An-Najah National University

Faculty of Graduate Studies

A Framework for e-Learning Acceptance:

A Case Study of the Palestinian Universities

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أنا الموقع أدناه مقدم الرسالة التي تحمل العنوان:

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أقر بأن ما اشتملت عليه هذه الرسالة إنما هي نتاج جهدي الخاص، باستثناء ما تمت الإشارة إليه حيثما ورد، وإن هذه الرسالة ككل، أو أي جزء منها لم يقدم من قبل لنيل أية درجة علمية أو لقب علمي أو بحثي لدى أية مؤسسة تعليمية أو بحثية أخرى.

Declaration

The work provided in this thesis, unless otherwise referenced, is the researcher's own work, and has not been submitted elsewhere for any other degree or qualification.

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Abbreviations

e-Learning	Electronic Learning
ICT	Information and Communication Technology
IT	Information Technology
IS	Information System
TAM	Technology Acceptance Model
TAM2	Technology Acceptance Model two
TAM3	Technology Acceptance Model Three
TRA	Theory of Reasond Action
TPB	Theory of Planned Behavior
UTAUT	Unified Theory of Acceptance and Utilization of Technology
IDT	Innovation Diffusion Theory
SCT	Social Cognitive Theory
Jusur LMS	Jusur Learning Management System
GDP	Gross Domestic Product
ERP	Enterprise Resource Planning
PITA	Palestinian Information Technology Association
MNE	Ministry of National Economy
MTIT	Ministry of Telecommunications and Information Technology
ASTD	American Society of Training and Education
NEA	National Education Association
IITB	Indian Institute of Technology Bombay
UNDP	United Nations Development Programme
USA	United States of America
PC	Personal Computer
VCR	Virtual Classrooms
VOIP	Voice Over IP
Moodle	Modular Object-Oriented Dynamic Learning Environment

VSAT	Very Small Aperture Terminal
HR	Human Resources
SPSS	Statistical Pakage for the Social Sciences
ANOVA	Analysis of Variance
LSD test	Least Significant Difference test
Sig.	Significant
$\mathbf{R^2}$	Coefficient of Determination
Std. Deviation	Standard Deviation
N	Numbers

Definition of Terms

Term	Definition	Reference
e-Learning	Broadly inclusive of all forms of learning and teaching supported by emerging technologies, which employs electronic media that delivers (text, audio, images, animation, and streaming video) in education, and includes ICT technologies and applicationsto enhance content interaction such as (audio or video tape, satellite TV, CD-ROM, computer-based learning, local intranet/extranet based learning, or web-based learning).	Reseachers
Behavioral Intention	"A measure of the strength of one's intention to perform a specified behavior"	Fishbein and Ajzen (1975)
Perceived Ease of Use	"The degree to which a person believes that using an IT will be free of effort"	Davis et al. (1989)
Perceived Usefulness	"The extent to which a person believes that using the system will enhance his or her job performance"	Venkatesh and Davis (2000)
Subjective Norm	"The degree to which an individual perceives that most people who are important to him think he should or should not use the system"	Fishbein and Ajzen (1975); Venkatesh and Davis (2000).
Image	"The degree to which an individual perceives that use of an innovation will enhance his or her status in his or her social system"	Venkatesh and Bala (2008); Moore and Benbasat (1991)
Job Relevance	"The degree to which an individual believes that the target system is applicable to his or her job"	Venkatesh and Bala (2008); Venkatesh and Davis (2000)
Output Quality	"The degree to which an individual believes that the system performs his or her job tasks well"	Venkatesh and Bala (2008); Venkatesh and Davis (2000)
Result Demonstrability	"The degree to which an individual believes that the results of using a system are tangible, observable, and communicable"	Venkatesh and Bala (2008); Moore and Benbasat (1991)
Computer Self-	"The degree to which an individual believes that he or	Venkatesh and

Efficacy	she has the ability to perform a specific task/job using the computer”	Bala (2008); Compeau and Higgins (1995a)
Perceptions of External Control	“The degree to which an individual believes that organizational and technical resources exist to support the use of the system”	Venkatesh and Bala (2008); Venkatesh et al. (2003)
Computer Anxiety	“The degree of an individual’s apprehension, or even fear, when she/he is faced with the possibility of using computers”	Venkatesh and Bala (2008); Venkatesh (2000)
Computer Playfulness	“The degree of cognitive spontaneity in microcomputer interactions”	Venkatesh and Bala (2008)
Perceived Enjoyment	“The extent to which the activity of using a specific system is perceived to be enjoyable in its own right, aside from any performance consequences resulting from system use”	Venkatesh and Bala (2008); Venkatesh, (2000)
Objective Usability	“A comparison of systems based on the actual level (rather than perceptions) of effort required to completing specific tasks”	Venkatesh and Bala (2008); Venkatesh (2000)
Management Support	"The degree to which an individual believes that management has committed to the successful implementation and use of a system"	Venkatesh and Bala (2008)
Design Characteristics	categorized into information-related characteristics such as: accuracy, currency, completeness, and personalization; or system-related characteristics such as: accessibility, reliability, flexibility, adaptability, usability, and interactivity	Mueller and Zimmermann, (2009); Wixom and Todd (2005)
Organizational Support	Refers to procedures, practices, and policies that explore the importance of efforts related to training and development, such as resources and reward systems to apply and acquire learned skills.	Tracey et al. (2001)
Perceived Satisfaction	"A summary affective response of varying intensity that follows e-Learning activities, and is stimulated by several focal aspects, such as content, user interface, learning community, customization, and learning performance"	Wang (2003)
Interactive Learning Activities	Classified into three types: learner-learner interaction which reinforces learning collaboration; learner-content interaction that represents the interactive activities related to learner and instructional content among online	Moore (1989)

	learning environment; and learner-instructor interaction that's considered to be as significant main factor for cognitive learning	
e-Learning Effectiveness	Concerns with the improvement of e-Learning performance, motivation and efficacy among users, by richer media available, and instruction method that greater variety of interactions	Liaw (2008)
e-Learning System Quality	Associated with the following variables of perceived e-Learning system quality: flexibility, access convenience, ease of use, integration, response time, sophistication, reliability, accessibility, stability, system speed and usability, navigation, and network speed	Lee et al. (2009)
TAM (Technology Acceptance Model)	Is one of the most influential research models in studies of the determinants of information systems and information technology acceptance to predict intention to use and acceptance of information systems and information technology by individuals	Davis (1989)

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Abstract

This study aims to introduce a comprehensive framework for e-Learning acceptance through describe the reality of e-Learning in Palestinian universities from the perspective of the faculty members. The research framework which based on Technology Acceptance Model3 (TAM3) integrated with intervention and environmental factors, was conceptualized via reviewing related literature and experts opinions in the design process.

Quantitative and qualitative research methods were used to answer the research questions and to test hypotheses. Quantitative data which related to the factors that influence e-Learning acceptance collected via structured survey which was distributed to a random sample (n=352) of lecturers at universities in Palestine. Furthermore, a qualitative data which explores the status of e-Learning system in Palestine was derived by an exploratory in depth semi-structured interviews with IT and e-Learning specialists in Palestinian universities.

Statistical analysis shows that all investigated factors in the model were supported, excluding the moderation factors (voluntariness and experience). Moreover, the results indicate that perception-related factors

are the main significant predictors that directly and indirectly influence intention to use e-Learning.

On the other hand, interview results show that most of the Palestinian universities administrator are committed to support e-Learning system adoption in their universities. In addition, the results show that asynchronous e-Learning tools are the most widely used in the Palestinian universities.

Based on the research findings, it was recommended that the Palestinian universities adopt the comprehensive framework to promote the adoption and acceptance of e-Learning system.

In addition, it was recommended that the Palestinian universities should develop e-Learning infrastructure, and coordinating with other entities such as government, ICT companies, and offices transfer software programs.

Chapter One
Introduction

1.1- Overview

Electronic learning is one of the most important outcomes of technological revolution, which driven by the internet transformation. This enables users to effectively cope the need to acquire productive environments by both synchronous and asynchronous learning methodologies (Oye et al., 2012).

With the rapid growth of e-Learning market worldwide rated at 35.6%. according to Sun et al. (2008), and due to growth rate with 8.2% of revenues for Self-paced e-Learning products in the Middle East which reached $378.4 million in 2011, and forecasted to reach $560.7 million by 2016, according to Adkins (2013), it is clearly indicated that e-Learning is emerging as a new paradigm for educational preform in the world in general and in Palestine in particular. Therefore, there is a need to identify what drives a successful e-Learning deployment in universities of Palestine, which reflected on the quality of education if it is adopted and employed successfully.

Investment in e-Learning systems loses its significance if there were inappropriate number of users. Therefore, it is necessary to study teachers' behavior toward e-Learning acceptance in order to help executives to make polices based on individual characters and environmental factors that promoting teachers to use e-Learning (Wang and Wang, 2009).

The main objective of the research is to develop a framework for e-Learning acceptance for faculty members in Palestinian universities, based on an extension of Technology Acceptance Model3 (TAM3) which proposed by Venkatesh and Bala (2008).

The critical factors influencing faculty satisfaction for adopting e-Learning in Palestine are planned to be investigated by utilizing both qualitative methods to collect data through interviews with e-Learning or IT specialist in universities, and quantitative methods to gather data through a survey development targeting the views of Palestinian universities lecturers.

The results and recommendations of this research may help Palestinian universities formulate new strategies to adopt e-Learning, in coordination with the relevant institutions, in order to achieve the desired success based on the proposed framework.

1.2- Background

Higher education and universities in Palestine, considered to be an important sector which actively interact with changing world and societies, and being responsive to their political, economic, and community engagement. Each university has differ mission, size, goals, academic curriculum, standards, and programs that’s what characterizing their status from other universities, especially in the percentage of e-Learning acceptance and use.

Universities used e-Learning technology to achieve cost effectiveness by cost and time reduction, quality improvement, and usefulness maximization compared to traditional education (Marengo and Marengo, 2005). This is what Rosenberg (2001) mentioned, and also added that e-Learning has several benefits including: a just-in time learning approach, its content is more timely and dependable, and provides learner with increasingly valuable service such as: access expertise of sages, and share valued information in a comprehensive manner. And thus can achieve a competitive advantage.

The learning which is supported electronically that termed e-Learning was appeared and widely used in education since 1995 (Beldagli and Adiguzel, 2010), and defined as: learning and teaching through the use of information and communication technologies (Babić, 2012).

Information and communication technologies (ICT) have become a major focus in the educational process through integration with education, which has many benefits including increasing the quality of education (Chang, 2008), enhancing teacher's motivation and performance (Al-Zaidiyeen et al., 2008).

Therefore, the rapid improvement and progress in (ICT), and development of the multimedia technologist and Internet, are expanding the way for the possibility of new teaching paradigms (Shraim, 2010), and primary stimulus of e-Learning (Nagy, 2005).

e-Learning is one of the outputs of the technological development in the field of ICT, which offers many opportunities for enhancing the quality and quantity of education process by developing the quality management system in the field of e-Learning, that will reflect positively on the teachers and learners competences for using ICT in teaching or learning activates as Babić (2012) mentioned.

Due to the special situation of Palestine, because of the Israeli occupation and its restrictions, the ICT sector is a key lever for the future of the Palestinian economy, which is the fastest growing sector compared to other economic sectors with contribution to the Palestinian GDP of 8%, and with annual growth rate of more than 10%, according to Solutions for Development Consulting Co. (2013).

E-Learning depends primarily on the user's willingness to employ the computer in the educational process. So, understanding the people's willingness to accept and use computer considered to be one of the most challenging issues in information systems research according to Swanson (1988). Davis (1989) argued, if this can be understood, organizations would be able to explain, predict, and increase user acceptance of any technology.

Andersson and Grönlund (2009), argue that the majority of literature in developing countries focuses on access to technology and factors contextual; in contrast to that developed countries, which examines individual's characteristics.

This research aims to investigate and understand the factors that influence the attitude of academic staff of Palestinian universities towards e-Learning adoption through the extension of Technology Acceptance Model 3 (TAM3). This can help universities to formulate strategies that will help them in the transition to e-Learning.

1.3- Research on e-Learning Acceptance

This study focuses on the critical factors which influencing e-Learning acceptance by lecturers in Palestinian universities, based on TAM3 integrated with environmental and intervention variables; in order to provide stakeholders with a framework that provides a comprehensive insight to address the main challenges facing e-Learning successful implementation.

To accomplish that, the study assessing to what degree the lecturers accepted the e-Learning approach in the Palestinian universities, and the challenges that have prohibited the optimal use of this type of education by testing the correlation among external factors that related to social influence processes, cognitive instructional processes, anchors that reflect individual differences, adjustment, intervention, and environmental variables; which predict internal beliefs factors that significantly affect the intention toward e- Learning acceptance.

The framework proposed in this study consists mainly of Technology Acceptance Model3 (TAM3) integrated with interventions, environmental factors, and technology (internet and computer) usage. Venkatesh and Bala (2008), considered the validation and development of TAM3 as a significant first step to understand the role of interventions in the IT contexts acceptance, and its importance as a determinant of perceived usefulness and ease of use.

Faqih and Jaradat (2015), considered TAM3 a comprehensive model that incorporated individual characters, content, context, and process elements in order to present rich details on capturing the dynamics and complexity of new technology acceptance and use in developing countries.

TAM3 is the development of TAM2 that is an extension of TAM introduced by Venkatesh and Davis (2000). TAM was proposed by Davis (1989), which focuses on two determinants including perceived ease of use and perceived usefulness that are influenced by external variables and positively affect the individual's intention and behavior to use new technology (Chen et al., 2011; Aggorowati et al., 2012).

In TAM3 the determinants of perceived "usefulness" are explained by social influence processes (subjective norm and image), and cognitive instrumental processes (job relevance, output quality, and result demonstrability) (Venkatesh and Davis, 2000), which represent users perceptions about a system's functionality (Davis and Venkatesh, 2004). But, the determinants of perceived "ease of use" affected by anchoring users beliefs about computer use (Davis and Venkatesh, 2004) which represents several traits and emotions, such as: computer self-efficacy, perception of external control, computer playfulness, and computer anxiety (Venkatesh and Bala, 2008), and adjusting their various aspects of the hands-on experience with the specific system (Davis and Venkatesh, 2004) which represent (perceived enjoyment, and objective usability) factors (Venkatesh and Bala, 2008).

Cohen (2005) and Jasperson et al. (2005) argued that managers should develop effective interventions from managers that can lead to greater new technology acceptance and use as has been suggested in both the academic and trade press. For that, there is a need to grasp how various interventions can affect the determinants of e-Learning adoption.

According to Venkatesh (2006), pre-implementation interventions such as (management support, and design characteristics), and post-implementation interventions such as (training, and organizational support which represent facilitating conditions) can assist users make better adoption decision about new system and help managers to make effective decisions during implementation.

Environmental factors investigated in this study provide a user-friendly environment which achieves instructor's satisfaction toward e-Learning usage. Liaw (2008) concluded some most important considerations such as: interaction, design, and instructor characteristics while designing effective e-Learning environments.

