests that satisfaction is connected to the expectations and perception of adoption or usage. It allows investigating if users are satisfied or not.

This Model is applied by researchers in multitude environments were satisfaction is a variable of interest.

Bhattacherjee (2001a) has developed an expectation-confirmation model based on the expectancy-confirmation theory developed by Oliver (1980) to explain post-adoption attitude towards information systems. Bhattacherjee' (2001a) found that intentions usage of customers is connected to the user's acceptance of an Information System.

The ECM is widely used to examine the individual's attitude towards an IS (Chen et al., 2012).

The model was extended by several researchers by studying if it is applicable to add any hypothesis to the model. For example, Lin et al. (2005) extend the ECM model by adding an additional relationship between perceived playfulness and satisfaction.

Figure 1 is an example of ECM Model.

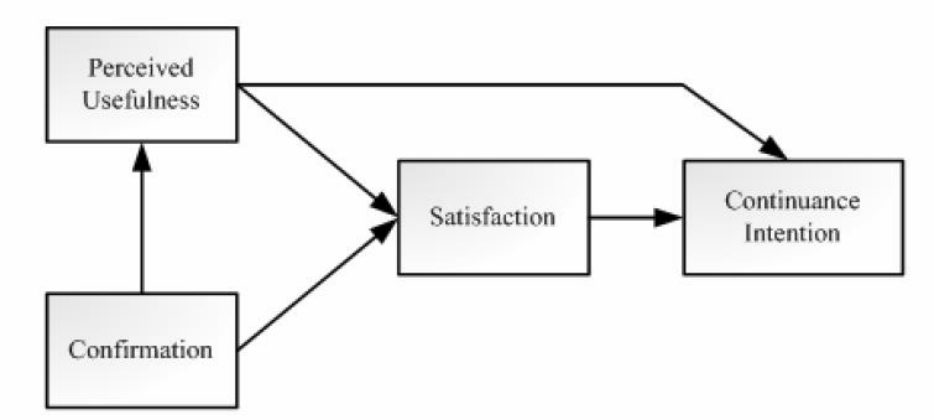

Figure 1: ECM Post-Adoption Model

2.3 General Factors Affecting the Adaption and Usage of LMS system:

In fact, several studies have investigated the different aspects of the Blackboard system. For instance, in the study conducted by Pishva et al (2010),that found that Blackboard has helped in online, face-to-face and blended learning, in 19 global universities included in the research. Moreover, both Selim (2003) and Taha (2007) concluded that Blackboard improved students' learning and accomplishment. Additionally, Taha (2007) reported that 78.4% of the 5,740 students involved in the study were pleased with utilizing the Blackboard system, with the only main setback being difficulties with technical services. A more recent study, Mouakket and Al-Hawari (2012) examined the students' e-loyalty intention towards blackboard by analyzing the direct influence of personal customs and indirect influence of satisfaction and computer anxiety.

Other studies looked into the impact of learning styles and patterns on students' performance (Lu, Yu, and Liu (2003) while several other researchers studied university student's perception of online education (Morss (1999), Wernet, Olliges, and Delicath (2000)). Conclusions drawn from these studies were that students favored web-based systems for educational purposes.

As for any system, successful implementation of LMS depends highly on the approval of the clients using it, which in this case are the students and instructors. Having looked at the former, Al-Busaidi and Al-Shihi (2012) argue that by accepting LMS, instructors will introduce the system and encourage the students to use it. Therefore, instructors' satisfaction with LMS will ensure its persistence and is in fact "a basic marketing element" according to Kelly and Bauer (2004). It was found by Woods et al (2004), in a survey of more than 800 instructors at 35 LMS-adopting institutions, that only a small percentage of the instructors adopted LMS in student learning evaluation or promotion. Yueh and Hsu (2008) reported that not having enough time and fear of technology are possible reasons for the instructors' constraint in using LMS. In addition to general surveys, various reports looked into gender differences in incorporating ICT in academia. Additionally, Kay (2006) and Wozney et al (2006) showed that male teachers utilized ICT more than female teachers. Comparably, Jamieson-Proctor, Burnett, Finger and Watson (2006) found that female teachers were incorporating technology into their teaching less than the male teachers. On the other hand, some argue that gender is not a predictor of ICT integration in academia (Andoh, 2012) .Moreover, Kay (2006), found

that quality training on technology can help diminish gender differences. In addition to gender, other studies looked into the relationship between ICT integration and teaching experience. And while some researchers found no relationship between teachers' teaching experience and experience in the use of ICT in a survey of 60 teachers; a survey of almost 3000 teachers found a positive relationship. In addition to the above mentioned factors, researchers have characterized several factors affecting the integration of ICT in educational institutions. These include user characteristics, content characteristics, technological considerations, and organizational capacity. Others found that factors influencing ICT integration range from organizational and individual factors, to technological and institutional ones (Andoh, 2012). While factors may influence the incorporation of technology, Rogers (1999) identified four important obstacles that play a role in ICT integration. These include lack of funds specified for technology-related needs, lack of sharing best practices across system, need of technical support staff, and need of release time and time for training faculty and staff.

2.4 New Estimated Model:

As mentioned in the previous section, many factors are effecting the continuous intention to use the system. Perceived usefulness, satisfactions, Training, Technical support, System Design, Computer Self – Efficacy are all proposed factors added to the Main ECM model (see figure 2) that will be described in details in the next section.

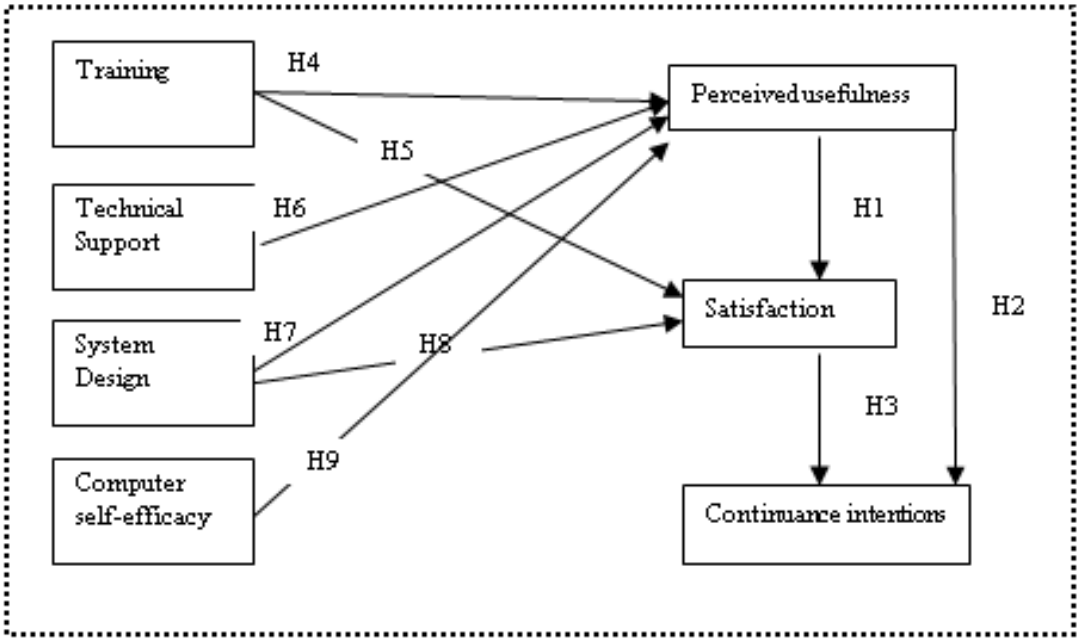

Figure 2: New Estemated Model

2.5 Proposed Hypotheses:

2.5.1: The Influence of Perceived Usefulness on Satisfaction and Continuance Intentions

Perceived usefulness (PU) refers to an individual's perception that the usage of IS will improve work performance (Davis et al., 1989). Prior research has established that the extent to which a user perceives an information system to be useful positively affects their satisfaction in using the system and their continuance intentions (Lin et al., 2005; Limayem et al., 2008). The study of Bhattacherjee (2001) has verified that perceived usefulness has a significant influence upon satisfaction and IS continuance intention among online banking customers. Similar results have been obtained from 210 Internet banking users in New Zealand (Hoehle et al., 2011).

Within e-learning context, Limayem and Cheung (2008) have found that perceived usefulness significantly influences satisfaction and continuance intentions among first year students of the faculty of business in a local university using the Blackboard system. Similar results have been obtained from Roca et al. (2006) who have investigated e-learning continuance intentions among a sample of 172 respondents. Sørebø and Sørebø (2009) have found that perceived usefulness significantly influences satisfaction among university teachers in Norway. Lee (2010) has found that perceived usefulness influence satisfaction and continuance intentions among students who are offered e-learning services in the continuing education program of National Pingtung University in Taiwan. In this study, we hypothesize that the more useful a system, the more they will be satisfied and inclined to continue using it among faculty members using the Blackboard system in the UAE.

Therefore, we hypothesize the following:

H1: A faculty member's perceived usefulness positively affects his/her satisfaction with Blackboard.

H2: A faculty member's perceived usefulness positively affects his/her intention to continue using Blackboard.