Liaw (2008) added that the effectiveness of e-Learning which influencing users perceived satisfaction can be affected by some determinants such as system quality, multimedia instruction, and interactive learning activities. Liaw et al. (2007) used parameters related to e-Learning effectiveness, multimedia environment, and system quality to measure perceived satisfaction, results viewed significant variances among instructors in meeting e-Learning needs that affect their attitudes toward the adoption of e-Learning.

This study, examined the instructor's attitude differences based on teaching experiences, technology usage, age, gender, academic rank, university. Wong and Hanafi (2007) argued that age or gender can shape an instructor's attitude toward e-Learning. Besides, the instructor's teaching experience and skill levels in computer affect their perceptions of e-Learning (Alenezi, 2012).

1.4- Motivation to Conduct the Research

The requirements of appropriate learning have stimulated great demand on the use of e-Learning in the various institutions and institutes of higher education (Beldagli and Adiguzel, 2010).

Fardoun (2011), noted that there are several studies in recent years which prove that the use of e-Learning system has increased in educational environments.

There are many strengths lie in the Palestinian ICT sector according to the recently finalized ICT 3-year sector strategy and development plan commissioned by the Palestinian Information Technology Association of Companies (PITA) in 2012. These strengths include: approximately 1600 students specializing in ICT fields graduates every year from Palestinian universities, and the encouraging support provided to the ICT sector from both the Ministry of National Economy (MNE) and Ministry of Telecommunications and Information Technology (MTIT) which expected to improve since this sector employs over 5000 people, (Solutions for Development Consulting, 2012). This promotes the use of e-Learning as one of the outputs of ICT and technological innovation.

The Palestinian economy should cope with rapid changes and developments in ICT sector in the era of globalization. This needs qualified graduates who have the rapid updated knowledge, that can be provided to them by e-Learning system.

Students no longer rely on textbooks in access to information, therefore the unconventional teaching methods to keep up with those changes should be activated (Alaraj, 2012). But, a need remain to accept this new system by lecturers in order to accommodate these changes, and this requires the study of factors that influence their decisions and attitudes toward e-Learning system.

This research is the first in Palestine, which offers a comprehensive framework to accept e-Learning by lecturers in different Palestinian universities.

1.5- Problem Statement

E-Learning acceptance and usage in Palestinian universities are relatively unevenly. "Nearly, every university in Palestine is offering some type of online education" (Shraim, 2010). Despite the rapid technological progress, the adoption of e-Learning in the Palestinian universities suffers from deficiencies.

"The rapid pace of technological and economic developments has placed greater demands on education systems. Recently, a new paradigm of teaching and learning process, e-Learning, has emerged as a result of the rapid diffusion of ICT" (Shraim, 2010).

Given the need to reduce costs, to improve the quality of educational process, and to keep pace with inflation emerging in the universities due to population growth and increase the number of registered in return for the small number of graduates (Palestinian Central Bureau of Statistics, 2014b). The needs arise to employ the techniques of modern electronic in the educational process learning which also helps universities vertical expansion and accommodate more and more students as the e-Learning specialists in Palestinian universities suggested.

According to El-Harazin et al. (2007), the demand to seek education are increased, in return to that the resources available for traditional teaching are limited and faced with physical and security obstacles which makes the proposed e-Learning as an innovative program that be a viable.

The development of Palestinian education are influenced by Palestinian-Israeli conflict. Shraim (2010) argued that on the access to quality education, “e-Learning has become a necessity rather than a luxury” to mitigate the negative effects of the ongoing this conflict.

The use of e-Learning faces many challenges in the Palestinian universities. Osaily (2013), summarized these challenges from the experiences of e-Learning initiative in Al-Quds Open University in Hebron Educational Region, among the challenges presented: how to improve the technical infrastructure and facilities which include (providing higher internet speed, wireless internet at the university campuses and stronger servers), how to support the concept of e-Learning and enhance English language among teachers and students, how to achieve social mobilization of community members to interact with this type of education, and how to promote more research on these issues (Osaily, 2013).

Qureshi et al. (2012), explained failure to take advantage of the possibilities offered by e-Learning by underlying issues such as: technical difficulties, access to computers, English competency, need for face to face interaction, level of awareness, computer literacy, resistance to change, technical staff available, and Privacy and Security (Qureshi et al., 2012).

Shraim (2010) indicated that higher education should make considerable efforts to enable their instructors to take full advantage of the potential of e-Learning, which is still underutilized.

During a reviewing of the literature, there is no study done even today to identify the comprehensive factors that leading to e-Learning acceptance by lecturers in Palestinian universities.

This research aims to study and investigate the factors influencing e-Learning acceptance by lecturers in Palestinian universities, by developing a framework based on integrate TAM3 model with intervention and environmental factors.

1.6- Research Questions

This research aims to answering the following questions:

1. What are the technologies used in the Palestinian universities that serve and support e-Learning?
2. What are the factors that have been influencing acceptance of e-Learning technology by lecturers?
3. What is the role of using emerging technologies in the e-Learning acceptance?

4. What changes are required to foster a collaborative e-Learning environment?

1.7- Research Hypotheses

This research aims to test the following hypotheses:

- **H1:** Perceived usefulness is significantly and positively related to behavioral intention to use e-Learning.
- **H2:** Perceived ease of use is significantly and positively related to behavioral intention to use e-Learning.
- **H3:** Perceived ease of use is significantly and positively related perceived usefulness of e-Learning.
- **H4:** Behavioral intention significantly and positively affects usage behavior toward e-Learning.
- **H5:** Subjective norms have a significant positive direct effect on behavioral intention to use e-Learning.
- **H6:** Subjective norms have a significant positive direct effect on usefulness of e-Learning.
- **H7:** Subjective norms have a significant positive direct effect on image for using e-Learning.
- **H8:** Users' image for using e-Learning has positive influence on perceived usefulness of e-Learning.

- **H9:** Job relevance of e-Learning has positive influence on users' perceived usefulness of e-Learning.
- **H10:** Output quality of e-Learning has positive influence on users' perceived usefulness of e-Learning.
- **H11:** Result demonstrability of e-Learning has positive influence on users' perceived usefulness of e-Learning.
- **H12:** Computer self-efficiency is significantly and positively related to perceived ease of use of e-Learning.
- **H13:** Perceptions of external control is significantly and positively related to perceived ease of use of e-Learning.
- **H14:** Computer anxiety is significantly and negatively related to perceived ease of use of e-Learning.
- **H15:** Computer playfulness will have a positive effect on perceived ease of use of e-Learning.
- **H16:** Perceived enjoyment has a significant positive effect on perceived ease of use of e-Learning.
- **H17:** Objective usability has a significant positive effect on perceived ease of use of e-Learning.
- **H18:** Management support is significantly and positively related to perceived usefulness of e-Learning.

- **H19:** Management support is significantly and positively related to perceived ease of use of e-Learning.
- **H20:** Design characteristics is significantly and positively related to perceived usefulness of e-Learning.
- **H21:** Design characteristics is significantly and positively related to perceived ease of use of e-Learning.
- **H22:** Organizational support is significantly and positively related to perceived usefulness of e-Learning.
- **H23:** Organizational support is significantly and positively related to perceived ease of use of e-Learning.
- **H24:** Training is significantly and positively related to perceived usefulness of e-Learning.
- **H25:** Training is significantly and positively related to perceived ease of use of e-Learning.
- **H26:** e-Learning system quality will positively influence perceived satisfaction with e-Learning.
- **H27:** Interactive learning activities will positively influence perceived satisfaction with e-Learning.
- **H28:** e-Learning effectiveness will positively influence perceived satisfaction with e-Learning.

- **H29:** Multimedia instruction will positively influence perceived satisfaction with e-Learning.
- **H30:** Perceived satisfaction is significantly and positively related to behavioral intention to use e-Learning.
- **H31:** The moderator (voluntariness) will significantly influence the relationship between subjective norms and behavioral intention to use e-Learning.
- **H32:** The moderator in TAM3 (experience) will significantly influence extended paths relationships between (subjective norms; ease of use) and (behavioral intention), (subjective norms; ease of use) and (usefulness), and (computer anxiety, computer playfulness, perceived enjoyment, objective usability) and (ease of use).

1.8- Structure of the Thesis

The thesis is organized into six chapters as the following: Chapter one introduces the thesis subject and its objectives. Chapter two introduces a literature review and summarizes studies that addressed the e-Learning, and previous studies which support the hypotheses formulation. Chapter three presents the methodology that has been followed in this research. Chapter four present the results and findings that illustrates the analytical results of research variables and gives the hypotheses results. Chapter five gives brief conclusions on hypotheses results with a set of recommendations and future research suggestions.

Chapter Two
Literature Review

2.1- Overview

This chapter presents the research conceptual framework and discuss the literature review related to e-Learning acceptance. More specifically, it discusses three aspects, the first one concerning on the theme of ICT and e-Learning acceptance. The second part displays the debate on scientific studies related to factors influencing e-Learning adoption, technology acceptance models, international studies based on these models, universities role, and technology usage. While the final part discuss the e-Learning concept, benefits, challenges, and categories, and reviews reality of e-Learning in Palestinian universities. Moreover, we explore some statistics that related to higher education in Palestine.

2.2- Information and Communication Technology (ICT) in Learning Sector:

In the recent years, there has been an interesting to utilize computers, internet and communication networks that abolish the constraints of time and distances in the way that made the world as a small village. In light of this, there is a determined effort to recruit ICT's tools in the educational process in order to increase their efficiency and effectiveness in both formal and non-formal settings at all levels.

UNDP (2005) defined ICTs as a set of tools, applications, goods, and services, on which information handled, produced, processed, stored, or exchanged. Mikre (2012) refers the operational definition of ICT "to the computer and internet connections used to handle and communicate information for learning purpose". So, the effective delivering knowledge in the recent years based on utilizing e-Learning as ICT tool (Ilechukwu, 2013). Noor-Ul-Amin (2013) differentiated between ICTs for education which refers to the enhancement of communication and information technology to serve teaching and learning objectives, and ICTs in education which includes the adoption main components of communication and information technology in the process of teaching and learning that is related to (quality, accessibility, motivation, environment, ICT usage, and academic performance).

According to Ilechukwu (2013), e-Learning referred to employing the variance ICT media (computer, CD-ROM, internet, audio and video tapes, multimedia, etc.) in compiling the relevance teaching's and learning's implementation, combination and relationship.

Tinio (2002) pointed to the impact of growing capabilities of ICTs in the intension opportunities of enhancing the education's relevance and quality in developing countries; and as well facilitating knowledge acquisition and absorption. As Mikre (2012) sees that many of the studies demonstrate the higher knowledge gained by learners when using ICT tools compared to those do not use. So, in developing countries as UNDP (2004) suggested, policy makers must recognize the need for linking ICT to education policies which should focus on new effective and flexible teaching paradigms that could be offered by ICT, subjecting teachers to re-training programs includes using ICTs in education, the need for local education content, the need for ICT infrastructure, and on using alternative technologies that are low cost and compensate the lack factors in education.

Voogt (2003) described the basic roles of ICT's relevance in education as an object for study, a medium of instruction, and an aside of profession. In addition he distinguished between traditional learning and emerging pedagogy which based on constructivist approaches that fits to the use of computer and internet. These comparisons listed in Table 2-1 below.

Table 2-1: Overview of Pedagogy in the Traditional versus Information Society As adapted by Voogt (2003) from (Voogt and Odenthal, 1997; Wijnen et.al., 1999).

Aspect	Traditional pedagogy	Emerging pedagogy for the information society
Active learning	Activities prescribed by teacher	Activities determined by learners
	Whole class instruction	Small group
	Little variation activities	Many different activities
	Pace determined by the programme	Pace determined by learners
Collaborative	Individual	Working in teams
	Homogenous groups	Heterogeneous groups
	Every one for him/herself	Supporting each other
Creative	Reproductive learning	Productive learning
	Apply known solutions to problems	Find new solutions to problems
Integrative	No link between theory and practice	Integrating theory and practice
	Separate subjects	integration between subjects
	Discipline based	Thematic
	Individual teachers	Teams of teachers
Evaluative	Traditional pedagogy	Emerging pedagogy for the information society

Source: Mikre, (2012).

Scheuermann and Pedró (2009) urged many reasons pushed most countries to undertake considerable investments to develop technology employment in education, one of this important reason is the possess ability to fully integrate the knowledge economy driven by technology with society. In addition, ICT enable wider learners accessing to the same best practices education and course material regardless of geographical barriers and time, which have an impact on learners performance (Noor-Ul-Amin, 2013) and prepare them for the new global economy (Kozma, 2005).

If we extrapolate the reality, find that the role of ICT in education will grow and develop continuously, because it becomes more important in all aspects of the life and the world engaging rapidly into digital media and information.

2.3- Factors Influencing e-Learning Acceptance

e-Learning and ICT technologies have been discussed from many international studies and researches. And also, there was a focus on the factors influencing the adoption and acceptance of those technologies among users. Several of those studies provide an empirical and theoretical background related to e-Learning technologies and its successes. Consequently, it is necessary to compare our findings with others after exploring, analyzing, understanding, and highlighting their studies factors that affecting e-Learning adoption.

2.3.1. Factors Influencing Lecturers to e-Learning Acceptance

Numerous studies like Shraim (2010), Phua et al. (2012), Babić (2012), Wang et al. (2009), and others concerned with e-Learning adaption by academic staff, and exhibited many factors that influence the adaption of e-Learning by universities lecturers. These researches and others show that both empirical and theoretical support available for the great correlation between intention to engage in a behavior and actual usage or adoption.

Perceived behavioral intention is defined as "a measure of the strength of one's intention to perform a specified behavior" (Fishbein and Ajzen, 1975). That mean, an individual's feelings (positive or negative) toward performing the target behavior (Davis et al., 1989; Fishbein and Ajzen, 1975). Intention used as an indicator to capture the factors that affect desired behavior (Ajzen, 1991). So, before users' decisions to engage or not engage in a given behavior, they could consider the implications of their actual behavior. There are several factors such as perceived usefulness (Davis, 1989), subjective norms (Schepers and Wetzel, 2007), perceived ease of use (Davis, 1989), and perceived satisfaction (Liaw, 2008) that are positively associated with behavioral intention to use new technology.

Several researches explored the importance of **perceived ease of use** as a most significant factor that influences individual behavior toward new technology acceptance and usage (Venkatesh, 2000). Theoretically, perceived ease of use is closely related to individual's self-efficacy beliefs and procedural knowledge based on hands-on experience and execution of skills (Davis et al., 1989; Venkatesh, 2000; Davis and Venkatesh, 2004)

Perceived ease of use, according to Davis et al. (1989) is defined as "the degree to which a person believes that using an IT will be free of effort".

To understand the determinants of perceived ease of use of any system-specific or technology, Venkatesh (2000) explored how user's perceptions formed and changed over time along with growing expertise with the target system, based on anchor and adjustment factors.

Perceived usefulness is another important factor that influences lecturer's adoption of new technology which is defined as "the extent to which a person believes that using the system will enhance his or her job performance" (Venkatesh and Davis, 2000). This factor could be greatly affected by three interrelated social influencing processes which reflect the opportunity facing users to adopt or reject a new specific system. These forces are subjective norm, image, and voluntariness; and could be affected by four cognitive instrumental processes: job relevance, output quality, result demonstrability, and perceived ease of use (Venkatesh and Davis, 2000; Wu et al, 2011). The integration of the social influence and cognitive instrumental processes explain the extent of individual perception towards a new system as useful, and thus the positive of his or her attitude toward using this system (Wu et al., 2011).

Subjective Norm defined as "the degree to which an individual perceives that most people who are important to him think he should or should not use the system" (Venkatesh and Bala, 2008; Fishbein and Ajzen, 1975; Venkatesh and Davis, 2000). So the users will form stronger intentions and positive attitude toward the use of new technology, if conscientious figures think that significant others believe that the new technology should be used (Devaraj et al., 2008).

Image is "the degree to which an individual perceives that use of an innovation will enhance his or her status in his or her social system" (Venkatesh and Bala, 2008; Moore and Benbasat, 1991). Image and subjective norms are significant determinants that reflect the importance of having others think positively of users behavioral intentions (Punnoose, 2012).

Job Relevance defined as "the degree to which an individual believes that the target system is applicable to his or her job" (Venkatesh and Bala, 2008; Venkatesh and Davis, 2000). Polson (1987) argued that knowledge about the working conditions vary among users when they used it to determine what tasks can be performed within a system-specific.

Output Quality is "the degree to which an individual believes that the system performs his or her job tasks well" (Venkatesh and Bala, 2008, p. 277; Venkatesh and Davis, 2000). In the other words, this factor defined as "the degree to which an individual judges the effect of new system" (Wu et al., 2011).

Result Demonstrability: "the degree to which an individual believes that the results of using a system are tangible, observable, and communicable" (Venkatesh and Bala, 2008, p. 277; Moore and Benbasat, 1991). This means that users can be expected to form positive perceptions about the useful of a target system if co variation between use and positive results is easily remarkable (Venkatesh and Davis, 2000).

Almost these variables and factors mentioned above and others can be grouped into five categories (Individual Differences, Beliefs, Attitude, Behavioral Intention, and Actual Behavior), at different models that test their correlations as Punnoose (2012) presented (Figure 2.1).

But, based on the 3-TUM (three-tier Technology Use Model) (Figure 2.2), the attitudes of users toward IT and faculty toward computer and internet usage as a job assistance tool can be spliced into three different tiers include respectively, according to the positive impact on each other as follows: the tier of system quality and individual characteristics that represent their experience, the affective and cognitive tier, and the behavioral intention tier (Liaw, 2007).

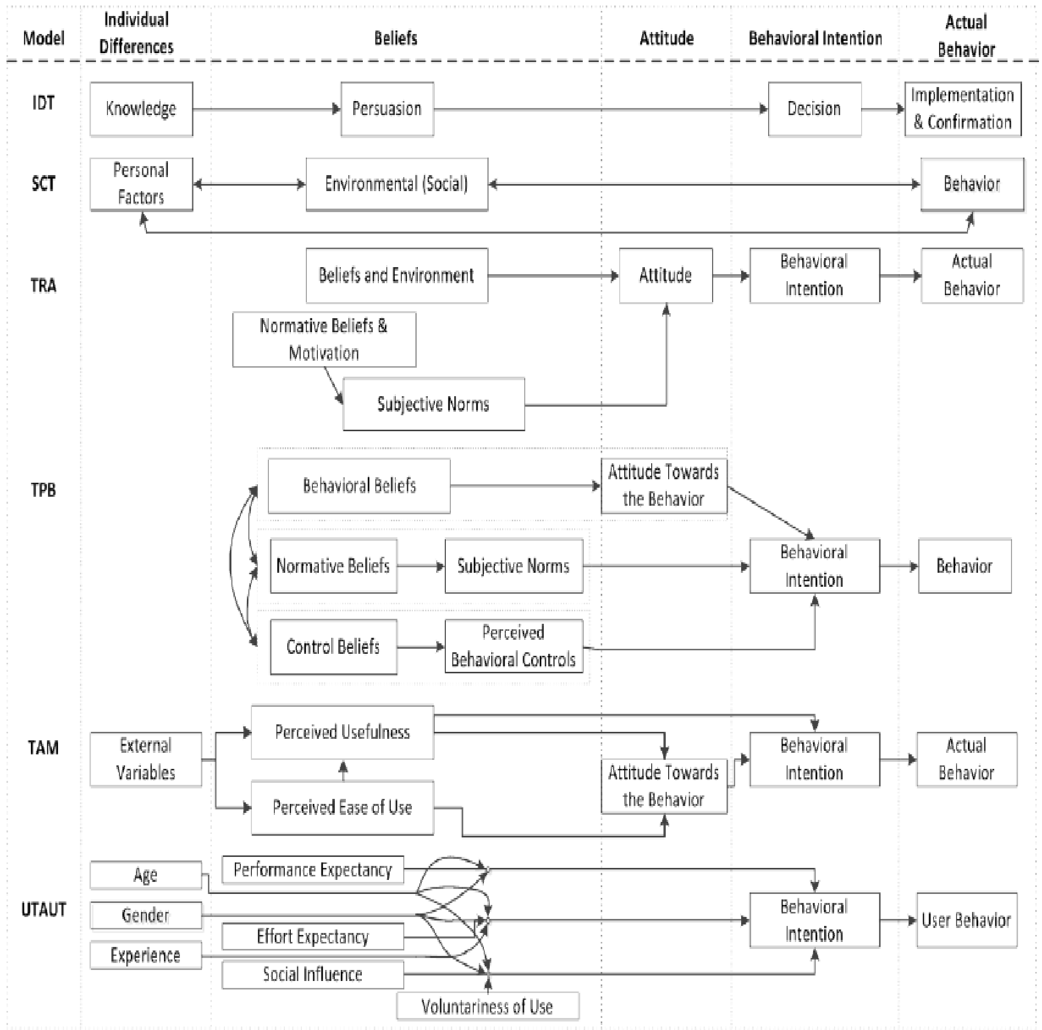

Figure 2.1: Comparison of Innovation Diffusion Theory (IDT), Social Cognitive Theory (SCT), Theory of Reasoned Action (TRA), Theory of Planned Behavior (TPB), Technology Acceptance Model (TAM) and Unified Theory of Acceptance and Use of Technology (UTAUT). Source: (Punnoose, 2012).

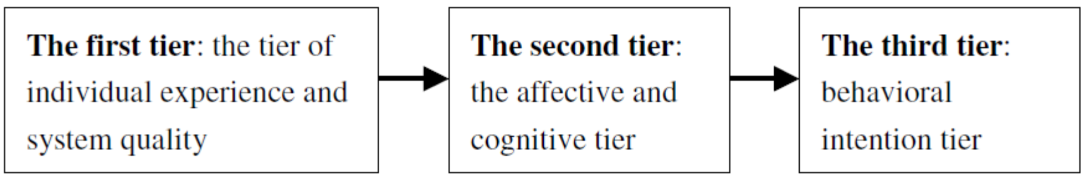

Figure 2.2: The three-tier use model (3-TUM). Source: (Liaw, 2007).

2.3.2.Technological Factors Influencing e-Learning Acceptance

User perceptions about the new technology usability would be anchored to various general beliefs about computer usage after direct experience, and then the perception ease of use would be adjusted to reflect the experience's various aspects (Venkatesh, 2000).

Anchoring variables that forming perceived ease of use about system-specific are grouped into three categories, the first related to users' control beliefs which includes perception of internal control (computer self-efficacy) and perception of external control (facilitating conditions), the second represent users' emotion which conceptualized as computer anxiety, and finally intrinsic motivation which represents computer playfulness (Venkatesh, 2000; Venkatesh and Bala, 2008).

Computer Self-efficacy defined as "the degree to which an individual believes that he or she has the ability to perform a specific task/job using the computer" (Venkatesh and Bala, 2008; Compeau and Higgins, 1995a, 1995b). So, if the system is friendly to user, it is possible for the user to have more control over the system, thereby enhancing their self-efficacy (Venkatesh and Bala, 2008).

Perceptions of External Control is another anchor factor that means "the degree to which an individual believes that organizational and technical resources exist to support the use of the system" (Venkatesh and Bala, 2008; Venkatesh et al., 2003).

Computer Anxiety is theorized as "the degree of an individual’s apprehension, or even fear, when she/he is faced with the possibility of using computers" (Venkatesh and Bala, 2008; Venkatesh, 2000). That’s mean an anchor belief which inhibits forming a positive perceived ease of use toward a new system (Venkatesh, 2000).

Computer Playfulness is defined as "the degree of cognitive spontaneity in microcomputer interactions" (Venkatesh and Bala, 2008; Webster and Martocchio, 1992). This factor represents the self motivation associated with using a new technology (Venkatesh and Bala, 2008).

Likewise, adjustment variables represent the later adjusting users' perceptions of ease to use about system-specific based on their hands-on experience (Venkatesh and Bala, 2008). Resulting from the users and new system interaction the adjustments such perceived enjoyment and objective usability are added influence on perceived ease to use (Venkatesh, 2000).

Perceived Enjoyment is "the extent to which the activity of using a specific system is perceived to be enjoyable in its own right, aside from any performance consequences resulting from system use" (Venkatesh and Bala, 2008; Venkatesh, 2000).

Objective Usability is defined as "a comparison of systems based on the actual level (rather than perceptions) of effort required to completing specific tasks" (Venkatesh and Bala, 2008; Venkatesh, 2000).

2.3.3. Interventional Factors Influencing e-Learning Acceptance

Venkatesh and Bala (2008) considered the validation and development of Technology Acceptance Model 3 (TAM3) as a significant first step to understand the role of interventions in adoption the information technology contexts; and offered future studies directions based on the importance of interventions as a determinant of perceived ease of use and perceived usefulness.

Interventions is classified into two main categories that are pre- and post-implementation as Venkatesh and Bala (2008) suggested. Pre-implementation represents early stages that drive to the actual roll related to initiation, adoption and adaptation of new system; whereas post-implementation represents the entails stages related to user acceptance, routinization, and infusion which follows the deployment of the new system (Cooper and Zmud, 1990).

Pre-implementation interventions described by Venkatesh and Bala (2008) as a set of organizational activities such as management support, design characteristics, and user participation, that carried out during the development and deployment of new system, and drive to magnification system's acceptance by providing a realistic preview of the system features and minimizing the initial resistance to this system.

Management support suggested from Markus (1981), Jarvenpaa and Ives (1991), and Liang et al. (2007) as a significant previous of information technology implementation success; and suggested to be one of the most critical success factors for the complex systems (Holland and Light, 1999; Liang et al., 2007).

According to Venkatesh and Bala (2008), this factor refers to "the degree to which an individual believes that management has committed to the successful implementation and use of a system". So, managers such as: middle managers, senior executives, or direct supervisors are considered to be as significant sources of interventions who can intervene directly by using features of IT, incentive structures, or directing enhancement of new system applications; or indirectly by providing resources, sponsoring, or issuing guidance and directives (Jasperson et al., 2005). This is what Tracey et al. (2001) pointed out in their management support definition, which reflects the extent of work environment aspects to encourage managers and supervisors on innovation, job learning, and skill acquisition and provide recognition to users in support of these activities.

Design characteristics accordance with (Mueller and Zimmermann, 2009; Venkatesh and Bala, 2008; Wixom and Todd, 2005) can be categorized into information-related characteristics such as: accuracy, currency, completeness, and personalization (Mueller and Zimmermann, 2009; Nov and Ye, 2008; Wang et al, 2007; Wixom and Todd, 2005; DeLone and McLean, 2003); or system-related characteristics such as: accessibility, reliability, flexibility, adaptability, usability, and interactivity (Mueller and Zimmermann, 2009; Wang et al, 2007; Wixom and Todd, 2005; DeLone and McLean, 2003).

Post-implementation interventions represent a group of institutional support activities such as: organizational support, peer support, and training which take place after the application of the new system in order to improve the acceptability of this system to the users (Venkatesh and Bala, 2008). Beaudry and Pinsonneault, (2005) argued that the lack of abilities and necessary resources to system usage leads to the reluctance of users from new system acceptance.

Organizational support constitutes institutional activities or functions whether they are formal or informal that support and assist users in the new system usage in various forms such as: creating dedicated helpdesks, sending employees to off-the-job, hiring system and business process experts, and providing necessary infrastructure (Venkatesh and Bala, 2008). According to Tracey et al. (2001), organizational support refers to procedures, practices, and policies that explore the importance of efforts related to training and development, such as resources and reward systems to apply and acquire learned skills.

Training provides users with a hands-on mechanism to deployment of useful relevant information about the new system, and allowing them to explore the system from a technical standpoint and functional perspective, furthermore to interact with this system features based on the literature or prior information relevant to the applied system (Amoako-Gyampah and Salam, 2004). Furthermore, training interventions can mitigate the invoke passive reaction from users toward the new system (Venkatesh and Bala, 2008).

2.3.4. Environmental Factors Influencing e-Learning Acceptance

The promotion of e-Learning system as suited environments for teaching and learning requires good understanding of users' attitude toward this new system. Teaching environment based on e-Learning such as learn on-line can contribute to bridge the gap between lecturer and learner, the two main ingredients in the classroom, affect the ability to teach and learn (Kotzer and Elran, 2012), and contribute to faculty satisfaction in the teaching forasmuch level of learners interaction in the course and their performance, satisfaction with e-Learning system, low levels of technical difficulties, a positive perception of the effect of the technology, and reason for choosing environment on-line based teaching (Fredericksen et al., 2000).

Liaw and Huang (2011) suggested four elements to facilitate e-Learning system including learning activities related to interactive learning activities, environmental characteristics which depend on system quality and multimedia instruction; these variables represent an environmental factor that lead to users' perceived satisfaction which affect their behavioral intention toward the new system usage, as Liaw (2008) concluded.

Perceived satisfaction, due to the most behavior researcher, agreed to be significant factor affecting and complaining behavior intention toward new system usage, and considered the central post-learning behavior mediator (Wang, 2003).

Wang (2003) defined satisfaction as "a summary affective response of varying intensity that follows asynchronous e-Learning activities, and is stimulated by several focal aspects, such as content, user interface, learning community, customization, and learning performance". Spreng et al. (1996) defined user satisfaction as an affective state that related to the use of information system.

Interactive learning activities as environmental factor in e-Learning consist of two parts, the first in regard with learning activities provides a great opportunity for lecturers and learners to share their experience and knowledge (Laiw, 2008), the second is related to interactivity that is considered to be the fundamental success factor for online-based teaching environment (Sims et al., 2002). Interaction in learning is classified according to Moore (1989) into three types: learner-learner interaction which reinforces learning collaboration, learner-content interaction that represents the interactive activities related to learner and instructional content among online learning environment (Zhang, 2005), and learner-instructor interaction that’s considered to be as significant main factor for cognitive learning (Bloom, 1981). So, interaction is one of the critical factors that lead to lecturer satisfaction based on the belief in their ability to promote positive student outcomes (Bolliger and Wasilik, 2009); higher learner engagement (Fredericksen et al., 2000), and positive attitude toward distance-based Learning (Chapman et al., 1999).

e-Learning effectiveness concerns with the improvement of e-Learning performance, motivation and efficacy among users, by richer media available, and instruction method that greater variety of interactions (Liaw, 2008). Al-Maskari and Sanderson (2010) concluded that users' satisfaction is more significantly influenced by higher system effectiveness compared to an inferior effectiveness.

e-Learning system quality clarified by Gable et al. (2008) from design and technical perspectives as a measure or users' evaluation of an information system; and is defined by Oun-Alla (2013) as "a term to describe the quality of the content of information system". Additionally, an efficient e-Learning system depends on the system quality (Oun-Alla, 2013).