2.5.2: The Influence of Satisfaction on Continuance Intentions

Satisfaction can be defined as the degree to which one believes that an experience evokes positive feelings (Rust and Oliver, 1994). Continuance intention is the degree to which an individual is willing to use an IS in the future and to recommend it to others (e.g. friends) in the future. Prior studies have demonstrated the important effect of satisfaction on continuance intentions in various technologies such as electronic banking service (Bhattacherjee, 2001; Hoehle et al., 2011), accounting information systems (Ali et al., 2012), mobile banking services (Kumar et al., 2012).

Within the e-learning environment, satisfaction is considered an important factor in measuring the continuance usage intentions of e-learning (Hung et al., 2011). The study of Chang (2013) has found that satisfaction determines users' continuance intentions of e-learning systems in academic libraries. Chiu et al. (2005) have found that satisfaction influences the intention to continue using e-learning service in a study of 10 class sections of an education program of a university in Taiwan. In this study, we draw on past research suggestions to infer that a faculty member who is satisfied with Blackboard system will have a higher level of continuance intentions to use it.

Thus, the following hypothesis is proposed.

H3. A faculty member's satisfaction positively affects his/her continuance intention towards Blackboard.

2.5.3: The influence of Training on usefulness and satisfaction.

Lim, Lee and Nam (2007) identified factors that lead to effective online training and discover how these factors affect learning performance.

Their research reveals that traditional training methods are an important factor in enhancing online education. They also show that online education needs ease of interaction, computer self-efficacy, and efficient communication to be effective.

For any e-learning strategy, to be effective, it must be founded on five components; people, tools, training, processes and support. A well-structured training program is a key component of building a good communication strategy that is geared to cater to the teaching needs of each target group (Drlik and Skalka 2011).

In essence, all the five components are needed in order to create e-learning content as well as to prepare people to accept this new teaching and learning method.

Lareki, Morentin and Amenabar (2010) identify key factors that would help create a more effective ICT training methods, especially for university faculty and analyze the training needs. They also recommend that continuous assessments of faculty ICT training needs to be a vital part of the process of improving ICT use in universities and suggested increasing the training modules related to the content management systems for virtual teaching, Web 2.0 applications, and advanced programs.

Georgina and Olson (2008) prepared a study that evaluate how technology literacy and technology training affect faculty work performance. The Study results indicated a high correlation between faculty ICT skills and technological integration to their work. According to the study findings, faculty ICT skills and integration of technology in their work can be improved by training the faculty in small group setting.

Spotts (1999) who define user levels of technology who benefits of using technology. According to his study, He clearly stated that universities mandate their faculty to incorporate technology in their work, in return, the university must give them technology support and appropriate recognition.

In the study by Young, 2004, it has been stated that "Without proper training, teachers fumble with technology".

In addition, Randeree and Narwani (2009) found that effective user-training is a key to the successful implementation of the system. As the adoption of educational technology to support academic work increases in the UAE, the need for appropriate ICT training to help academic users to quickly learn and make effective use of the technology at their disposal also increases (Randeree 2006).

Finally, training is an appropriate technique to change attitudes towards ICT (Spacey et. al. 2003).

The associated hypotheses are:

H4: Faculty Training has a direct effect on the perceived usefulness

H5: Faculty Training has a direct effect on the satisfaction of Blackboard.

2.5.4: The influence of Technical Support on perceived usefulness.

Based on previous research, for any e-learning strategy to be effective, it must be founded on five components; people, tools, training, processes and support.

In order for individuals to have the appropriate knowledge and mechanism required to effect e-learning initiatives, support is required which will allow users to execute e-learning effectively (Pollock & Cornford, 2000).

In additional to that, Drlik and Skalka (2011) indicate that creating a platform for individuals to showcase their achievements in using the system, ask for help and exchange useful tips has proved to be helpful.

Available data reveals that technical support is key in impacting perceived ease of use and usefulness which are the dominant factors affecting the attitude of faculty members and students.

Ngai, Poon and Chan (2007) examine the factors affecting the acceptance of WebCT teaching and learning in Hong Kong institutions of higher education. They anticipate technical support to be one such external factor affecting the acceptance of WebCT for higher education. According to Ralph (1991), technical support is ‘‘knowledge people assisting the users of computer hardware and software products’’, which can include help desks, hotlines, online support services, machine-readable support knowledge bases, faxes, automated telephone voice response systems, remote control software and other facilities. Saying such, Technical support is one of the important factors to adopt technology in to the teaching process (Hofmann, 2002; Williams, 2002).

Instructor factors include self-efficacy, attitude toward LMS, experience, teaching style and personal innovativeness. Organization factors include motivators, technology alignment, organization support, technical support and training. Technology factors include system quality, information quality and service quality (Al-Busaidi and Al-Shihi, 2010,2012)

According to Sumner and Hostetler (1999), the organization factors that may influence the use of technology in teaching are motivators/demotivators, training, technology

alignment, organization support and technical support. Furthermore, it is important to provide instructors with technical support and training to address the need.

Therefore, Providing technical support is significant on promoting positive attitudes toward computer use (Igbaria, 1990).

According to Jones (2004), when a computer breaks down, it causes interruptions which, if not fixed accordingly due to lack of technical support, will force teachers to continue teaching without computers. Becta (2004) agreed that “if there is a lack of technical support available in a school, then it is likely that technical maintenance will not be carried out regularly, resulting in a higher risk of technical breakdowns” (p.16).

It is a fact that the lack of technical support will make teachers unfulfilled to use the Computer systems (Tong & Trinidad, 2005). Whereas rendering appropriate technical support to teachers will help these teachers to smoothly integrate ICT into their teaching (Korte & Husing, 2007).

The face-to-face or telephone contact are the best way to communicate between trainers and trainees because they allow verbal interaction and immediate responses which can lead to trainees’ perception of personal interest, politeness, and attention from the trainer.

Also, e-mail communication between the trainer and trainees is a good example of responsiveness, allowing trainees to receive feedback at any time and any place (Leidner & Jarvenpaa, 1995).

Therefore the following hypothesis is posed:

H6: Technical Support has a direct effect on perceived usefulness

2.5.5: The Influence of System Design on Perceived Usefulness and Satisfaction.

There are numerous studies done to measure the impact of the system design on satisfaction and other intentional aspects of behavior (Siomkos et al., 2006; Tractinsky et al., 2006).

According to Cyr et al. (2006) which examined how system design influences customers' loyalty within mobile industry context, revealed that design have a significant indirect relationship with loyalty through usefulness and ease of use. Al-hawari and Mouakket found that universities should emphasize and value factors such as system design and enjoyment in order to increase e-satisfaction.

It is highly important to mention that whether the proposed technology continues to be used or rejected, it largely depends on the quality of the user-interface (Cho, Cheng & Lai, 2009).

In their study, Te'eni and Sani-Kuperberg (2005) indicated that there are some design attributes that are more important to functionality whereas other attributes are more relevant to system support. System characteristics are, therefore, recognized as a crucial aspect that affects users' continuance in the use of a system (Hong, Thong, Wong, & Tam, 2002).

According to Gao (2002), system design features can impact users' attitudes towards e-shopping.

The problems of poorly designed interfaces are also reflected in recent statistics that only 30% of users could complete an e-learning course (Barolli, Koyama, Durresi, & de Marco, 2006).
At the end, user-interface design is an important factor for e-learning acceptance and usage (Cho, Cheng & Lai, 2009).

In addition to the User interface factor, the e-learning tools available have to be appealing to the targeted users by offering these learners different approaches to fulfill their learning goals (Gunasekaran, McNeil, & Shaul, 2002).

System's functionality can enable users to achieve their goals effectively which would help them enhance their PU of the system. Regardless of how functional the system is,

it won't do any good if the intended users are not able to access its functionality through the user-interface. Obviously, a simple and flexible user-interface will minimize the effort required to access the system as it will help the users to easily use the system (Cho, Cheng & Lai, 2009).

System design facilitates formative interactions and provides correct and sufficient information to reduce uncertainty (Daft & Lengel, 1986). Also, System quality has a strong positive effect on learners' satisfaction (Ozkan & Koseler, 2009) and beliefs (Davis, 1989).

Factors that are relevant for infrastructure and system quality include Internet quality, facilitating conditions, reliability, ease of use, system functionality, system interactivity, system response, and equipment accessibility (Lee, 2010; Lim et al., 2007; Webster & Hackley, 1997).

At the end, Courses, curriculums, and learning materials that are designed well are important elements that influence learning performance (Brophy, 2000).

This prompts us to come up with the following hypotheses:

H7: System Design has a direct effect on the usefulness

H8: System Design has a direct effect on the satisfaction of Blackboard.

2.5.6: The Influence of Computer Self-Efficacy on Perceived Usefulness

Computer self-efficacy is defined as the ability to use the computer to perform a task (compeau and Higgins, 1995). Several studies showed that the self-efficacy is an important factor indicate the decision to use the computer systems (Sumner and Hostetler, 1999, Venkatesh and Davis,(2000 ,Lee, M.-C. ,2010). So the instructors that are with low self-efficacy are less comfortable to use the computer systems.