DeLone and McLean (2004) argued that variables associated to system quality may vary, based on the target technologies, and concluded that system quality is a critical success factor which influence the users' satisfaction and their intention to use the new system according to the IS success model. In general, the clear variables of perceived web-based system quality are: flexibility, access convenience, ease of use, integration, response time, sophistication, reliability, accessibility, stability, system speed and usability, navigation, and network speed (Lee et al., 2009).

Multimedia instruction containing PowerPoint slides, lecture notes, and instructional videos that are fragmented logically into a number of individual videos clips in which each focuses on a single subtopic (Zhang, 2005). So, a creation of a multimedia instructional material requires capability to integrate different media such as: audio, video, picture, text, and animation (Sun and Cheng, 2007).

Spiro et al. (1995) noted that multimedia instruction play a significant role in a manner enabling users to enhance their complex cognitive skills. Even further, multimedia instruction can enhance users' ability to retain information (Chapman et al., 1999) and lead them to generate higher performance (Zhang, 2005).

2.4- User Acceptance Theories and Models

Technology needs has grown rapidly in 1970's, at the same time the failures of adopting new technology is increasing in the firms, predicting system or models used became interested for researchers (Chuttur, 2009).

The following Categories (TRA, TPB, TAM, TAM2, TAM3, UTAUT) in the next pages represent the overview of the most commonly used models of accepting technology, as well as considered to be key factors for better understanding of the concept of higher education teacher competence in the field of e-Learning. Furthermore, other categories of external factors have been listed in Table 2-5, in which there is an overview of those factors which -as found in recent studies- showed connection with teacher's accepting e-Learning technology.

2.4.1.TRA (Theory of Reasoned Action)

TRA (Figure 2-3), was developed by Fishbein and Ajzen (1975). They drew the distinction between attitude constructs: attitude toward the object (AO), which refers to a person's evaluation of a specific attitude toward behavior (AB), which refers to person's evaluation of a specific behavior involving the object. "It has been shown that AB relates more strongly to a specified behavior than does AO according to Ajzen and Fishbein, (1977)" (Davis, 1993).

The performance of specified behavior of the user according to TRA, determined by their behavioral intention to perform behavior, and behavioral intention is jointly determined by their attitude and subjective norm. (Davis et al., 1989).

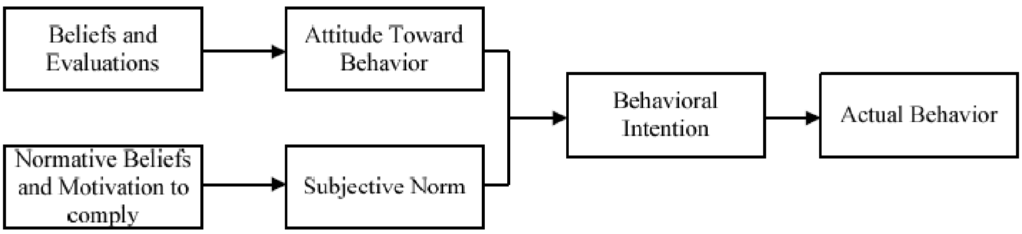

Figure 2-3: Framework of Theory of Reasoned Action (TRA), (Wu et al., 2011)

2.4-2. TPB (Theory of Planned Behavior)

The theory of planned behavior TPB (Figure 2-4) is an extension of the theory of reasoned action, made necessary by the original model's limitations in dealing with behaviors over which people have incomplete volitional control (Ajzem, 1991).

"At the most basic level of explanation, the theory postulates that behavior is a function of salient information, or beliefs, relevant to the behavior" (Ajzem, 1991).

People can hold a many beliefs about any given behavior, but they can attend to only a relatively small number at any given moment according to Milier (1956).

Ajzen (1991) pointed out that the salient beliefs are considered to be the dominant determinants of a person's intentions and actions, and he distinguished three kinds of salient beliefs: first one the behavioral beliefs which are assumed to influence attitudes toward the behavior, second one the normative beliefs which constitute the underlying determinants of subjective norms, the last ones are the control beliefs which provide the basis for perceptions of behavioral control.

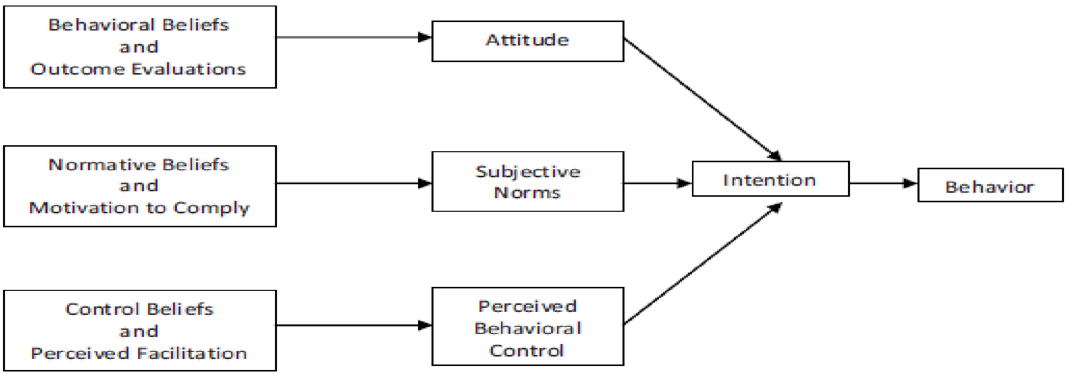

Figure 2-4: Theory of planned behavior (TPB), (Chen et al., 2011)

2.4.3.TAM (Technology Acceptance Model):

The Technology Acceptance Model TAM (Figure 2-5) which was developed by Davis (1989) is an adaptation of TRA which was developed by Fishbein and Ajzen (1975).

"TAM highlights the influence derived from external variables and internal beliefs and indicates that system usage can be explained on the basis of the perceived ease of use and perceived usefulness. The internalization effect mentioned in both TRA and TAM implies that subjective norms may influence one's intention to use and also perceived usefulness of a technology; furthermore, it affects one’s attitude, subjective norms, constructs of the TRA model, and perceived usefulness and perceived ease of use in TAM. In both models, attitude is considered to be influential to behavioral intention" (Wu et al., 2011).

Technology Acceptance Model “is widely applied to access users’ usage in various information system/information technology areas. Learning the critical role of Technology Acceptance Model can guide researchers to design different users’ interface for different online customers, and consequently achieve high user usage in different application areas” (Chen et al., 2011).

TAM is considered to be “one of the most influential research models in studies of the determinants of information systems and information technology acceptance to predict intention to use and acceptance of information systems and information technology by individuals. Technology Acceptance Model has received considerable attention of researchers in the information system field over the past decade", (Chen et al., 2011).

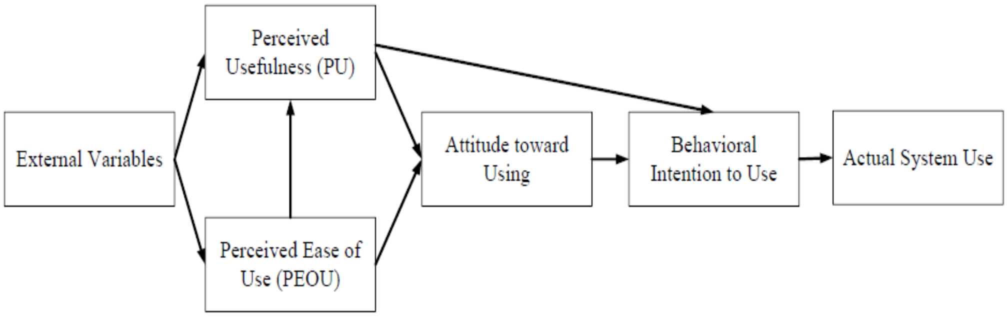

Figure 2-5: Technology Acceptance Model, (Chen et al., 2011)

In this model, there are two main determinants or factors that positively affect the attitudes toward the behavioral intention to use the new technology system. The first factor is perceived ease of use, which means the extent that a person believes that using a particular new technology would be far away from effort. The second factor is perceived usefulness, that's seen as the extent that an individual believes that using a particular new technology would enhance their life performance. Both of these two factors are influenced by external variable (Chen et al., 2011).

Technology Acceptance Model has been employed in various information system areas, (Chen et al., 2011).

2.4.4.TAM2 (Technology Acceptance Model 2):

TAM was developed by Davis et al. (1989), to explain why users accept or reject an innovative information system. While, TAM2 (Figure 2-6) which was developed by Venkatesh and Davis in 2000, through extension of TAM, to revisit the variables of Social Influence (Subjective Norm, Voluntariness, and Image) and Cognitive Instrumental (Job Relevance, Output Quality, and Result Demonstrability) which have an effect on behavioral intention; hence these variables which are considered to be crucial to the study of user acceptance were ignored in TAM. (Wu et al., 2011).

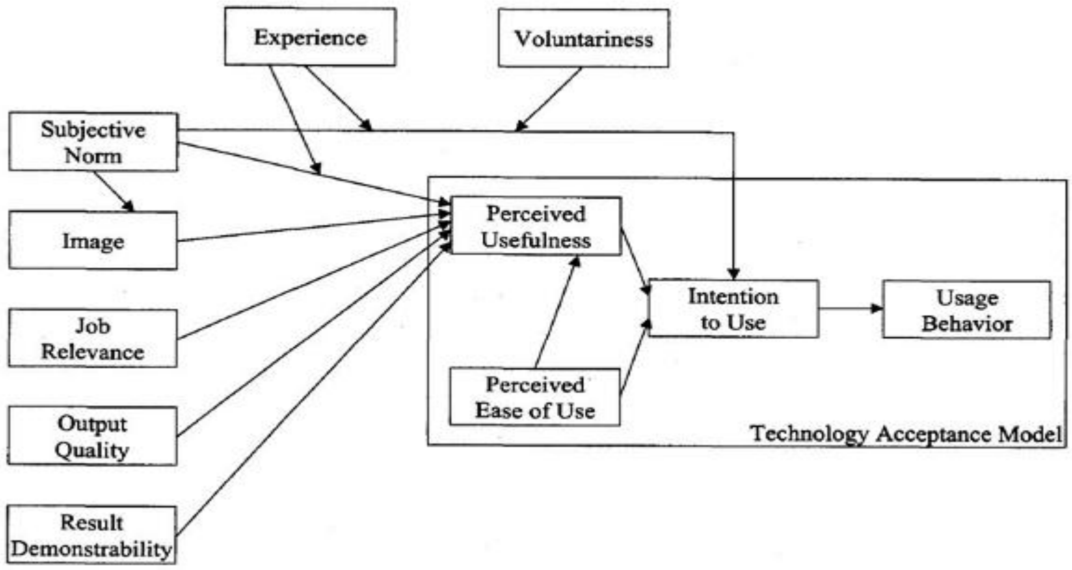

Figure 2-6: TAM2: Technology Acceptance Model 2, (Venkatesh and Davis, 2000)

According to Nina (2005), TAM demonstrates only 40%–50% of technology acceptance in terms of explanatory power, while, TAM2 reaches 60% as Venkatesh and Davis (2000) mentioned, (Wu et al., 2011).

2.4.5. UTAUT (Unified Theory of Acceptance and Utilization of Technology)

UTAUT (Unified Theory of Acceptance and Utilization of Technology) (Figure 2.7), is a technology acceptance model formulated by Venkatesh et al. (2003), developed through a review and consolidation of the constructs of eight models (theory of reasoned action, technology acceptance model, theory of planned behavior, motivational model, model of personal computer use, a combined theory of planned behavior/technology acceptance model, diffusion of innovations theory, and social cognitive theory), aims to explain user intentions to use an information system and subsequent usage behavior. This theory is based on four factors (performance expectancy, effort expectancy, social influence, and facilitating conditions) integrated with behavioral intention and use behavior. Other four factors (Gender, age, experience, and voluntariness of use) theorized to play a moderating role on usage intention and behavior, (Venkatesh et al., 2003).

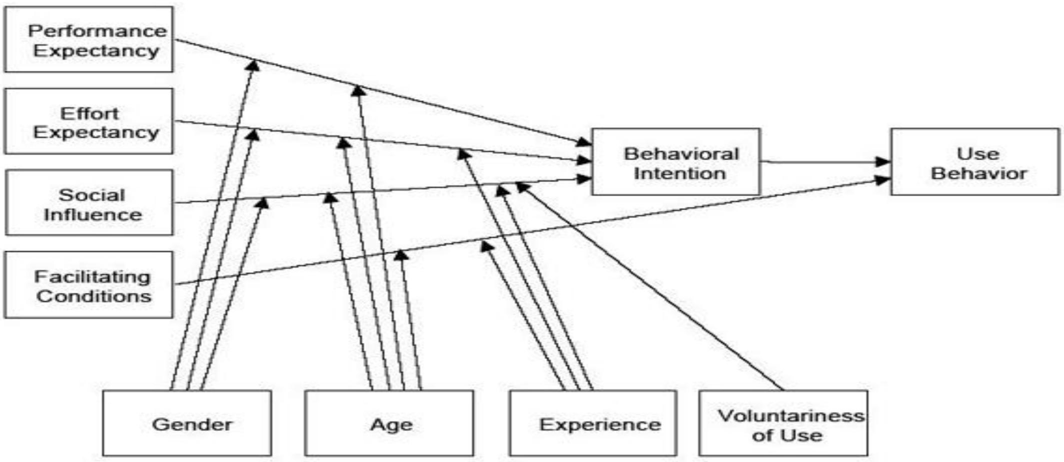

Figure 2-7: UTAUT (Unified Theory of Acceptance and Utilization of Technology), (Venkatesh et al., 2003)

2.4.6. TAM3 (Technology Acceptance Model 3)

TAM was developed and expanded over time to respond to the criticism contained due to poor interpretation of what are the factors that really lead to determine the main factors in the TAM model (usefulness and ease of use), so to maximize the likelihood of technology adoption success some critics argued good fundamental understanding must be done to design the types of programs and interventions. TAM researchers identifying four general types of determinants of perceived usefulness and ease of use: individual difference, system characteristics, social influence, and facilitating conditions according to (Venkatesh, 2000; Venkatesh and Davis, 2000). Venkatesh and Bala (2008) incorporated and elaborated on, all of these earlier findings resulting in the Technology Acceptance Model 3 (TAM3), (Daniel, 2011).

In TAM3 (Figure 2-8), Perceived Usefulness determined by social influences represented by (subjective norm and image) factors, and by system characteristics which represented by (Job relevance, Output quality, and Result demonstrability). Perceived ease of use is the only determinant in this category whose effect on perceived usefulness is moderated by experience, (Daniel, 2011).

Perceived ease of use determined by anchors related to individuals, three of which reflect individual differences (computer self-efficacy, computer anxiety, and computer playfulness), the last a facilitating condition (perception of external control), and adjustment framing of human decision making which related to system characteristics (perceived enjoyment and objective usability), (Daniel, 2011).

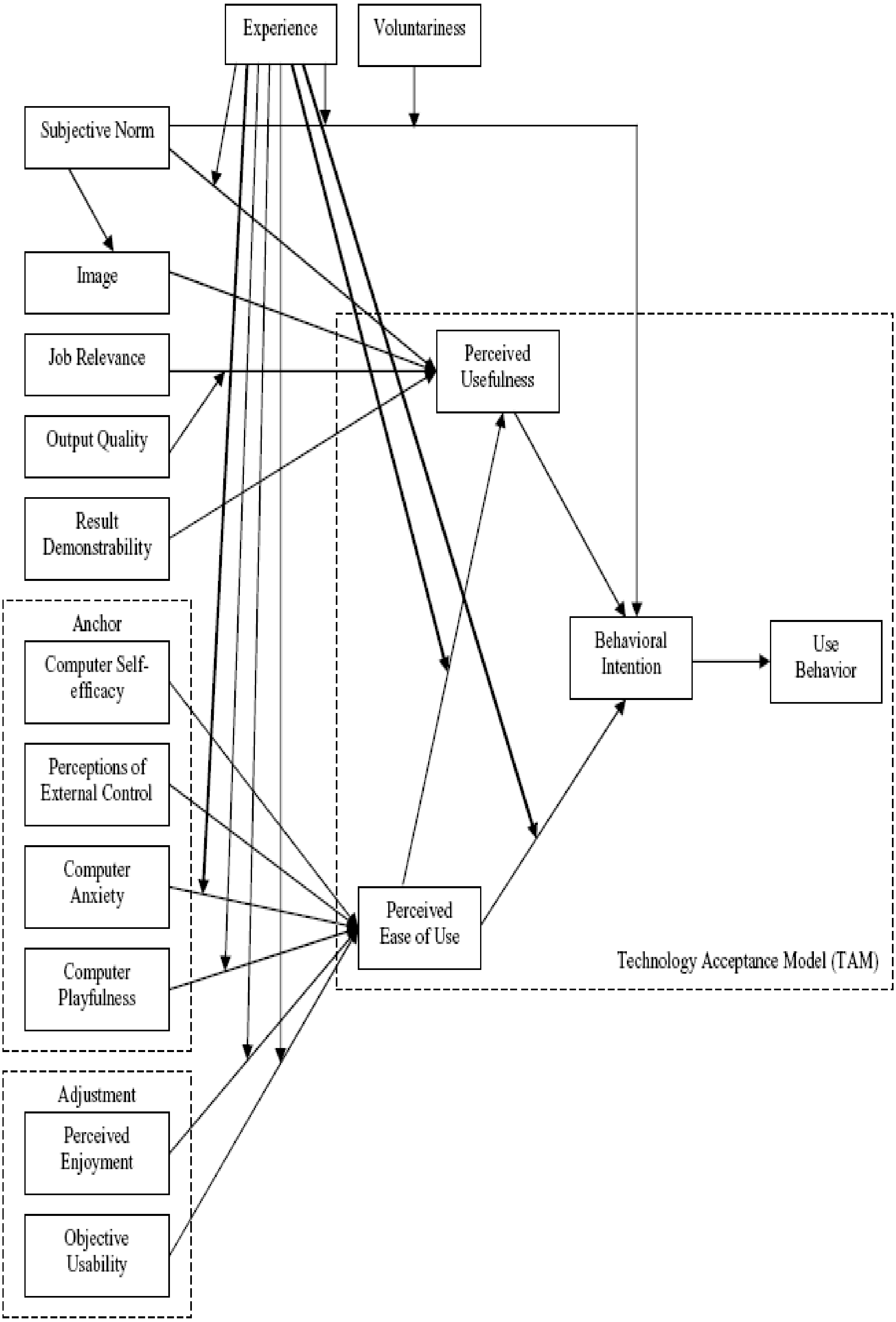

Figure 2-8: TAM 3: Advancing the Technology Acceptance Model, (Venkatesh and Bala, 2008)

2.4.7. DandM IS Success Model (DeLone and McLean Information Systems Success Model)

DeLone and McLean's information system success model in 1992 consists of six factors related to system success that are: user satisfaction, use, system quality, information quality, individual impact, and organizational impact (DeLone and McLean, 1992). Then, DeLone and McLean (2003) updated their IS success model by adding service quality as a new variable, and grouped both organizational and individual impact into a single variable called 'net benefit' (Figure 2-9). Intention to use in this model has negative and positive effects on the level of user satisfaction and vice versa. Both use and user satisfaction affect net benefits. The user satisfaction and intention to use singularly and jointly have been influenced by three determinants system, information, and service quality.

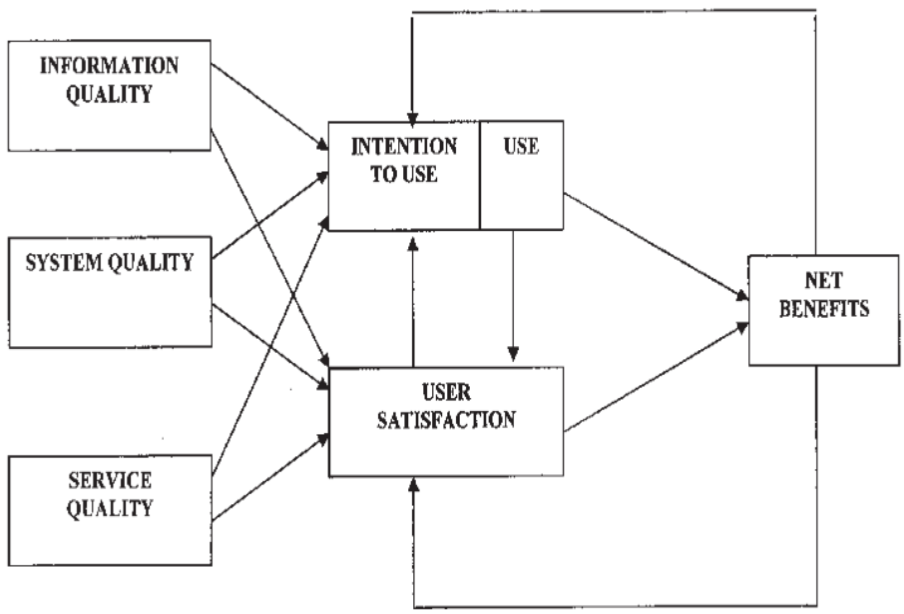

Figure 2-9: DeLone and McLean information system success model (2003), (DeLone and McLean, 2003).

2.5- e-Learning Discussion

2.5.1. Introduction to e-Learning

Throughout the world, e-Learning is gaining ground in higher educational systems in different forms (Chilaoana et al., 2008). Despite this, e-Learning stills a budding, especially in Palestine. This is what puts challenges in front of strategists to put in place the policy framework, for utilizing ICTs as e-Learning tools (Hailes and Hazemi, 2002).

Moreover, the spread of ICT around the worldwide universities is increasing (Chilaoana et al., 2008). For that, UNESCO's policy paper for Change and Development in Higher Education which motivate maximizing use of the advantages offered by the advancement of ICT in order to enhance the quality of their education, as Chilaoana et al. (2008) pointed.

2.5.2. Definition of e-Learning Technology

Learning is defined as an act or process of acquiring knowledge or skill, where the process of transformation experience created this knowledge (Beldagli and Adiguzel, 2010; Arthurs, 2007; Kolb, 1984).

Learning is a cumulative process consisting of stages that does not make learning instant event. These stages of learning process defined by Kolb (1984), as a four-stage cycle that show the pattern of perceiving, thinking, feeling, and acting when we encounter a new experiences (Beldagli and Adiguzel, 2010; Kolb, 1984).

The letter 'E' in e-Learning stands for increasingly acquiring, storing, and circulating knowledge according to Parks (2013), who advocates that the "E" should refer to 'everything' which represents online (courses - synchronous or asynchronous, assessment, qualification testing and certification), sharing knowledge, and performance support in the form electronic configuration, etc; and should refer to 'everyone' which represent each and everyone, rich or poor not only in terms of socioeconomic status, but also in terms of learning opportunities, by innovating technologies with lower cost; and should refer to 'engaging' the producer's point of view and learner's spirit, mind, and body; and should refer to 'easy' specifically when creating e-Learning; etc.

A combination of 'E' and 'learning' created the term e-Learning, that many scholars' efforts have been made to define. There are many definitions of e-Learning already exist in the literature.

Tavangarian et al. (2004) pointed that there are many authors defining e-Learning broadly as adopting electronic media in teaching scenarios.

Hambrecht (2000) considered the e-Learning as a general term that includes a wide range of ICT's technological applications and processes which including education by a computer, web, digital collaboration, and networking.

Cross in 1998 wrote, “eLearning is learning on Internet Time, the convergence of learning and networks" (Cross, 2004).

Gyambrah (2007) noted that the Commonwealth of Learning launched two descriptions of e-Learning in 1990 which are the application of ICT in the basic functions of the institution among them delivering courses and providing services to the learner such as prior learning assessment; the other description is which respect to those organizations that linked them a partnership and alliances in order to facilitate the learning and teaching without showing those institutions in the form of offer instruction.

Other definition of e-Learning: Is all forms of learning and teaching supported electronically, which takes a procedural nature to influence the construction of knowledge based on the experience, knowledge, and practice of the individual learner. So that the learning process is performed electronically on the basis of the communications and information systems, in addition to the possible existence of networks, which serves as specific media prepared in advance for this purpose (Tavangarian et al., 2004).

There is a wide range of applications that are related to virtual education or online learning, which has become known e-Learning, such as Virtual Classrooms (VCR), computer-based learning and Web-based learning (Shraim and Khlaif, 2010b). It displays its contents immediately via the Internet in the form of videotape, audio recordings, interactive TV, CD’s, and satellite broadcast (Kaplan-Leiserson, 2000).

In terms of American Society of Training and Education (ASTD), e-Learning refers to learning based on electronic devices, which include the delivery of content via electronic media such as internet, audio or video, interactive TV, satellite broadcast, CD-ROM, etc.

Hedge and Haward (2004), considered that e-Learning as an innovative approach utilizing the digital technologies and internet to deliver to any learner electronically interactive learning environment at any place and time.

Triacca et al. (2004) pointed that e-Learning was a type of learning online. And according to the other researchers the definition of e-Learning includes utilizing audio and videotape, interactive TV, and satellite broadcast (Ellis, 2004; Serif et al., 2009), besides the instrumental methods introduced and delivered via internet, intranet, CD-ROM (Benson et al., 2002; Clark, 2002), audio or video tape, and satellite TV (Mahanta, and Ahmed, 2012).

Therefore, appeared synonyms for E-learning term such as computer-assisted learning, web-based learning, online course, online learning, virtual learning, distance learning (Dringus and Cohen, 2005; Triacca et al., 2004; Khan, 2001), and virtual classrooms (Keegan et al., 2005), etc. These terminologies make it hard to achieve generic term for the e-Learning definition (Gremu, 2012). But Serif el al. (2009) considered that e-Learning as a term that includes any ICT's-based learning process.

According to these definitions in literature we can summarize e-Learning as: broadly inclusive of all forms of learning and teaching supported emerging technologies, which employs electronic media that delivers (text, audio, images, animation, and streaming video)in education, and includes ICT technologies such as (audio or video tape, satellite TV, CD-ROM, computer-based learning, local intranet/extranet learning, and/or web-based learning).

2.5.3. A categories of e-Learning

The use of e-Learning is mutually in a wide variety of contexts based on the nature of institutions. For example, e-Learning usage in commercial firms refers to the training courses that delivered to firm employees via their network as an innovative strategy. But, in distance education universities such as Al-Quds Open University in Palestine, it refers to the reaching learners at a distance by utilizing a wide spectrum of internet technologies. Recently in most universities, the use of e-Learning as a specific mode to attend a programs or a courses of study for the students interested in studying and accessing educational facilities on-line (Guenaneche and Radigales, 2008).

E-learning whether known as web-based, online, or distance learning have synchronous or asynchronous activates (Ilechukwu, 2013; Marozas et al., 2007). Synchronous e-Learning requires all participants, whether learners and instructors at different locations interacting simultaneously so that each learner is expected to receive instructions at the same time

(Ilechukwu, 2013). While asynchronous e-Learning occurs asynchronously according to time and place (Lado, 2005). So, this type of learning lets learners and instructors participate their idea in the exchange of information without relying on the involvement of the other participants simultaneously.

Synchronous e-Learning includes many software tools such as: audio and video conferencing, virtual whiteboards, instance massaging or on real-time chat (Marozas et al., 2007), and satellite programs such as internet voice telephone (Oye et al., 2012), mobiles communication

Asynchronous e-Learning supported by many technologies such as: email, online courses, online discussion groups (Marozas et al., 2007), discussion forums (Oye et al., 2012; Mahanta and Ahmed, 2012), web pages, CD-ROM, and web-based training (Lado, 2005).

When integrating online learning, whether synchronous or asynchronous with traditional face-to-face learning in classroom that delivered blended (Mahanta, and Ahmed, 2012; Bates, 2005), hybrid, or mixed mode of learning (Bates, 2005).

From the previous definition of e-Learning, we concluded several types of e-Learning technologies that may be considered as a set of tools or applications used by participants as follows:

2.4.3.1- Synchronous e-Learning Tools

Instance massaging or on real-time chat: it is a useful tool that lets learners and instructors communicate textually without suddenly interrupting with verbal intervention when they posted a message of inquiry to the rest of the class (Granda et al., 2010).

Audio conferencing: is one of the most important synchronous e-Learning tools (Granda et al., 2010), which is based on allowing electronic communication between multi-points dispersed geographically (Hough, 1977; Short et al., 1976) by using a telecommunication system to capture and digitalize in real time the analog audio signal of participant's voice (Jeffrey, 1998).

Granda (2010) concluded that audio is classified into three categories, one of them are narrowband CODECS which are employed in a synchronous e-Learning to encode audio signals of individual voice.

Video conferencing: it is another important point-to-point or multipoint tool of synchronous e-Learning systems, in which the video delivered from the instructor is viewed simultaneously by learners (Granda et al, 2010). This telecommunication technology lets participants from two or more separate location see or talk to others, and can also facilitate sharing their files and applications (Roberts, 2009).

According to Becta (2003), there are two kinds of video conferencing systems. The first one called desktop video conferencing systems which are add-ons as a hardware boards and related cameras and microphones to normal dispersed PCs. This technology is most suited to support peer communication. The second type is called dedicated video conferencing systems, which are a single piece of equipment that has a package of all required components, such as a high quality remote controlled video camera to pan left and right or up and down; TV monitors for local and connecting sites; controlling device; audio unit; and software or hardware-based CODEC for recording and sending different kinds of data across a network (Mason, 1994).