Chiu and Wang (2008) have found that computer is one of the main predictors of users to continue using the web-based learning solutions. Similarly, Venkatesh and Davis (2000) discovered a correlation users' direct experience with the system with their judgment to its usefulness of the system based on their experience in using the system.

Asiri, Mahmud, Abu-Bakar & Ayub (2012) justified in their researches that the faculty member computer experience and skills in how to use the mentioned LMS affect the type of use for the LMS in the teaching environment.

According, we propose the following hypothesis:

H9: Computer self-efficacy has a positive effect on perceived usefulness

Chapter 3: Research Methodology

This chapter presents the research methodologies which have been used in our research.

A quantitative research method was conducted in order to measure and test the relationship between different factors.

Quantitative research is defined as ‘collecting numerical data that are analyzed using mathematically based methods (in particular statistics)’ (Aliaga and Gunderson ,2000).

The proposed model in this study was empirically tested using survey approach. The population of this survey consisted of faculty members from 14 different colleges in one well-known university in the United Arab Emirates using Learning management system (Blackboard) on a voluntary basis as a teaching platform. The preparations and distributions of the questionnaire were conducted in three phases:

First, the questionnaire was developed in English language and translated to Arabic language since the teaching method in the University is both in English and Arabic. Two English faculty members who are experts in translation examined the questionnaire and made suggestions about the clarity of the translated items.

Second, the questionnaire was pilot-tested with 5 randomly selected faculty members in the university. Based on the feedback from the pilot test, the questionnaire was refined and a revised final questionnaire was developed.

Third, a paper-based questionnaire was distributed by the researcher and with the support of faculty members and administration assistance staff in different colleges who volunteered to participate in distributing this survey. In addition, Online answers of the survey where received online through Google docs system.

The questionnaire consisted of 41 items (questions) divided into two main parts.

Appendix A presents a sample of the questionnaire in English and Arabic languages.

The first part, which consists of 9 items, contains demographic data: gender, age, nationality, college, job rank, teaching experience, frequency of Internet usage, and frequency of Blackboard usage.

The second part, consists of 32 items to assess seven hypotheses, has been measured using a five-point Likert scale, ranging from I-strongly agree to 5-strongly disagree, with the mid-point (3) representing the neutral answer. The Items used to measure each Hypothesis are presented in Table 1. These items are adopted from different research papers, sources, listed in Table 2 that supports the main module hypothesis.

Table 1: Summary of Questionnaire Items

Hypothesis ID	Hypothesis	Items ID	Items Discretions
PU	**Perceived usefulness**	PU1	10. Using Blackboard increases the quality of my educational work
		PU2	11. Using Blackboard makes me a more productive teacher
		PU3	12. Using Blackboard increases my work performance
		PU4	13. Using Blackboard enables me to accomplish my tasks more quickly
		PU5	14. Overall I find Blackboard to be useful
TR	**Training**	TR1	15. I receive training workshops on how to use Blackboard tools
		TR2	16. I receive on-line manuals on how to use Blackboard tools
		TR3	17. I receive seminars on the use of Blackboard tools
TS	**Technical support**	TS1	18. A help desk is available when there is a technical problem
		TS2	19. Blackboard Support employee is available when there is a technical problem
		TS3	20. E-mail enquiries can be made when there is a technical problem
		TS4	21. Technical support provided by the institution helps me to use Blackboard.
UID	**Blackboard user-interface design**	UID1	22. Blackboard Layout is user-friendly
		UID2	23. Blackboard Computerized instruction is clear
		UID3	24. Blackboard Layout is in good structure
		UID4	25. The layout design of Blackboard makes it easy to read

		UID5	26. Overall Blackboard user-interface design is satisfactory
CSE	**Computer self-efficacy**	CSE1	27. I could complete my job using Blackboard if I had never used a system like it before
		CSE2	28. I could complete my job using Blackboard if I had only the system manuals for reference
		CSE3	29. I could complete my job using Blackboard if I had seen someone else using it before trying it myself
		CSE4	30. I could complete my job using Blackboard if there was no one around to tell me what to do
		CSE5	31. I could complete my job using technology if someone else had helped me get started
		CSE6	32. I could complete my job using Blackboard if I could call someone for help if I got stuck
SAT	**Satisfaction**	SAT1	33. I am satisfied with the experience of using Blackboard
		SAT2	34. I think that I did the right thing when I decided to use Blackboard
		SAT3	35. I am satisfied with my decision to use Blackboard
		SAT4	36. I am very satisfied with the services provided by Blackboard
		SAT5	37. My decision to use Blackboard is a wise one
CI	**Continuance intention**	CI1	38. I intend to continue using Blackboard in the future
		CI2	39. I will keep using Blackboard as regularly as I do now
		CI3	40. I intend to increase my use of Blackboard in the future
		CI4	41. I will strongly recommend others to use Blackboard

Table 2: Summary of Questionnaire Items Sources

Hypotheses ID	Hypotheses	Items	Sources
PU	**Perceived usefulness**	PU1-PU5	Yoon, C. , Kim, S. (2007) Anne M. Sørebø, and Øystein Sørebø (2009)
TR	**Training**	TR1-TR3	Al-Busaidi, K., & Al-Shihi, H. (2010) Al-Busaidi, K. A. & Al-Shihi, H. (2012) Asiri, M. S., Mahmud, R., Abu-Bakar, K., & Ayub, A. F. (2012

TS	**Technical support**	TS1-TS4	Ngai, E.W.T. et al. (2007)
UID	**Blackboard user-interface design**	UID1-UID5	Cho, V. et al. (2009) Mouakket, S. and Al-hawari, M.A (2010)
CSE	**Computer self-efficacy**	CSE1-CSE6	H. Lee et al. (2009) Chiu, C.M. , Wang, E.T.G. (2008)
SAT	**Satisfaction**	SAT1-SAT5	Lee, M.-C. (2010) Sun, P. et al. (2008) Hung, M.-C. et al. (2011) Cho ,Cheng & Lai (2009)
CI	**Continuance intention**	CI1-CI4	Lee, M.-C. (2010) Cho, V. et al. (2009)

In order to measure **Perceived usefulness**, five questions were adopted from different sources such as C. Yoon, S. Kim (2007) & Anne M. Sørebø, and Øystein Sørebø (2009).

Three questions, scored on a five-point Likert scale, were adopted from Kamla Al-Busaidi , Hafedh Al-Shihi (2012) & Asiri, Mahmud, Abu-Bakar & Ayub (2012) to measure the **Training** hypothesis.

Technical support is measured by a total of four questions adapted from Ngai et al. (2007).

Five questionnaire items were adopted in the **Blackboard user-interface design** part from Cho et al. (2009) Al-hawari and Mouakket (2010).

Computer self-efficacy is measured with a total of 6 items as gathered from H. Lee et al. (2009) C.-M. Chiu & E.T.G. Wang (2008). In addition to the above, **Satisfaction** hypothesis that was measured by 5 items adopted from M.C. Hung et al. (2011) & Cho ,Cheng & Lai (2009)

Finally, We adopted 4 items from Cho, V. et al (2009) & M.C. Lee (2010) papers to measure the **Continuance intention** factor.

Chapter 4: Results and Findings

This chapter presents the discussion of the research findings. In addition, the proposed model hypotheses are analyzed.

4.1 Distributions and Demographic Data

The researcher distributed 200 hardcopies questionnaires to a total of 300 faculty members who teach at the university, in addition to the online distribution. 115 filled questionnaires were received back. After checking the questionnaires, we eliminated 7 questionnaires because of too many missing values and wrong data provided. The final number of valid responses was 108 which means that the response rate is 43%.It was emphasized that only faculty members who have used the blackboard will fill the questionnaire to ensure that the user will be able to answer all types of questioners' items once they are using the system.

The demographic characteristics of the sample are summarized in **Table 3**. The data show that male faculty members responded 75.9% of the sample, while female responses were 24.1%. This is due to the fact that the total number of female faculty members in the university constitutes about 15% of the total number of male faculty members.

Also, 13.9% of the respondents are from Sharia &Law & Arts colleges who mainly teach in Arabic. 18.5% were from college of Science and another 18.5% from college of Business. The remaining 25.9 % were from college of engineering & 13% from Communication & Community colleges. Finally, the percentage of participations received from Medical colleges and Health sciences were 8.3%.

Since most of the colleges majors are taught in English in this university, 74.1% from faculty members are teaching in English and 25.9 teach in Arabic.

In addition to the above, few percentage of faculty members spent less than 10 min per day on the internet or in blackboard (4.9%, 24.1%). The majority, 40.7%, of responses

spent more than 2 hours a day in internet while the majority of responses, 41.7%, spend around 10-30 minutes in blackboard. Other few responses are between those ratios.

Table 3: Summery of Demographic Characteristics

ID	Questions	Answer ID	Answers	Total Answers	Percentage (%)
A1	Gender	A1-1	Male	82	75.9
		A1-2	Female	26	24.1
A2	Age	A2-1	30-39	26	24.1
		A2-2	40-49	48	44.4
		A2-3	50-59	29	26.9
		A2-4	>60	5	4.6
A3	Nationality	A3-1	UAE	4	3.7
		A3-2	Arabic Country	82	75.9
		A3-3	Non Arabic Country	22	20.4
A4	College	A4-1	Sharia &Law & Arts	15	13.9
		A4-2	Science	20	18.5
		A4-3	Engineering	28	25.9
		A4-4	Business	20	18.5
		A4-5	Fine arts	2	1.9
		A4-6	Medical & Health science	9	8.3
		A4-7	Communication & Community	14	13
A5	Job rank	A5-1	Lecture	15	13.9
		A5-2	Assistant Professor	49	45.4
		A5-3	Associate Professor	35	32.4
		A5-4	Professor	9	8.3
A6	Teaching language	A6-1	Arabic	28	25.9
		A6-2	English	80	74.1
A7	Teaching experience	A7-1	no teaching experience	1	0.9
		A7-2	1-5 years	24	22.2
		A7-3	6-10 years	25	23.1
		A7-4	11-15 years	16	14.8
		A7-5	>15 years	42	38.9
A8	On average, approximately how many minutes per day do you spend on using the Internet?	A8-1	Less than 10 minutes	5	4.6
		A8-2	10-30 minutes	12	11.1
		A8-3	31-60 minutes	20	18.5
		A8-4	61-120 minutes	27	25.0
		A8-5	more than 120 minutes (>2 hrs)	44	40.7

A9	On average, approximately how many minutes per day do you spend on using Blackboard?	A9-1	Less than 10 minutes	26	24.1
		A9-2	10-30 minutes	45	41.7
		A9-3	31-60 minutes	24	22.2
		A9-4	61-120 minutes	7	6.5
		A9-5	more than 120 minutes (>2 hrs)	6	5.6

4.2 Statistical Approach

A statistical analysis was performed to test the relationship between the assumed factors (variables) used in the proposed module through a multiple regression technique that examines the relationship between variables to predict their future behavior. This technique predicts participant value on one variable on the basis of their value on other variables..

In addition, the technique uses “independent variables” that will influence some other “dependent variable”.

We used the SPSS statistics software to generate statistics and relationships. SPSS is a Windows based program that is used to analysis data through tables and graphs. SPSS is capable of handling large amounts of data (Field, 2009, Discovering statistics using SPSS).

The following steps are performed in the SPSS to generate the needed analysis results:

- SPSS datasets consist of two-dimensional table structure, where the rows are the participants’ values for the questionnaire (108 rows) and the columns represent the values , answers for each item in the questionnaire (41 columns).
- The reliability of each variable is defined through Cronbach’s Alpha value. (see Section 4.3).
- The weights for each hypothesis relationship is generated through the Beta value (see Section 4.4)

4.3 Instrument Reliability and Validity

To test the module constrains, the reliability of each hypothesis was generated by applying Cronbach's Alpha as shown in Table 4.

Table 4: Reliability of the Hypothesis

Variable	**Reliability (Cronbach's Alpha)**	**# items**
Perceived usefulness	.953	5 items
Training	.840	3 items
Technical support	.872	4 items
Blackboard user-interface design	.948	5 items
Computer self-efficacy	.803	6 items
Satisfaction	.924	5 items
Continuance intention	.887	4 items

Cronbach's Alpha is a measurement tool to determine how closely a set of items are related.

It is most commonly used when one has a scale of multiple Likert questions in a questionnaire and the target is to determine if this scale is reliable

The theoretical value of alpha varies from zero to 1 and higher values of alpha are more desirable. Nunnally and Bernstein (1994) recommended the value of 0.70 or higher.

As shown in Table 4, the value of the Cronbach's Alpha range from 0.803 and .953, which is higher than the acceptable level of 0.70.

4.4 Regression Method

The regression procedure is found in SPSS in the “Analyze” menu, under “Regression”, ,then by selecting “Linear” in the Regression sub-menu. Then a dialog box will appear asking for the 2 variables that are part of the hypothesis.

PU -→ SAT hypothesis is used as an example here. The rest of the hypotheses analyses are listed in details in **Appendix B**.

The output of the SPSS regression consists of several sections:

A. Model Summary:

This section shows the correlation between the two variables (R). (see Table 5 as an example of Model Summary table for **PU -→ SAT** hypothesis)

Table 5: Model Summary Table

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.555[a]	.308	.302	.69726

a. Predictors: (Constant), PU

B. ANOVA:

This section shows the p-value of the predictor’s (PU) effect on the criterion variable(SAT). The p-value is our measure of statistical significance and will tell us whether it is likely that we would have found a relationship of this size in the sample if there was no relationship in the population. (see Table 6 as an example of ANOVA table for **PU -→ SAT** hypothesis)

The P-value should be <=0.001 to consider this relationship.

Table 6: ANOVA Table

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	22.973	1	22.973	47.253	.000[b]
	Residual	51.534	106	.486		
	Total	74.507	107			

a. Dependent Variable: SAT

b. Predictors: (Constant), PU

C. Coefficients:

This section shows the standardized coefficients (beta coefficients) for the actual regression equation which refers to how many standard deviations a variable will change, per standard deviation increase in the predictor variable. Saying such, then we can know which variables have more effects to each other in a multiple regression analysis (see Table 5 as an example of Coefficients table for **PU -→ SAT** hypothesis) .

Table 7: Coefficients Table

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.294	.273		8.412	.000
	PU	.455	.066	.555	6.874	.000

a. Dependent Variable: SAT

As an internal process of regression, SPSS uses the internal steps shown below to determine the Beta value:

1. Calculate the mean and standard deviation.
2. Create a new standardized version of each variable. To get it, create a new variable in which you subtract the mean from the original value, then divide that by the standard error.
3. Use those standardized versions in the regression.

Table 8 displays a summary of the regression weights results for all hypotheses. The Standardized Coefficient (Beta) and The Significance (P) value are calculated.

Table 8 Regression Weights Results

Hypothesis ID	Hypothesis	Standardized Coefficient (Beta)	Significance (P)
H1	**PU -→ SAT**	**0.555**	**0.000**
H2	**PU -→ SI**	**0.647**	**0.000**
H3	**SAT -→ CI**	**0.773**	**0.000**
H4	**TR -→ PU**	**0.305**	**0.001**
H5	**TR -→ SAT**	**0.356**	**0.000**
H6	**TS -→ PU**	**0.425**	**0.000**
H7	**UID -→ PU**	**0.412**	**0.000**
H8	**UID -→ SAT**	**0.650**	**0.000**
H9	**CSE -→ PU**	**0.355**	**0.000**

4.5 Results

The results are as follows:

- As shown in table 8, all P values were matching the needed criteria, therefore all the proposed hypotheses are supported in this module. Similarly, all the extra factors added to the ECM model are positively effecting the intention to use the Learning Management System.
- H3 hypothesis has a high value in the model which means that Satisfaction factor is highly affecting the Continuous intention factor. So if Faculty members are satisfied then they are highly continuing using the system.
- All H4, H6, H7and H9 relationships are related to the Perceived usefulness. It is shown that Technical Support and System Design have more positive effect to PU than Training and Computer Self-Efficacy which means that If faculty members are receiving training and the system has a good design, then they will feel the usefulness of the system which will yield to continuous intention to use the LMS system.
- System Design and Training have a direct and positive influence on Satisfaction indicating support for H5 and H8. The results confirm that the System Design positively affecting the satisfaction more that Training. In other words, Faculty members will be more satisfied with the LMS if the system is well designed rather than if they receive trainings.

4.6 Final Module

After the examination of each of the nine hypotheses was made, The **Figure 3** shows the results of the analysis for our proposed model, including the Standardized Coefficient (Beta) and Significance (P).

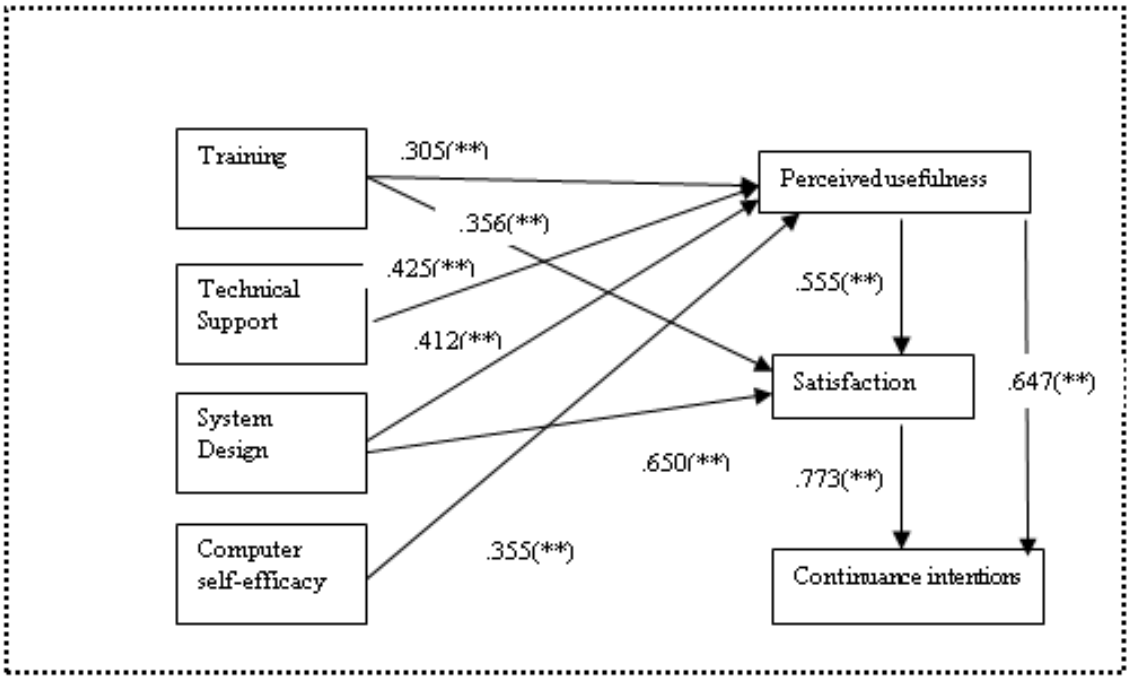

Figure 3: Analyze Results for the Proposed Module

Chapter 5: Discussion and Conclusion

This chapter concludes with the main results and findings of the research. Then the research ends with prospective future research that can be done.