Web (audio/video) conferencing: is one of the synchronous online learning or meeting system that enables instructor and learners to have additional class time outside the physical classroom by interacting over the web (Bentley and Collins, 2007). This system includes many tools supported real-time collaboration and instant web-based interaction of small or large groups such as: built-in audio and video conferencing tools, shared whiteboard and desktop, integrated survey tool, chat rooms (Reushle and Loch, 2008), and combination of VOIP (Voice over IP), document, live videos or screen sharing (Handgraaf et al., 2012).

Bentley and Collins (2007) mentioned some advanced web conferencing tools that aid participants sharing ideas, files and applications such as: Elluminate Live, Wimba Live Classroom, Saba Centra, Adobe Acrobat Connect Professional.

In reviews web conferencing term, such synonyms terminologies appeared as: virtual meeting, virtual conference, webinar (one way instructions from instructor) (Stephens and Mottet, 2008), online conferencing, and E-conferencing (Shi and Morrow, 2006), etc.

Interactive Whiteboard or slides presentation: is considered one of the most revolution technologies in the educational field which is used in the various levels of education (Türel and Johnson, 2012). According to Brown (2003), interactive whiteboard is sorted into two kinds. The first one is called an electronic whiteboard, the virtual version of a dry-wipe board on computer that allows instructors to write, draw, or present their instruction that viewed by learners in a virtual classroom such as conferencing and data-sharing systems like Microsoft NetMeeting. The second kind of interactive whiteboard is more like a large display plate, which can be employed as a computer projector screen on which the instructions can be written on the surface of the plate by touching instead of using keyboard or mouse.

Typically, whiteboard is used for viewing PDF and PowerPoint presentations, drawing images, and sharing Word, Excel and other applications (Keegan et al., 2005). This technology allows participants to draw or write on its surface, save image to computer or share it in the network (Brown, 2003), Highlighting or coloring important content, and drag and drop and matching items activities (Türel and Johnson, 2012).

Satellite broadcast: is one of the synchronous e-Learning systems that relies on satellite-based learning tool which suited for distance learning (Gedney et al., 2000)

To overcome the weakness use of high quality video in web-based courses due to the video file's size, download time, and slow presentation due to slow network connections according to National Education Association (NEA) (2000) study (Collin, 2002), satellite-based solution on which links can operate in different frequency bands argued to be a possible alternative (Gedney et al, 2000).

Over it, to deploy the high quality education to a significant number of participants spread geographically, and to remote locations from outmost reach event, Krithivasan et al. (2008) have suggested repeating the successful experience of the Indian Institute of Technology Bombay (IITB) which used in 2002 a satellite-based (VSAT) network that delivering such mechanisms as: data, and audio/video two-way transmission (Krithivasan et al., 2008).

With satellite e-Learning instructor can utilize inclusion in their teaching all kinds of different line-based education resources (Street, 2005).

2.4.3.2- Asynchronous e-Learning Tools

E-mail: is one of the online-based asynchronous e-Learning tools on which learner or more can still access and download the mail contents such instructions and files sent from distant instructor who may in turn receives feedback in the same way (Yatigammana et al., 2014). As well, via email peers can discuss homework (Tsai, 2009). Neither the peers nor their computers are required to be online at the same time.

Learning Management System (Web-based learning): is a system which has many tools of communication and monitoring activities of users who interact within it, and allows control on both individual users and contents. For example Moodle, which has been claimed by many studies to be the best e-Learning platform (Guenaneche and Radigales, 2008).

Moodle is an 'open source' Modular Object-Oriented Dynamic Learning Environment which curtailment (Moodle), and is a free software asynchronous e-Learning scheme, that lets developers design special system based on instructors and learners needs (Kotzer and Elran, 2012).

Moodle allows several web-based resources (YouTube, Wikipedia, Facebook, etc) (Kotzer and Elran, 2012) to be integrated including: text or Html documents, multimedia (video, audio, and graphics), applications (flash-based, PowerPoint), and java applets (Goodwin-Jones, 2003); and enable transformation due to its availability all the time, being backed in several languages, supporting enormous range of online systems, and interfacing with assortment of internet browsers such as: Google Chrome, FireFox, and internet explorer (Kotzer and Elran, 2012).

Moodle design based on socio-constructivist pedagogy (Brandl, 2005) to provide tools that assist an inquiry approach to online-based learn, and to generate environment as standalone that lets collaboration interaction among learners and supplying instructors with tools that help in enhancing learning process (Kotzer and Elran, 2012).

Discussion group (Discussion Forums): is an online discussion site which is considered one of the asynchronous online-based or web-based e-Learning tools that allow learner to access course material, share knowledge or interact with others independent of time and space, so that someone can post an idea, information, and thought, then time later another one can comment on that post and so on, and another learners can explore and read this post discussion (Lado, 2005). Balaji and Chakrabarti (2010) concluded using an online discussion forum as an effective tool to engage the learners outside the classroom.

According to Wang et al. (2008), the structure of discussion forum is like tree-link that comprises of subforums, on which each of them subsumed several topics.

Web pages: such as 'wikis website': is a good asynchronous e-Learning tool for collaboration via online-based learning on which learners are able to update and reorganize the website content (text or pictures) to suit their vision (Augar et al., 2004).

According to Lipponen (2002), this kind of web pages facilitating computer supported collaborative learning that boosts learners knowledge sharing and distribution between a set of participants.

Storage device (CD-ROM): a CD-ROM which is an acronym for (Compact Disc Read-Only Memory): is one of fast and sizable storage devices, suited to be used as asynchronous e-Learning tool on which contents of courses' media-rich data, information, modern titles, and instruction, etc., could be burned (data recorded on it by laser changing), and then distributed to be viewed later by learners (Popescu, 2007).

Cloud computing (Drop Box): is one of web-based asynchronous e-Learning tools, which offers cloud storage and file synchronization allowing instructors or learners to store and exchange digital files among special folder, which could be created on each of their computers and accessible from all of them (Jeong et al., 2013). For example, Drop Box SCloud, and SkyDrive.

As well as the classification of e-Learning tools as synchronous or asynchronous, another classification can be made based on e-Learning platform functionalities and goals. Guenaneche and Radigales (2008) classified as follows:

Content management system (CMS): which employs a communication tools in small projects to generate the content within the system. For example, forums, chat, and email.

Learning management system (LMS): which employs a communication and monitoring tools that allows control on both individual users who interact within the system, and contents which created and loaded with some external authorizing tool. For example, Moodle, Dokeos, and ATutor.

Learning content management system (LCMS): which provides a communication tools that enable instructors to deliver, manage, and re-purpose synchronous and asynchronous online training's content; and enable learners interaction within virtual spaces. For example, live chat rooms, and discussion forums.

Another e-Learning platforms classification can be made according to the software developer as Guenaneche and Radigales (2008) mentioned. Each class as follows:

Open source platforms: in which copyright holder provides a communication tools with its source code that made available with a license to enable studying, changing, and distributing its software to anyone. For example, ATutor, Claroline, Dokeos, and Moodle.

Proprietary platforms: in which copyright holder provides a communication tools with non-free software which licensed under exclusive legal right in order to use the software only under certain conditions. For example, Blackboard, and Saba.

2.5.4. e-Learning Benefits:

E-learning cause changes in the economical, organizational and technical levels, especially in institutions of higher education. And practical experience has shown that the education process used in many of the institutions that used e-Learning technology in different ways, have resulted in different education quantity and quality (Babić, 2012).

There is a great interest in e-Learning technology at both academic and business field, and there is a concentration on developing e-Learning platforms in different countries (Wang and Wang, 2009).

Over the time information technology has become strong, and heavily penetrated in academic activities in higher education due to the development of their ease of use. And teaching methods have been strengthened using the internet and web based on the forums (Qureshi et al., 2012).

Lewis and Allan (2005) and McConnell (2006), considered e-Learning a successful way to engage students in the educational process and knowledge sharing.

E-Leaning caused a coup in education for being exposed a solution to time, distance, and education gaps besides the cost problems (Garry, 2007).

Qureshi et al. (2012) based on literature review presented some benefits of e-Learning listed below:

- Accessibility: that is learner be able to access easily educational material when needed to be studied without any stress of losing important information (Qureshi et al., 2012; Roy and Raymond, 2005).

- Low delivery cost: electronic educational materials that are developed and uploaded online, it can be accessed and utilized from anywhere in the world, and has no expiry date (Qureshi et al., 2012; Allen, 2011).

- Bridging the gap: e-Learning is a practical translation of the theoretical side, and so the gap between theory and practice has been reduced (Qureshi et al., 2012; Johns, 2003).

- Deep learning: when learner involved in the packets of information available online, is not scrambling towards the surface learning, but rather towards deep and active learning (Qureshi et al., 2012; Johns, 2003).

- Shared learning: e-Learning promotes the sharing of information by allowing learners from diverse backgrounds to interact (Qureshi et al., 2012).

- Freedom of speech: some students in the study looking at e-Learning as a facilitator for freedom of expression with a deep focus on learning (Qureshi et al., 2012; Sweeney et al., 2004).

2.5.5. e-Learning Challenges

Andersson and Grönlund (2009), conducted a research on the critical challenges facing the e-Learning that is valid for both developing and developed countries, with a particular focus on developing countries in their studies. In their research, they found 278 papers in the literature review describing the challenges facing the implementation of e-Learning in developing countries. These papers have been reduced to 60 papers on the basis of the exclusion and inclusion criteria based on their quality. Then 30 specific challenges have been identified and grouped into 4 categories shown below:

- Course: There are challenges and concerns related to a given course issues.

Of these growing concerns the course content including curriculum, choice of pedagogical model, and subject content of the course, the teaching and learning activities which addressed as the need for interesting learning interactions, and levels of flexibility, the support functions provided from other staff (including IT-support, and faculty support), and the delivery mode of the course (Andersson and Grönlund, 2009).

- Individuals' Characteristics: In developed countries searched characteristics of individuals whether lecturers and students in terms of acceptance of e-Learning, and that research was less in developing countries. Among these features the lecturer's confidence in the use of computers and other technologies, the motivation to change they have according to their vision about the benefits of e-Learning methods and tools, the extent of their commitment to e-Learning classes, their competences and qualifications in dealing with online teaching, and the time which has been available for the development of e-Learning courses (Andersson and Grönlund, 2009).

- Technological Challenges: This aspect is related to "E" in e-Learning, which dates back to the technological requirements and challenges. According to Andersson and Grönlund (2009), there are several factors that pose a challenge for learning technologies. The first challenge is the access, this factor relates to physical access to PC, internet, and desired contents, and the reliance on bandwidth and connection. The second factor is the cost; there is a need for that in some countries that are looking for low-cost of technological alternatives. The third factor is the software and interface design, whether it is easy to use and supports the model, platform, and pedagogy of e-Learning. Finally the factor related to localization, which concerned with the suitability such technology to local culture, religious values and languages.

- Contextual Factors: It has been considered by Andersson and Grönlund (2009), as a university setting. This setting includes all organizational structure, management, culture, regulations, rules, knowledge management, needs of economies and funding activities of e-Learning's grogram, and required training of teachers and staff, governmental regulations, and rules, and all of societies which include of roles, beliefs, attitude of lecturers and students toward e-Learning.

2.6- International Studies based on the Models of Technology Acceptance

There are many studies conducted in different countries to assess the new or innovative technology acceptance in general, and studies on the critical factors influenced adoption of e-Learning technology, whether in institutions or universities.

Phua et al. (2012), provided some baseline information about the factors influencing the behavioural intention of teachers within 10 districts in the state of Selangor to use the internet as a teaching-learning tool in home economics, based on TAM models' factors listed in Table 2-2.

Farahat (2012), introduced a conceptual framework based on updating TAM model, in order to examine and identify the factors affecting students' behavioral intention to learn online in Egyptian Universities. These factors are listed in Table 2-2.

Asiri et al. (2012), presented a theoretical framework based on two theories, namely the Theory of Reasoned Action (TRA) and Technology Acceptance Model (TAM), to examine factors that influence the attitude of Saudi Arabian faculty members towards using of the Jusur Learning Management System (Jusur LMS) one of the e-Learning management tools used in Saudi Arabian public universities. The factors of this framework are listed in Table 2-2.

Babić (2012), presented an overview of the most commonly used theories and models of accepting e-Learning technology and innovation, where he singled out categories of motivational factors based on existing study results in the field of academic teacher's accepting e-Learning in blended learning environment, which can serve as a foundation for theoretical models in the future empirical researches. These factors are listed in Table 2-2.

Shraim (2010), investigated the factors affecting academic staff towards the adoption of e-Learning Paradigm by conducting a semi-structured interviews with different teaching staff at Birzeit University, from a cross section of different academic departments. In this research, the proposed model was based on TAM model which developed by integrating with (social/individual characteristics and technological factors, and organizational/ contextual factors), listed in Table 2-2.

Wang et al. (2009), developed a system dynamics model integrated with TAM Model, which identified the integration factors of environment variables and teacher's individual characteristics influencing higher education teacher's adoption Of e-Learning system. These factors are listed in Table 2-2.

Nanayakkara and Whiddett (2005), introduced a model which investigated the factors which are classified into three key categories: individual, system and organizational, that influence or inhibit the teaching staff adoption of e-Learning technologies in a polytechnic in New Zealand. These factors are listed in Table 2-2.

From these researches and studies that are based on different models for technology acceptance, which presented a framework suited the nature of a particular country, we can develop and implement a comprehensive framework suited to Palestinian universities to accept e-Learning by lecturers.