The results of this study point out the main factors that are influencing faculty members' intention toward using the blackboard system. In more details, this study highlighted the relationships between the suggested factors in our suggested new module.

This study has both theoretical and practical bases as it proposes a new model for intention to use the blackboard system based on the ECM model that validates new and existing relationships from previous studies.

The findings supported the assumed hypotheses in the new model. In addition, the study found that system design and technical support factors are very important factors that effect the intention to use the system in addition to the satisfaction and usefulness.

The results of this study can support other universities learning managers, administrators and trainers with better knowledge in how to effect the faculty members to use the blackboard system based on our findings.

This study has its limitations, which lead to some suggestions to carry out for future research.

First, this study discussed a single case which makes it hard to be generalized to other universities around the world. In addition to that, no cooperation to other cases and universities is done to be able to deeply understand the case and narrow the differences issues and aspects.

Second, not all results of the study can be applied to other universities in the Middle East or in the world, they are likely to be applied to universities which are using the blending learning environment and may share some of the environment concepts in the way the LMS is designed and the training and technical support are conducted.

Furthermore, extra responses will help improve the results of the questionnaires.

References

Abu Shawar, B., (2009). *Learning Management System and its Relationship with Knowledge Management*. Faculty of Computer & Information science, Ain Sham University, 4th International Conference on Intelligent Computing and Information Systems. Cairo, Egypt March 19-22, 2009.

Albirini, A. (2006). *Teachers' attitudes toward information and communication technologies: The case of Syrian EFL teachers,* Computers & Education, 47, 373–398. doi:10.1016/j.compedu.2004.10.013.

Al-Busaidi, K. A. and Al-Shihi, H. (2012). *Key factors to instructors' satisfaction of learning management systems in blended learning* , J. Computing in Higher Education 24 (1) , 18-39.

Al-Busaidi, K. and Al-Shihi, H. (2010). *Instructors' acceptance of learning management systems: A theoretical framework.* Communications of IBIMA. Retrieved from http://www.ibimapublishing.com/journals/CIBIMA/2010/862128/a862128.html.

Aliaga, M. and Gunderson, B. (2002). *Interactive Statistics. Second Edition.* Harlow: Pearson Education.

Anne M. Sørebø, and Øystein Sørebø (2009). *Understanding E-Learning Satisfaction in the Context of University Teachers*, International Journal of Humanities and Social Sciences 3:4, pp. 309-312.

Arbaugh, J. B. (2002). *Managing the on-line classroom: a study of technological and behavioral characteristics of web-based MBA courses*, Journal of High Technology Management Research, 13(2), 203–223.

Asiri, M. S., Mahmud, R., Abu-Bakar, K., and Ayub, A. F. (2012). *Factors influencing the use of learning management system in Saudi Arabian Higher Education: A theoretical framework*, Higher Education Studies, 2(2).

Azwadi,Ali, Mohd, Shaari Abdul Rahman and Wan, Nur Syahida Wan Ismail (2012), ***Predicting Continuance Intention to Use Accounting Information Systems Among SMEs in Terengganu, Malaysia*****,** Int. Journal of Economics and Management **6(2):** 295 – 320.

Barolli, L., Koyama, A., Durresi, A., & de Marco, G. (2006). *A web-based e-learning system for increasing study efficiency by stimulating learner's motivation*. Information System Frontier, 8, 297–306.

Becta. (2004*). A review of the research literature on barriers to the uptake of ICT by teachers.* Retrieved June 10, 2010, from http://partners.becta.org.uk/page_documents/research/barriers.pdf.

Bhattacherjee, A. (2001). *Understanding information systems continuance: An expectation-confirmation model.* MIS Quarterly, *25*, 3 351-370.

Bhuasiri, W., Xaymoungkhoun, O., Zo, H. and Rho, J. (2012). *Critical success factors for e-learning in developing countries: A comparative analysis between ICT experts and faculty*, Computers & Education, 58, 843–855.

Brophy, J. (2000). *Teaching.* Geneva, Switzerland: PCL, Lausanne.

Buabeng-Andoh, C. (2012). *Factors influencing teachers' adoption and integration of information and communication technology into teaching: A review of the literature,* International Journal of Education and Development using Information and Communication Technology (IJEDICT), Vol. 8, Issue 1, pp. 136-155.

Burniske, R. W., and Monke, L. (2001). *Breaking down the digital walls*. Albany, NY: State University of New York Press.

Chang, C-C (2013). *Exploring the determinants of e-learning systems continuance intention in academic libraries, Library Management,* Vol. 34 No. 1/2, 2013, pp. 40-55.

Chiu, C. M. and Wang, E. T. G. (2008). *Understanding Web-based learning continuance intention: The role of subjective task value. Information and Management*, 45(3), 194-201.

Chiu, C. M., Hsu, M. H., Sun, S. Y., Lin, T. C., & Sun, P. C. (2005). *Usability, quality, value and e-learning continuance decisions,*Computers & Education*, 45*, 399–416.

Cho, T. C. , Cheng, E. and Jennifer, W. M. (2009). *The role of perceived user-interface design in continued usage intention of self-paced e-learning tools,* Computers & Education 53(2): 216-227

Compeau, D.R., & Higgins, C.A. (1995,). *Computer Self-Efficacy: Development of a Measure and Initial Test*. MIS Quarterly, 19, (2), 189-211.

Cyr, D., Head, M. and Ivanov, A. (2006). *Design aesthetics leading to m-loyalty in mobile commerce*, Information & Management, Vol. 43 No. 8, pp. 950-63.

Daft, R. L., and Lengel, R. H. (1986). *Organizational information requirements, media richness and structural design, Management Science*, 32(5), 554–571.

Davis, F. D. (1989). *Usefulness, perceived ease of use, and user acceptance of information technology*, MIS Quarterly, 13(3), 319–340.

Drlik, M., & Skalka, J. (2011). *Virtual Faculty Development Using Top-down Implementation Strategy and Adapted EES Model*, Procedia - Social and Behavioral Sciences, 28(0), 616-621.

Drlík, M., Švec, P., Skalka, J., & Kapusta, J. (2008). *E-learning portal integration to the information system of Constantine the Philosopher University in Nitra*, In EUNIS 2008 Vision IT : visions for IT in higher education. Aarhus: University of Aarhus.

Falvo, D. A., & Johnson, B. F. (2007). *The use of learning management systems in the United States. TechTrends*, 51(2), 40–45. doi:10.1007/s11528-007-0025-9.

Field, A. P. (2009). *Discovering statistics using SPSS*, 3rd ed. London: Sage.

Gao, Y. (2002). *Linking information content, presentation attributes, and system design features with consumer attitudes in hypermedia commercial presentations,* PhD dissertation, City University of New York.

Garrison, D. R. & Anderson, T., & Archer, W., (2000). *Critical inquiry in a text-based environment*: Computer conferencing in higher education. The Internet and Higher Education, 2(2-3), pp. 87-105.

Gautreau, C. (2011). "*Motivational Factors Affecting the Integration of a Learning Management System by Faculty*." Journal of Educators Online 8.1

Georgina, D. A., & Olson, M. R. (2008). *Integration of technology in higher education: A review of faculty self-perceptions*. Internet and Higher Education*, 11,* 1–8.

Gunasekaran, A., McNeil, R. D., & Shaul, D. (2002). *E-learning: Research and applications. Industrial and Commercial Training*, 34(2), 44–53.

Herzberg, F. (1968). *One more time: How do you motivate employees?* Harvard Business Review, 53-62.

Hoehle, H., Sid Huff, S., and Goode, S. (2011). *The role of continuous trust in information systems continuance*, Journal of Computer Information Systems, vol. 52, no. 4, pp. 1-9.

Hofmann, D. W. (2002). *Internet-based distance learning in higher education*, Tech Directions, 62(1), 28–32.

Hong, W., Thong, J. Y. L., Wong, W., & Tam, K. (2002). *Determinants of user acceptance of digital libraries: An empirical examination of individual differences and system characteristic*s, Journal of Management Information Systems, 18(3), 97–124.

Hrastinski, S. (2008). *Asynchronous & synchronous: A study of asynchronous and synchronous e-learning methods discovered that each supports different purposes*. Educause quarterly, 4.

Hung, M-C, Chang, I-C, and Hwang, H-G (2011) *Exploring academic teachers' continuance toward the web-based learning system: The role of causal attributions*, Computers & Education 57 (2011) 1530–1543.

Igbaria, M. (1990). *End-user computing effectiveness: a structural equation model,* OMEGA, 18(6), 637–652.

Jamal, H. & Shanaah, A. (2011).*The Role of Learning Management Systems in Educational Environments: An Exploratory Case Study*, Linnaeus University, Sweden.

Jones, A. (2004). *A Review of the Research Literature on Barriers to the Uptake of ICT by Teachers*. British Educational Communications and Technology Agency, Retrieved May 20, 2010 from http://www.becta.org.uk.

Kay, R. (2006). *Addressing gender differences in computer ability, attitudes and use: The laptop effect*. Journal of Educational Computing Research, vol. 34, no. 2, pp. 187-211.

Kelly, T., & Bauer, D. (2004). *Managing intellectual capital-via e-learning-at Cisco*. In C. Holsapple (Ed.), Handbook on knowledge management 2: Knowledge directions (pp. 511–532). Berlin, Germany: Springer.

Korte, W.B., and Husing, T. (2007). *Benchmarking access and use of ICT in European schools 2006: Results from Head teacher and a classroom surveys in 27 European countries*, elearning papers, vol. 29, no. 10, pp. 1-6.

Lareki, A., de Morentin, J.I.M. & Amenabar, N. (2010). Towards an Efficient Training of University Faculty on ICTs. Computers & Education, 54(2), 491-497. Retrieved January 31, 2014 from http://www.editlib.org/p/67231.

Lee, M.-C. (2010). *Explaining and predicting users' continuance intention toward e-learning: an extension of the expectation-confirmation model.* Computers & Education, 54(2), 506–516.

Leidner, D. E., and Jarvenpaa, S. L. (1995). *The use of information technology to enhance management school education: A theoretical view*, MIS Quarterly, 1, 265–291.

Lim, H., Lee, S.-G., & Nam, K. (2007). *Validating e-learning factors affecting training effectiveness*. International Journal of Information Management, 27(1), 22–35.

Limayem, M. and Cheung, C.M.K. (2008). *Understanding information systems continuance: The case of Internet-based learning technologies*, Information & Management, 45, 227–232.

Lin, C.S., Wu, S., and Tsai, R.J. (2005). *Integrating perceived playfulness into expectation-confirmation model for web portal context*. Information & Management *42*, 5 683-693.

Mashhour, A., & Saleh, Z. (2010). *Evaluating E-learning in Jordanian institutions: Why is it lagging?.* Quarterly Review of Distance Education, 11(4), 269–279.

McKerlich, R., & Anderson, T., (2007). *Community of inquiry and learning in immersive environments*. Journal of Asynchronous Learning Networks, 77(4), pp. 35-52.

Mouakket, S. and Al-hawari, M.A (2010) .*The influence of Technology Acceptance Model (TAM) factors on students' e-satisfaction and e-retention within the context of UAE e-learning*, Journal of Education, Business and Society: Contemporary Middle Eastern , Issues, 3, 4, 2010. 299-314

Mouakket, S. and Al-hawari, M.A. (2012). *Investigating the factors affecting university students' e-loyalty intention towards the Blackboard system*, Int. J. Business Information Systems, Vol. 9, No. 3, pp.239–260.

Mun, Y. Yi and Hwang, Y. (2003). *Predicting the use of web-based information systems: self-efficacy, enjoyment, learning goal orientation, and the technology acceptance model*, International Journal of Human-Computer Studies, v.59 n.4, p.431-449.

Ngai, E.W.T., Poon, J.K.L., and Chan, Y.H.C. (2007). *Empirical examination of the adoption of WebCT using TAM. Computers & Education*, 48(2), 250-267.

Nunnally, J.C. and Bernstein, I.H. (1994). *Psychometric Theory*, 3rd ed., McGraw-Hill, New York.

Oye, N. D., Salleh, M., & Iahad, N. A. (2012). *E-learning methodologies and tools*. International Journal of Advanced Computer Science and Applications, 3(2).

Ozkan, S., and 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.

Pishva, D., Nishantha, G.G.D. and Dang, H. A. (2010). *A Survey on How Blackboard is Assisting Educational Institutions around the World and the Future Trends.* In: 12th International

Conference on Advanced Communication Technology (ICACT). Phoenix Park, Korea, Feb. 7-10, 2010. IEEE.

Pollock, N., & Cornford, J. (2000). *Theory and Practice of the Virtual University*. Ariadne.

Ralph, W. (1991). *Help! The art of computer technical support*, California: Peachpit Press.

Randeree K., *Active Learning,* Strategies in Engineering Education in the Gulf Countries, International Journal of Learning, Vol. 12, No. 11, pp 1-8.

Randeree, K. and Narwani, A. (2009). *Managing Change in Higher Education: An Exploration of the Role of Training in ICT Enabled Institutions in the United Arab Emirates* ,The International Journal of Learning 16, no. 4 447-456.

Reji Kumar, G.; Ravindran, D. Sudharani (2012) *AN EMPIRICAL STUDY ON SERVICE QUALITY PERCEPTIONS AND CONTINUANCE INTENTION IN MOBILE BANKING CONTEXT IN INDIA*, Journal of Internet Banking & Commerce;Apr2012, Vol. 17 Issue 1, p. 1-22.

Roca, J. C., Chiu, C-M, and Mastinez, F. J. (2006) .*Understanding e-learning continuance intention: An extension of the technology acceptance model*, International journal of Human-Computer Studies*,* Vol. 64, No. 8, pp. 683-696.

Rogers, P. L. (1999). *Barriers to adopting emerging technologies in education*. ERIC Document Reproduction. No. ED429556.

Rust, R.T. and Oliver, R.L. (1994), "*Service quality: insights and managerial implication from the frontier*", in Rust, T.R. and Oliver, R.L. (Eds), Service Quality: New Directions in Theory and Practice, Sage, Thousand Oaks, CA, pp. 1-19.

Selim, H. M. (2003). *An empirical investigation of student acceptance of course websites*. Computers & Education, 40, 343–360.

Selim, H. M. (2007). *Critical success factors for e-learning acceptance: confirmatory factor models*, Computers & Education, 49(2), 396–413.

Siomkos, G., Vrechopoulos, A. and Magganari, E. (2006). *Web-atmospheric effects on online consumer behaviour: a review of the literature*, Proceedings of the IADIS International Conference e-Commerce, Barcelona, Spain, 9-11 December (CD).

Siritongthaworn, S., Krairit, D., Dimmitt, N. J. and Paul, H. (2006). *The study of e-learning technology implementation: a preliminary investigation of universities in Thailand. Education and Information Technologies*, 11(2), 137–160.

Spacey R., Goulding A., and Murray I. (2003), *ICT and Change in UK Public Libraries: Does Training Matter?,* Library Management, Vol. 24, No. 1/2

Spotts, T. (1999). *Discriminating factors in faculty use of instructional technology in higher education*. Educational Technology & Society, 2(4), 92−99.

Sumner, M. and Hostetler, D. (1999). *Factors Influencing the Adoption of Technology in Teaching* , The Journal of Computer Information Systems, 40(1), 81-87

Sun, P.-C., Tsai, R. J., Finger, G., Chen, Y.-Y., and Yeh, D. (2008). *What drives a successful e-learning? An empirical investigation of the critical factors influencing learner satisfaction*. Computers & Education, 50(4), 1183–1202.

Taha, A. (2007). *Networked e-information services to support the e-learning process at UAE University*, The Electronic Library, Vol. 25 No. 3, pp. 349-62.

Te'eni, D., & Sani-Kuperberg, Z. (2005). *Levels of abstraction in designs of human–computer interaction: The case of e-mail,* Computers in Human Behaviour, 21, 817–830.

Thompson, R., Compeau, D., and Higgins, C. (2006). *Intentions to use information technologies: An integrative model*. Journal of Organizational and End User Computing, 18(3), 25–47.

Tong, K.P., and Triniada, S.G. (2005). *Conditions and constraints of sustainable innovative pedagogical practices using technology*, Journal of International Electronic for leadership in learning, vol. 9, no.3, pp. 1-27.

Tractinsky, N., Cokhavi, A., Kirschenbaum, M. and Sharfi, T. (2006). *Evaluating the consistency of immediate aesthetic perceptions of web pages*, International Journal of Human-Computer Studies, Vol. 64 No. 11, pp. 1071-83.

Venkatesh, V. and Davis, F. (2000).*A Theoretical Extension of the Technology Acceptance Model: Four<p> Longitudinal Field Studies*, Management Science 46, 186-204

Vrielink, R. (2006), "*Predicting the use of blackboard and predicting the use of a personal digital analyser with the technology acceptance model*", Current Developments in Technology-Assisted Education, FORMATEX, Badajoz, pp. 591-5.

Watson, G. (2006). *Technology Professional development: Long-term effects on teacher selfefficacy*, Journal of Technology and Teacher Education, vol. 14, no. 1, pp. 151 166.