Table 2-2: International Studies about factors that influence the Adoption of e-Learning or any new technology

Study	Study Title	Significant Factors	model	Sample
Phua et al. (2012)	Factors influencing the behavioural intention to use the internet as a teaching-learning tool in home economics	• behavioural intention (BI) • Internet attitude (IA), • perceived • usefulness (PU), • perceived ease of use (PEU) • and perceived enjoyment (PE)	Technology Acceptance Model (TAM) **(Appendix A: Figure 1)**	Teachers in Selangor.
Farahat (2012)	Applying the Technology Acceptance Model to Online Learning in the Egyptian Universities	• social influence of the students' • perceived ease of use • perception of the usefulness of online learning • attitude towards online learning • behavioral intention to learn online	update TAM in order to include and examine the possible social influence **(Appendix A: Figure 2)**	students' in Egyptian Universities
Asiri et al. (2012)	Factors Influencing the Use of Learning Management System in Saudi Arabian Higher Education: A Theoretical Framework Note: LMS one of the e-learning management tools used in Saudi Arabian universities	**Internal Variables** • Attitude toward use of technology Affect, Cognition, Behavior. • Pedagogical Beliefs toward e-learning - The Importance of web, - Design, - Constructivist Approach, - Personal Preferences. • Competence level in using Technology **External Variables** • External Barriers - Organizational Barriers. - Technological Barriers. - Social Barriers. • Computer experience • Gender • Training **TRA** • Beliefs and Evaluations • Attitude Toward Behavior • Normative Belief and Motivation to Comply • Subjective Norm (Social Pressure) • Behavioral Intention • Actual Behaviour **TAM** • Perceived Usefulness • Perceived Ease of Use • Attitude Toward Use • Behavioural Intention to • Use • System Use	Jusur LMS framework The theoretical framework for the study based on two theories, namely the Theory of Reasoned Action (TRA) and Technology Acceptance Model (TAM) **(Appendix A: Figure 3)**	faculty members of Saudi Arabian public universities
Babić (2012)	Factors that Influence Academic Teacher's Acceptance of e-Learning Technology in Blended Learning Environment	**Teacher competence** • computer literacy • working with e-learning • system (LMS) • using the instructional design model • online moderating • online mentoring • quality literacy **Teacher's personality:**	categories with key factors from most commonly used theories and models of accepting technology and	higher education teachers in Blended Learning Environmen t

		• self-efficacy • computer anxiety • teacher's organizational • commitment to the pedagogical quality • teaching and learning style **Demographic and situational variables:** • experience with LMS • computer experience • age and gender • years of work • academic title **Attitude and values** • relative advantage, • compatibility, • trialability, • ease of use, • result demonstrability, • observability • usefulness • flexibility **Institutional factors** • reliability of the ICT infrastructure • perceived adequacy of support • Availability of information • changes in structure, • policies and organizational culture • institutional e-strategy • Teacher's academic freedom • organizational culture of teaching work overload • question of property, required resources, professional growth and management • reward and encouragement system and recognition of accomplishments **Situational factors** • field of study characteristics • characteristics of the students, • number of students in virtual classrooms • complexity of education scenario **Acquiring knowledge and skills** • Formal education in the field of pedagogy • Support from the experienced colleagues and experts • formally organized networks, as well as informal group networks, • Organizational learning • Life long education	innovation by higher education teachers **(Appendix A: Figure 4)**	
Shraim (2010)	Factors Affecting Adoption of E-learning Paradigm: Perceptions of Higher Education Instructors in Palestine.	**Social/ Individual Factors** • IT skills and competencies, • peer influence, • reduced workload, • HCI , • students' readiness, accessibility • connectivity. • interaction between faculty • quality of learning	TAM developed: by integrated with (social/individual characteristics and technological	Interviews 12 teaching staff at Palestinian Birzeit University, from a cross section of different academic

		• professional development • Resistance to change • skills and attitudes • awareness **Technological Factors** • infrastructure, • technical support • and human-computer interaction (HCI). • friendliness of the educational technologies. **Organizational Factors** • Awareness • Political support • Institutional support • Motivation • Environment • training, • infrastructure. • financial support • time needed • managers support • appropriate coordination	factors, and organizational / contextual factors).	departments
Wang et al. (2009)	A System Dynamic Model Of Teacher's Adoption Of e-Learning System By Integration Of Environment Varaibles And Teacher's Characteristics	**Environmental variables** • Information quality • System quality • Technical support • Atmosphere **Teacher's individual characteristics** • self-confidence • experience **Teachers' behavior toward e-learning system** • perception of ease of use • perception of usefulness • intention to use **users stages** • potential users, • using users • abandon using users.	Dynamics model of teacher's adoption of e-Learning system. **(Appendix A: Figure 5)**	According to the result of literature review, factors concerning the behavior of teachers
Nanayakkara and Whiddett **(2005)**	A Model of User Acceptance of E-learning Technologies: a Case Study of a Polytechnic in New Zealand	**User Acceptance** **Individual Factors** • Individual Characteristics • Individual Perception **System Factors** • E-learning System Characteristics • External System Characteristics **Organisation Factors** • Organisation Support • Organisation Characteristics	The model has been validated by a case study **(Appendix A: Figure 6)**	Academic staff (teachers and faculty) in Polytechnic in New Zealand
Chuo et al. (2011)	The effect of organizational support, self efficacy, and computer anxiety on the usage intention of e-learning system in hospital	**psychological aspect** • Organizational Support • Self Efficacy • Computer Anxiety • Perceived Ease of Use • Perceived Useful • Usage Intention	Update TAM in order to include psychological aspect **(Appendix A: Figure 7)**	Teaching hospitals in Taiwan
Shraim and Khlaif, (2010a)	An e-learning approach to secondary education in Palestine: opportunities and challenges	**Reliability of the constructs** • usefulness, • self-efficacy, • willingness • and challenges		Students and teachers in Palestine

		• ability and readiness to embrace e-learning. **Characteristics of respondents** • Gender • Age groups • IT competency • Frequency of Internet access • Places of access the Internet		
Borotis et al. (2008)	Critical Success Factors for e-Learning Adoption	Those critical success factors include the alignment with: • business objectives; • leadership; • empowerment of learning aspect; • technological infrastructure; • blended instruction; • careful design; • evaluation and feedback; • time and space to learn; • motivation to learn; • usability; • complete knowledge • of learners' characteristics.		Organizational and user level
Abbad et al. (2009)	Looking under the Bonnet: Factors Affecting Student Adoption of e-Learning Systems in Jordan	• Subjective Norms • Internet Experience • System Interactivity • Self-Efficacy • Technical Support • Perceived ease of use • Perceived usefulness • Intention to use	Technology Acceptance Model (TAM) was developed **(Appendix A: Figure 8)**	Students In Jordan universities
AL-Ammari and Hamad, (2008).	Factors Influencing The Adoption Of e-Learning At UOB	• computer self-efficacy • content quality • subjective norms. • cultural factors • power distance, • individualism vs. collectivism, masculinity vs. femininity, • uncertainty avoidance • and the long-term vs. short term • orientation.	Extension of the Technology Acceptance Model (TAM)	Students in University of Bahrain

2.7- Palestinian's ICT Background

The Palestinian's ICT sector potentially contributes significantly to the development of Palestinian economy due to their great growth in the recent four years. According to Solutions For Development Consulting Co. (2013), ICT sector employs 3% of workforce who are producing 8% of Palestinian GDP.

The reports of Solutions For Development Consulting Co. (2013), revealed that the Palestinian capabilities in the ICT sector not only harnessed locally, but also international market access in Europe, USA, North Africa, and Middle East, by enhancing export and supply some competitively experiences, services, or solutions with high quality standers. Many celebrated international firms include Cisco, Intel, Volvo, and Siemens (AVASANT, 2013).

These capabilities such as: micro processors and software development, business process outsourcing, staff augmentation, ERP customization, mobile applications, banking software, telemedicine, finance and accounting services, HR services (AVASANT, 2013); enterprise resource management, school management, data warehousing, courts automation, telecommunications, internet solutions, portals, and archiving (Solutions for Development Consulting CO., 2012).

According to some statistical indicators, the outlook for the Palestinian ICT sector is promising trend. Statistics show that:

- Approximately, 1500-1600 students specializing in ICT fields graduated from Palestinian's Universities yearly (Solutions for Development Consulting CO., 2012).
- Approximately, 1512273 citizens access to internet in Palestine (West Bank), representing 57.7% of Palestinian population, and 1.7% of Middle East

population (Internet World Stats, 2012), these percentages compared to other Middle East countries are shown in Table 2-3.

- Percentage of enterprises used computer in 2011 was 49.6% in West Bank, and 40.8% in Gaza strip (Palestinian Central Bureau of Statistics, 2014a).

- Percentage of households own computer in 2013 was 54.1% in West Bank, and 43.5% in Gaza strip (Palestinian Central Bureau of Statistics, 2014a). In 2011, the average became 50.9%, and in 2006 was 32.8% (Palestinian Central Bureau of Statistics, 2011).

- Percentage of households had internet at home in 2013 was 39.5% in West Bank, and 28.3% in Gaza strip (Palestinian Central Bureau of Statistics, 2014a). In 2011, the average became 30.4%, and in 2006 was 15.9% (Palestinian Central Bureau of Statistics, 2011).

- Percentage of households have mobile in 2013 was 96% in West Bank, and 97.1% in Gaza strip (Palestinian Central Bureau of Statistics, 2014a). In 2011, the average became 95%, and in 2006 was 81% (Palestinian Central Bureau of Statistics, 2011).

- Percentage of more than 10 years Palestinian's individuals used computer in 2011 was 53.7%, distributed as 54.8% in West Bank and 51.7% in Gaza strip (Palestinian Central Bureau of Statistics, 2014b).

- Percentage of establishments' employees who used computer in 2011 was 52.6% in West Bank, and 31.7% in Gaza strip (Palestinian Central Bureau of Statistics, 2013).

Table 2-3: Middle East Internet Usage and Population Statistics

Middle East Internet Users, Population and Facebook Statistics						
MIDDLE EAST	**Population (2012 Est.)**	**Users, in Dec-00**	**Internet Usage 30-Jun-12**	**% Population (Penetration)**	**Internet % users**	**Facebook 31-Dec-12**
Bahrain	1,248,348	40,000	**961,228**	77.00%	1.10%	413,200
Iran	78,868,711	250,000	**42,000,000**	53.30%	46.70%	n/a
Iraq	31,129,225	12,500	**2,211,860**	7.10%	2.40%	2,555,140
Israel	7,590,758	1,270,000	**5,313,530**	70.00%	5.90%	3,792,820
Jordan	6,508,887	127,300	**2,481,940**	38.10%	2.80%	2,558,140
Kuwait	2,646,314	150,000	**1,963,565**	74.20%	2.20%	890,780
Lebanon	4,140,289	300,000	**2,152,950**	52.00%	2.40%	1,587,060
Oman	3,090,150	90,000	**2,101,302**	68.80%	2.30%	584,900
Palestine (West Bk.)	**2,622,544**	**35,000**	**1,512,273**	**57.70%**	**1.70%**	**966,960**
Qatar	1,951,591	30,000	**1,682,271**	86.20%	1.90%	671,720
Saudi Arabia	26,534,504	200,000	**13,000,000**	49.00%	14.40%	5,852,520
Syria	22,530,746	30,000	**5,069,418**	22.50%	5.60%	n/a
United Arab Emirates	8,264,070	735,000	**5,859,118**	70.90%	6.50%	3,442,940
Yemen	24,771,809	15,000	**3,691,000**	14.90%	4.10%	495,440
Gaza Strip	1,710,257	n/a	**n/a**	n/a	n/a	n/a
TOTAL Middle East	223,608,203	3,284,800	**90,000,455**	40.20%	100.00%	23,811,620

Source: Internet World Stats, (2012). Retrieved August 16, 2014 from http://www.internetworldstats.com/stats5.htm

Although, the ICT sector in Palestine is growing and increasingly contributes well in Palestinian's GDP, but it still faces many challenges. The major challenges that Palestinian ICT firms faced are: skill set availability, limited market, political environment, poor ICT infrastructure, lack of funds, investment and regulations, competition, import restrictions, lack of innovation and focus, restrictions on movement of people and goods (AVASANT, 2013), limited telecommunications infrastructure, absence of intellectual property law, and brain drain phenomenon (Solutions for Development Consulting CO., 2012).

AVASANT (2013) analyzed the demand for ICT services based on the trade in various sectors; found that ICT services wide engaging with higher education sector, government sector, municipalities sector, tourism sector, commercial agribusiness, banking and financial services, and other professional services.

2.7-1. The Engagement of Domestic ICT with Higher Education in Palestine still promising

Higher education institutions rise intending and planning for acquisition of several ICT firm's services in the foreseeable future according to AVASANT (2013) final report such as: enterprise resource planning (ERP), document and content management systems, e-Learning systems, VoIP and network solutions, broadband internet, telecommunication solutions, mobile applications, storage, servers, and databases.

Computer science courses related to ICT fields, in 2011 accounted 3.74% of the total enrollments among all subjects according to the Ministry of Education and Higher Education, that contributes to the sustainability and growth of ICT industry (AVASANT, 2013).

Wihaidi (2009) pointed that there are many Palestinian specialists in diverse software-based ICT technical skills arranged in a sample of Palestinian Information Technology Association of Companies (PITA) from top as follow: MS Windows (53.5%), HTML (42.1%), C++ (42.1%), Oracle (37.8%), Java (35.4%), Linux (29.2%), Router Configuration, MySQL, Cisco, .NET, XML, C#, PHP, ISP, Shell Scripting, Novell, J2EE, Cobra, SAP, Mainframe, and COM/DCOM. These experiences could meet the various domestic and international markets demands.

2.8- Higher Education Sector in Palestine

Educational system in Palestine faced many challenges due to the ongoing Palestinian and Israeli conflict, which represented in frequent closure and mobility restrictions; checkpoint barriers set up by the occupation army that separates teachers and students from their education institutions (Nicolai, 2007); the establishment of Israeli settlements in the vicinity of Palestinian towns and villages; and the building of apartheid wall by Israelis which surrounds all governorates in Occupied Palestinian Territories and had a negative impact on the Palestinian economy and its institutions, whether educational or commercial ones (Falk, 2014).

The total number of students in Palestinian universities increased from 185011 in 2009/2010 to 201308 in 2012/2013, as shown in Table 2-4 below. Besides that, the teaching Staff at these Universities increased from 5557 in 2009/2010 to 6641 in 2012/2013 (Palestinian Central Bureau of Statistics, 2014b). This is an indication of the annual increase in the number of lecturers as well as students in proportion with the increase in population, which calls for future expansion or increase the number of these universities.

Table 2-4: Higher Education Indicators in Palestine, 2009/2010-2012/2013

indicator	Scholastic Year			
	2009/2010	2010/2011	2011/2011	2012/2013
University Students*				
Males	79,047	84,501	85,190	81,052
Females	105,964	116,888	119,930	120,256
Both Sexes	**185,011**	**201,389**	**205,120**	**201,308**
University Graduates				
Males	11,582	12,075	13,058	…
Females	17,171	18,161	19,493	…
Both Sexes	**28,753**	**30,236**	**32,551**	**…**
Teaching Staff at Universities**				
Males	4,598	5,204	5,340	5,309
Females	959	1,198	1,285	1,332
Both Sexes	**5,557**	**6,402**	**6,625**	**6,641**

*University data include students and graduates of intermediate diplomas, bachelor and graduate studies in universities and university colleges.

** Full time and part time.

Source: Palestinian Central Bureau of Statistics, (2014b).

Higher education in Palestine includes 53 accredited institutions in the West Bank and Gaza Strip, distributed as follows: 14 systematic universities, 1 Open University, 18 university colleges, and 20 community colleges (Ministry of Education and Higher Education, 2013). At the university level, bachelor's degree duration is at least four years. But at postgraduate level which leading to a higher diploma, a master's, or a doctorate degree programmes, the duration of these studies are normally two years at least to complete (UNESCO, 2011).

According to Ministry of Education and Higher Education (2013), teaching academic staff in traditional and open education universities was classified based on their academic rank as follows: traditional universities: 4216 academic staff distributed as (180 professors, 350 associate professors, 1475 assistant professors, 1022 lecturers, and 1066 instructors); and open education: 1528 academic staff distributed as (8 professors, 55 associate professors, 364 assistant professors, 1014 lecturers, and 67 instructors) as shown in Table 2-5.

Table 2-5: Distribution of Academic Staff by Institute, Full/Part Time, Rank and Gender, 2012-2013.