Webster, J., and Hackley, P. (1997). *Teaching effectiveness in technology-mediated distance learning*. The Academy of Management Journal, 40(6), 1282–1309.

Williams, P. (2002). *The learning Web: the development, implementation and evaluation of Internet-based undergraduate materials for the teaching of key skills*, Active Learning in Higher Education, 3(1), 40–53.

Woods, R., Baker, J., & Hopper, D. (2004). *Hybrid structure: Faculty use and perception of Web-based courseware as a supplement to face-to-face instruction*. Internet & Higher Education, 7(4), 281–297. doi:10.1016/j.iheduc.2004.09.002.

Wozney, L., Venkatesh, V., & Abrami, P.C. (2006). *Implementing computer technologies: Teachers' perceptions and practices*. Journal of Technology and teacher education, vol. 14, no.1, pp. 173-207.

Yoon, C. and Kim, S. (2007). *Convenience and TAM in a ubiquitous computing environment: The case of wireless LAN Electronic Commerce Research and Applications*, 6, 102–112.

Young, J. (2004*). When good technology means bad teaching: Giving professors gadgets without training can do more harm than good in the classroom*, stude Yu nts say. The Chronicle of Higher Education, 51(12), A31−A37.

Yueh, H.-P., & Hsu, S. (2008). *Designing a learning management system to support instruction. Communication of the ACM*, 51(4), 59–63.

Appendix A: Questionnaires

A.1: English Questionnaire

Questionnaire

Dear participant:

The aim of this questionnaire is to understand the factors that influence your intentions to continue using Blackboard which is provided by the University. By filling this form, you will be helping the researchers to understand your perceptions of this service and shed some lights on your areas of concerns, thus providing us with the means to improve this service.

We ensure the privacy of the information provided in this questionnaire.

Important note

If you do NOT use the service of Blackboard please do NOT fill this survey.

Thank you for your cooperation.

Section 1: Participant background information

A- Demographic information						
1. Gender	Male ☐	Female ☐				
2. Age	30-39 ☐	40-49 ☐	50-59 ☐	>60 ☐		
3. Nationality	UAE ☐	Arabic Country ☐	Non Arabic Country ☐			
4. College	Sharia &Law & Arts ☐	Science ☐	Engineering ☐	Business ☐	Fine arts ☐	Medical & Health science ☐	Communication & Community ☐
5. Job rank:	Lecture ☐	Assistant Professor ☐	Associate Professor ☐	Professor ☐		
6. Teaching language	Arabic ☐	English ☐				
7. Teaching experience	no teaching experience ☐	1-5 years ☐	6-10 years ☐	11-15 years ☐	>15 years ☐	
8. On average, approximately how many minutes per day do you spend on using the Internet?	Less than 10 minutes ☐	10-30 minutes ☐	31-60 minutes ☐	61-120 minutes ☐	more than 120 minutes (>2 hrs) ☐	
9. On average, approximately how many minutes per day do you spend on using Blackboard?	Less than 10 minutes ☐	10-30 minutes ☐	31-60 minutes ☐	61-120 minutes ☐	more than 120 minutes (>2 hrs) ☐	

Section 2: Factors affecting your intention to continue using Blackboard

B- Perceived usefulness					
Please choose one option	Strongly disagree	Slightly disagree	Neutral	Slightly agree	Strongly agree
10. Using Blackboard increases the quality of my educational work	☐	☐	☐	☐	☐
11. Using Blackboard makes me a more productive teacher	☐	☐	☐	☐	☐
12. Using Blackboard increases my work performance	☐	☐	☐	☐	☐
13. Using Blackboard enables me to accomplish my tasks more quickly	☐	☐	☐	☐	☐
14. Overall I find Blackboard to be useful	☐	☐	☐	☐	☐

C- Training					
Please choose one option	Strongly disagree	Slightly disagree	Neutral	Slightly agree	Strongly agree
15. I receive training workshops on how to use Blackboard tools	☐	☐	☐	☐	☐
16. I receive on-line manuals on how to use Blackboard tools	☐	☐	☐	☐	☐
17. I receive seminars on the use of Blackboard tools	☐	☐	☐	☐	☐

D- Technical support					
Please choose one option	Strongly disagree	Slightly disagree	Neutral	Slightly agree	Strongly agree
18. A help desk is available when there is a technical problem	☐	☐	☐	☐	☐
19. Blackboard Support employee is available when there is a technical problem	☐	☐	☐	☐	☐
20. E-mail enquiries can be made when there is a technical problem	☐	☐	☐	☐	☐
21. Technical support provided by the institution helps me to use Blackboard.	☐	☐	☐	☐	☐

E- Blackboard user-interface design					
Please choose one option	Strongly disagree	Slightly disagree	Neutral	Slightly agree	Strongly agree
22. Blackboard Layout is user-friendly	☐	☐	☐	☐	☐
23. Blackboard Computerized instruction is clear	☐	☐	☐	☐	☐
24. Blackboard Layout is in good structure	☐	☐	☐	☐	☐
25. The layout design of Blackboard makes it easy to read	☐	☐	☐	☐	☐
26. Overall Blackboard user-interface design is satisfactory	☐	☐	☐	☐	☐

F- Computer self-efficacy					
Please choose one option	Strongly disagree	Slightly disagree	Neutral	Slightly agree	Strongly agree
27. I could complete my job using Blackboard if I had never used a system like it before	☐	☐	☐	☐	☐
28. I could complete my job using Blackboard if I had only the system manuals for reference	☐	☐	☐	☐	☐
29. I could complete my job using Blackboard if I had seen someone else using it before trying it myself	☐	☐	☐	☐	☐

30. I could complete my job using Blackboard if there was no one around to tell me what to do	☐	☐	☐	☐	☐
31. I could complete my job using technology if someone else had helped me get started	☐	☐	☐	☐	☐
32. I could complete my job using Blackboard if I could call someone for help if I got stuck	☐	☐	☐	☐	☐

G- Satisfaction					
Please choose one option	Strongly disagree	Slightly disagree	Neutral	Slightly agree	Strongly agree
33. I am satisfied with the experience of using Blackboard	☐	☐	☐	☐	☐
34. I think that I did the right thing when I decided to use Blackboard	☐	☐	☐	☐	☐
35. I am satisfied with my decision to use Blackboard	☐	☐	☐	☐	☐
36. I am very satisfied with the services provided by Blackboard	☐	☐	☐	☐	☐
37. My decision to use Blackboard is a wise one	☐	☐	☐	☐	☐

H- Continuance intention					
Please choose one option	Strongly disagree	Slightly disagree	Neutral	Slightly agree	Strongly agree
38. I intend to continue using Blackboard in the future	☐	☐	☐	☐	☐
39. I will keep using Blackboard as regularly as I do now	☐	☐	☐	☐	☐
40. I intend to increase my use of Blackboard in the future	☐	☐	☐	☐	☐
41. I will strongly recommend others to use Blackboard	☐	☐	☐	☐	☐

A.2: Arabic Questionnaire

استطلاع رأي

عزيزي المشارك:

الهدف من هذا الاستبيان هو فهم العوامل التي تؤثر على الاستمرار في استخدام نظام بلاكبورد الذي يتوفر في الجامعة. إن تعبئة هذا النموذج، سوف تساعد الباحثين على فهم تصورات لهذه الخدمة وإلقاء بعض الأضواء على المجالات الخاصة بك ، لتكون وسيلة لتحسين هذه الخدمة.

نحن نضمن خصوصية المعلومات المقدمة في هذا الاستبيان.

ملاحظة هامة

إذا كنت لا تستخدم نظام بلاكبورد يرجى عدم ملء هذا الاستطلاع.

شكرا لتعاونكم.

القسم 1: معلومات أساسية عن المشارك

A-المعلومات العامة						
1. الجنس	ذكر ☐	أنثى ☐				
2. العمر	30-39 ☐	40-49 ☐	50-59 ☐	> 60 ☐		
3. الجنسية	الإمارات العربية المتحدة ☐	دولة عربية ☐	دولة غير عربية ☐			
4. الكلية	الشريعة والقانون والأداب ☐	العلوم ☐	الهندسة ☐	إدارة الأعمال ☐	الفنون الجميلة ☐	الكليات الطبية والعلوم الصحية ☐	الاتصال ☐ المجتمع ☐
5. رتبة الوظيفة	محاضر ☐	أستاذ مساعد ☐	أستاذ مشارك ☐	أستاذ ☐		
6. لغة التدريس	العربية ☐	الإنجليزية ☐				
7. الخبرة في مجال التدريس	لا خبرة في مجال التدريس ☐	1-5 سنوات ☐	6-10 سنوات ☐	11-15 سنة ☐	> 15 سنة ☐	
8. في المتوسط، حوالي كم دقيقة في اليوم تمضي على استخدام الإنترنت؟	أقل من 10 دقائق ☐	10-30 دقيقة ☐	31-60 دقيقة ☐	61-120 دقيقة ☐	أكثر من 120 دقيقة (> 2 ساعة) ☐	
9. في المتوسط، حوالي كم دقيقة في اليوم تمضي على استخدام نظام بلاكبورد؟	أقل من 10 دقائق ☐	10-30 دقيقة ☐	31-60 دقيقة ☐	61-120 دقيقة ☐	أكثر من 120 دقيقة (> 2 ساعة) ☐	

القسم 2: العوامل المؤثرة في عزمكم على الاستمرار في استخدام نظام بلاكبورد

B- الإستفادة المتوقعة Perceived usefulness					
يرجى اختيار إحدى الخيارات التالية	لا أوافق بشدة	لا أوافق قليلا	محايد	أوافق قليلا	أوافق بشدة
10. استخدام نظام بلاكبورد يزيد من جودة عملي التعليمي					
11. استخدام نظام بلاكبورد يجعلني معلماً أكثر إنتاجية					
12. استخدام نظام بلاكبورد يزيد أداء عملي					
13. استخدام نظام بلاكبورد يمكنني من إنجاز مهامي التدريسية بسرعة أكبر					
14. عموما أجد نظام بلاكبورد مفيداً					

C-التدريب Training

يرجى اختيار إحدى الخيارات التالية	لا أوافق بشدة	لا أوافق قليلا	محايد	أوافق قليلا	أوافق بشدة
15. أتلقى دورات تدريبية حول كيفية استخدام أدوات نظام بلاكبورد					
16. أتلقى أدلة تدريبية (إرشادات)حول كيفية استخدام أدوات نظام بلاكبورد					
17. أتلقى ندوات حول استخدام أدوات نظام بلاكبورد					

D - الدعم الفني Technical support					
يرجى اختيار إحدى الخيارات التالية	لا أوافق بشدة	لا أوافق قليلا	محايد	أوافق قليلا	أوافق بشدة
18. مركز الدعم الفني (2111) متاح عندما يكون هناك مشكلة فنية					
19. موظف دعم نظام بلاكبورد متاح عندما يكون هناك مشكلة فنية					
20. استفسارات البريد الإلكتروني يمكن أن تتم عندما يكون هناك مشكلة فنية					
21. الدعم الفني الذي تقدمه الجامعة يساعدني على استخدام نظام بلاكبورد.					

E- تصميم واجهة المستخدم لنظام بلاكبورد Blackboard user-interface design					
يرجى اختيار إحدى الخيارات التالية	لا أوافق بشدة	لا أوافق قليلا	محايد	أوافق قليلا	أوافق بشدة
22. تخطيط نظام بلاكبورد هو سهل الاستعمال					
23. تعليمات نظام بلاكبورد واضحة					
24. تعتبر هيكلة نظام بلاكبورد جيدة					
25. تصميم نظام بلاكبورد يجعله قراءته أمراً سهلاً					
26. تصميم نظام بلاكبورد مقبول بصورة عامة					

F- الكفاءة الذاتية في إستخدام الحاسوب Computer self-efficacy					
يرجى اختيار إحدى الخيارات التالية	لا أوافق بشدة	لا أوافق قليلا	محايد	أوافق قليلا	أوافق بشدة
27. أستطيع أن أكمل مهمتي باستخدام نظام بلاكبورد إذا لم أكن قد إستخدمت مثل هذا النظام من قبل					
28. أستطيع أن أكمل مهمتي باستخدام نظام بلاكبورد إذا لم يكن لدي سوى كتيبات النظام (إرشادات) كمرجع					
29. أستطيع أن أكمل مهمتي باستخدام نظام بلاكبورد إذا كنت قد رأيت شخصاً آخر يستخدمه قبلي					
30. أستطيع أن أكمل مهمتي باستخدام نظام بلاكبورد إذا لم يكن هناك أحد					

قريب مني ليقول لي ما يجب القيام به					
31. أستطيع أن أكمل مهمتي باستخدام التكنولوجيا إذا كان هناك شخص آخر قد ساعدني على البدء به					
32. أستطيع أن أكمل مهمتي باستخدام نظام بلاكبورد إذا كان بإمكاني دعوة شخص ما للمساعدة إذا تطلب الأمر ذلك					

G-الرضا Satisfaction					
يرجى اختيار إحدى الخيارات التالية	لا أوافق بشدة	لا أوافق قليلا	محايد	أوافق قليلا	أوافق بشدة
33. أنا راض عن تجربة استخدام نظام بلاكبورد					
34. أعتقد أنني فعلت الشيء الصحيح عندما قررت استخدام نظام بلاكبورد					
35. أنا راض عن قراري لاستخدام نظام بلاكبورد					
36. أنا راض جدا عن الخدمات التي يقدمها نظام بلاكبورد					
37. قراري باستخدام نظام بلاكبورد هو عين الصواب					

H- الإستمرار ية في الإستخدام Continuance intention					
يرجى اختيار إحدى الخيارات التالية	لا أوافق بشدة	لا أوافق قليلا	محايد	أوافق قليلا	أوافق بشدة
38. أنوي الاستمرار في استخدام نظام بلاكبورد في المستقبل					
39. سأظل استخدم نظام بلاكبورد بشكل منتظم كما أفعل الآن					
40. أنوي زيادة استخدامي لنظام بلاكبورد في المستقبل					
41. سأقوم بنصح الآخرين باستخدام نظام بلاكبورد					

Appendix B: Hypotheses Analysis

SPSS Regression output for **PU -→ SAT** hypothesis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.555[a]	.308	.302	.69726

a. Predictors: (Constant), PU

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	22.973	1	22.973	47.253	.000[b]
	Residual	51.534	106	.486		
	Total	74.507	107			

a. Dependent Variable: SAT

b. Predictors: (Constant), PU

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.294	.273		8.412	.000
	PU	.455	.066	.555	6.874	.000

a. Dependent Variable: SAT

SPSS Regression output for **PU -→ CI** hypothesis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.647[a]	.418	.413	.64373

a. Predictors: (Constant), PU

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	31.601	1	31.601	76.260	.000[b]
	Residual	43.925	106	.414		
	Total	75.525	107			

a. Dependent Variable: CI

b. Predictors: (Constant), PU

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.012	.252		7.993	.000
	PU	.533	.061	.647	8.733	.000

a. Dependent Variable: CI

SPSS Regression output for **SAT -→ CI** hypothesis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.773[a]	.597	.594	.53562

a. Predictors: (Constant), SAT

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	45.116	1	45.116	157.261	.000[b]
	Residual	30.410	106	.287		
	Total	75.525	107			

a. Dependent Variable: CI

b. Predictors: (Constant), SAT

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.944	.260		3.629	.000
	SAT	.778	.062	.773	12.540	.000

a. Dependent Variable: CI

SPSS Regression output for **TR -→ PU** hypothesis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate

1	.305[a]	.093	.084	.97523

a. Predictors: (Constant), TRAIN

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10.304	1	10.304	10.834	.001[b]
	Residual	100.814	106	.951		
	Total	111.119	107			

a. Dependent Variable: PU

b. Predictors: (Constant), TRAIN

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.069	.297		10.330	.000
	TRAIN	.285	.087	.305	3.292	.001

a. Dependent Variable: PU

SPSS Regression output for **TR** **-→ SAT** hypothesis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.356[a]	.127	.119	.78332

a. Predictors: (Constant), TRAIN

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.466	1	9.466	15.427	.000[b]
	Residual	65.041	106	.614		
	Total	74.507	107			

a. Dependent Variable: SAT

b. Predictors: (Constant), TRAIN

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		

1	(Constant)	3.222	.239		13.504	.000
	TRAIN	.274	.070	.356	3.928	.000

a. Dependent Variable: SAT

SPSS Regression output for **TS --→ PU** hypothesis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.425[a]	.181	.173	.92677

a. Predictors: (Constant), TECHSUPP

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	20.074	1	20.074	23.371	.000[b]
	Residual	91.044	106	.859		
	Total	111.119	107			

a. Dependent Variable: PU

b. Predictors: (Constant), TECHSUPP

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.111	.400		5.275	.000
	TECHSUPP	.492	.102	.425	4.834	.000

a. Dependent Variable: PU

SPSS Regression output for **UID --→ PU** hypothesis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.412[a]	.170	.162	.93273

a. Predictors: (Constant), DESIGN

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	18.900	1	18.900	21.724	.000[b]

	Residual	92.219	106	.870		
	Total	111.119	107			

a. Dependent Variable: PU

b. Predictors: (Constant), DESIGN

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.372	.360		6.593	.000
	DESIGN	.433	.093	.412	4.661	.000

a. Dependent Variable: PU

SPSS Regression output for **UID -→ SAT** hypothesis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.650[a]	.423	.417	.63705

a. Predictors: (Constant), DESIGN

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	31.489	1	31.489	77.590	.000[b]
	Residual	43.018	106	.406		
	Total	74.507	107			

a. Dependent Variable: SAT

b. Predictors: (Constant), DESIGN

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.015	.246		8.199	.000
	DESIGN	.559	.063	.650	8.809	.000

a. Dependent Variable: SAT

SPSS Regression output for **CSE -→ PU** hypothesis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.355[a]	.126	.118	.95719

a. Predictors: (Constant), CSE

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13.999	1	13.999	15.280	.000[b]
	Residual	97.119	106	.916		
	Total	111.119	107			

a. Dependent Variable: PU

b. Predictors: (Constant), CSE

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.162	.478		4.521	.000
	CSE	.524	.134	.355	3.909	.000

a. Dependent Variable: PU