Institute Type	Institute	Full Time/ Part Time + Unknown	Full Professor		Associate Professor		Assistant Professor		Lecturer		Instructor		Without		Total		Total FT
			T	F	T	F	T	F	T	F	T	F	T	F	T	F	
Traditional Universities	Al-Azhar University - Gaza	FT	28		59	4	101	7	2		83	19			273	30	303
		PT+ UN													0	0	
	Islamic University - Gaza	FT	49		55	1	106	4	90	25			1		301	30	331
		PT+ UN	10		12	1	137	2	241	33	2	1	1		403	37	
	Al Aqsa University - Gaza	FT	7		26	5	123	17	112	19	3	2			271	43	314
		PT+ UN			1		22	1	49	6	36	31			108	38	
	Hebron University	FT	4		10	1	50	5	8	3	52	14	2		126	23	149
		PT+ UN			3		26	1	85	12	3		1	1	118	14	
	Palestine Polytechnic University	FT			7		23	1	30	7	16	8	24	6	100	22	122
		PT+ UN					1		20	3	21	8	10	1	52	12	
	Bethlehem University	FT	3		4		24	4	20	10	30	19			81	33	114
		PT+ UN	4		8	3	21	7	8	2	40	15			81	27	
	Al-Quds University	FT	14		45	1	167	20	63	14	90	34	52	10	431	79	510
		PT+ UN	2		1		38	3	5	1	71	18	8	3	125	25	
	Birzeit University	FT	10	1	29	3	126	27	46	10	109	55			320	96	416
		PT+ UN	4		7		46	11	11	4	61	24			129	39	
	An-Najah National University	FT	38	1	69	4	323	43	66	12	352	119	2		850	179	1029
		PT+ UN					7		13	4	1	1			21	5	
	The Arab American University	FT	6		11		48	3	18	2	39	9	3		125	14	139
		PT+ UN					12		3		45	18	4		64	18	
	Palestine Technical University-Kadoori	FT			1		34	3	90	23			2	1	127	27	154
		PT+ UN													0	0	
	University of Palestine	FT	1				16	2	15	6	9	2	10	5	51	15	66
		PT+ UN									1				1	0	
	Al-Istiqlal University	FT					13	3	20	4	2		3		38	7	45
		PT+ UN							1	1					1	1	
	Gaza University	FT			2	1	11	2	6	2					19	5	24
		PT+ UN													0	0	
	Total of FT/ traditional universities		160	2	318	20	1165	141	586	137	785	281	99	22	3113	603	3716
	Total of PT+UN/ traditional universities		20	0	32	4	310	25	436	66	281	116	24	5	1103	216	
Open University	Institute	Full Time/ Part Time + Unknown	Full Professor		Associate Professor		Assistant Professor		Lecturer		Instructor		Without		Total		Total FT
			T	F	T	F	T	F	T	F	T	F	T	F	T	F	
	A-Quds Open University	FT	3		30	1	117	11	91	28	51	10	1		293	50	343
		PT+ UN	5		25	3	247	23	923	180	16		19	11	1235	217	
	Total of FT in open universities		3		30	1	117	11	91	28	51	10	1		293	50	343
	Total of PT+UN in open universities		5		25	3	247	23	923	180	16		19	11	1235	217	
Total of FT															3406	653	4059
Total of PT+UN															4509	869	

Source: Ministry of Education and Higher Education (2013).

UNESCO, in 2011, wrote in their report a review of the main objectives of the Ministry of Education and Higher Education in Palestine concerning with laws and basic regulations on education, structure and organization of education, administration and management of education, and the education process.

2.9- E-Learning Technology in Palestine

Solutions For Development Consulting Co. (2013), suggested in their report's recommendation to promote the ICT application usage in the system of basic education through collaboration of academic higher education institutions with private investments.

Shraim (2010) reported that a research finding shows the positive attitudes of Palestinians higher education instructors to proceed to the e-Learning initiative. Added Shraim, to enable them to make full use of possibilities of e-Learning great efforts should be made.

e-Learning in the Palestinian higher education sector is growing rapidly, so that most Palestinian universities offer different forms of online education (Shraim, 2010; Mikki and Jondi, 2010).

2.10- Summary

This chapter presented the factors that influencing e-Learning acceptance. These factors were derived from different models which were discussed in deeply based on international studies. Then, this chapter discussed e-Learning concepts, categories, benefits, and challenges. This study has helped in building a proposed framework, which clarified in Chapter Three that addressed the methodology used in determining the sample and the method of data collection.

Chapter Three

Research Methodology

3.1- Overview

This chapter presents the research conceptual framework and explores the research's methods, types, approach, definition, and strategy. Besides that this chapter shows clearly the sampling techniques, and sample size. Furthermore, this chapter outlines the design of research methods and shows the quality standards for selected research tools.

3.2- Research Design and Approach

In this research, two surveys have been designed to collect data in order to answer the research questions. The first tool was a survey questionnaire, in which we got a quantified results that related to the factors influencing e-Learning acceptance in Palestinian universities by lecturers, and the role of technology usage. The second tool was interviews with the IT or e-Learning specialists in the Palestinian universities which aimed to collect data about the technologies status that related to e-Learning in Palestinian case.

3.2.1.Quantitative versus Qualitative Approach

Quantitative research depends on the measurement of amount or quantity, and the numerical data and statistics (Rajasekar et al., 2013) that is applicable to describe the phenomenon. The quantitative approach seeks to investigate the what, when, and where of decision making, and to investigate the correlations among variables which represents an attribute or characteristic of human studied by researchers (Creswell, 2012), and express the results in terms of quantity (Rajasekar et al., 2013; Kothari, 1985) which presented in tables and graphs (Rajasekar et al., 2013).

Qualitative research, on the other hand, is best applicable to explore the research problem and developing an understanding of the circumstantial of a central phenomenon (Creswell, 2012). According to Rajasekar et al. (2013), the characteristics of qualitative approach marked as follows: descriptive, non-numerical, cannot be graphed, investigates the how and why of decision making, and explanatory research. So, the qualitative research conducted to find out the opinion, attitude, feeling, and behavior of individual toward an institution or toward a particular subject by using such diverse techniques as: in depth interviews, sentence completion test, story completion test, word associated test, (Kothari, 1985), case study, focus groups, structured observation (Greener, 2008) and etc.

Some studies tend to mix qualitative and quantitative research methods, often when the results of one method such as survey used to detail a broad view of the research question, and then develop areas and themes for deeply investigation though in depth interview (Greener, 2008). Social phenomena involving human behavior is often not easy to be unearthed due to various variables that affect these kind of science most of the time, contrast to the natural sciences (Yeasmin and Rahman, 2012). So, social scientists usually operates through experience, observation, ideas, theories, and models in order to observe, verify, and conclude the fact; or to discover new or old facts (Young, 1968). It is found that much single research method used in social research, so that, this kind of studies may suffer from limitations, to overcome these limitations researchers tend to use multiple methods that offer prospect of enhanced confidence (Yeasmin and Rahman, 2012).

To solve the research problem and to answer its questions, the researcher conducted a hybrid model approach that mixed qualitative and quantitative research methods.

Researcher used exploratory in depth interviews with IT and e-Learning specialists in Palestinian Universities to explore and understanding the status of e-Learning system and its applications, tools, infrastructure obstacles, challenges, and some lecturer behavior toward the system adoption. To achieve this purpose, researcher employed a qualitative semi-structure interview method in which flexible questions have been used.

In addition, researcher used a quantitative structured survey method to test research hypotheses that related to the factors that influence e-Learning acceptance by universities lecturers in Palestine through investigating the correlations between these factors.

Research Strategy

To design research, researcher should choose a strategy which guides their choice of research's method or combined methods that affect what they actually do to answer the questions of their researches (Greener, 2008). Furthermore, these questions need to be justified and settled before any hastiness to ask.

So, the starting point of research project is clarifying and formulating the research topic (Ghauri and Grønhaug, 2005). The researcher will be able to select the most suited research strategy, data collection, and analysis techniques or procedures (Saunders et al., 2009).

Usually, there are various kinds of research strategies that can be used for explanatory, descriptive, and exploratory research (Yin, 2003), and conducted for the research area, in order to collect data and get their results, for example: experiment, survey, case study, action research, grounded theory, ethnography, archival research (Saunders et al., 2009; Greener, 2008), and interview (Greener, 2008).

The researcher conducted a survey method in this research, in which the second and third research questions have been answered. That are: What are the factors that have been influencing acceptance of e-Learning technology by lecturers? What is the role of the using ICT in the e-Learning acceptance?. The data collected in this method by designing an organized questionnaire, with limit number of standard questions as a part of survey strategy, which were asked of all respondent.

The survey strategy allowed researcher to collect quantitative data which are analyzed quantitatively by using a descriptive and inferential statistics that's led to possible reasons for correlations among factors related to proposed framework of this research. An explanatory purpose is achieved by using this method.

According to Saunders et al. (2009), a survey approach give researchers more control over the research process, and allowing to generate findings from a sizable population with a lower cost, and narrow-range of data collected compared with other strategies.

Furthermore, the researcher conducted semi-structured interview strategy to answer the first question: What are the technologies used in the Palestinian universities that serve and support e-Learning?. The researcher achieved this purpose by designing an open-question questionnaire that illustrated the current situation of using e-Learning in Palestinian universities. An exploratory purpose is achieved by using this method.

Open-question is designed to enable respondents to answer the question in their own way (Dillman, 2007) and to encourage them to provide developmental answers (Grummitt, 1980). This kind of questionnaire is used widely in semi-structured interviews to collect qualitative categorical data or information, such as services provided (Saunders et al., 2009).

Based on the survey and semi-structured interview outcomes, the researcher answered the fourth question: What changes are required to foster a collaborative e-Learning environment?.

3.3- The General Framework of this Research

Based on previous discussions, theories, models, and factors related to e-Learning acceptance as a system specific, we have integrated and identified the most important factors that influence e-Learning acceptance by lecturers in Palestinian's universities. The proposed framework (Figure 3.1), primarily consists of the factors of TAM3 model integrated with intervention and environmental factors.

The following diagram explains the general framework of the research:

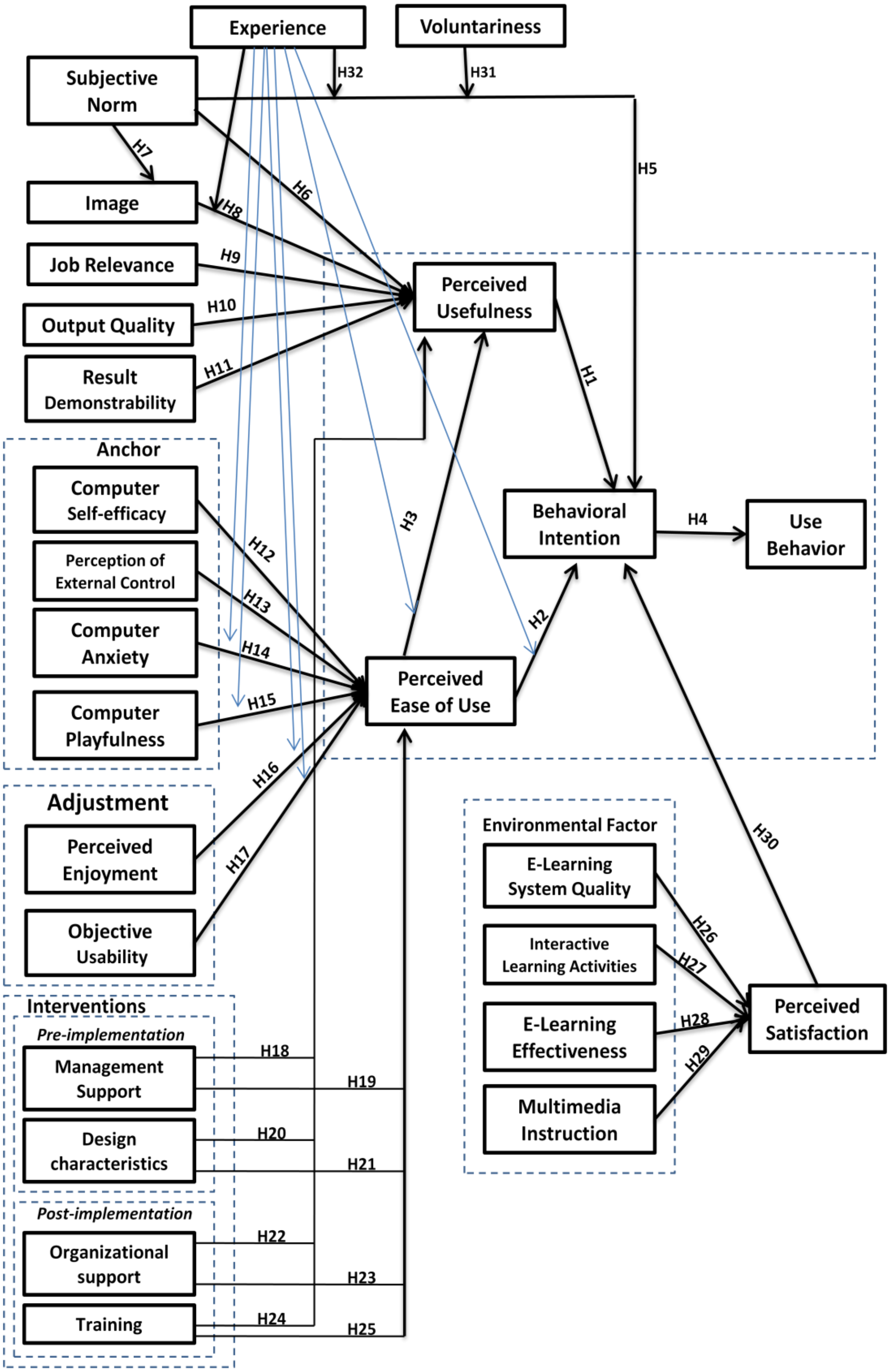

Figure 3-1: Research General Framework for e-Learning Acceptance. Source: (the researcher depending on chapter2).

3.4- Research Hypotheses and their Development

Prior researches on user's new technology acceptance or individuals' behavior toward e-Learning system or specified system adoption have presented many factors some of which are supported as we proposed and examined in our research model, are listed in Table 3-1.

Table 3-1: Summary of research hypotheses' factors and their development based on models and relative supporting references.

Hypot-heses	Independent variables (Source Var.)	Dependent variables	Developed based on	Relative supporting references
H1	Perceived Usefulness	Behavioral Intention	TAM; TAM2; TAM3	Venkatesh and Bala (2008); Venkatesh and Davis (2000); Davis (1989); Chuo et al. (2011); Abbad et al. (2009); AL-Ammari and Hamad (2008); Phua et al. (2012); Liao et al. (2008); Hu et al. (1999); Chismar and Wiley-Patton (2003); Sun and Zhang (2006); Chatzoglou et al. (2009); Hwang and Yi (2002); Punnoose (2012); Venkatesh (2000); Al-alak and Alnawas (2011); Shih and Huang (2009)
H2	Perceived Ease of Use	Behavioral Intention	TAM2; TAM3	Vankatesh and Davis (1996); Venkatesh (1999); Venkatesh and Bala (2008); Venkatesh and Davis (2000); Chuo et al. (2011); Abbad et al. (2009); AL-Ammari and Hamad (2008); Phua et al. (2012); Mohamed and Abdul-Karim (2012); Sun and Zhang (2006); Chatzoglou et al. (2009); Hwang and Yi (2002); Venkatesh (2000); Al-alak and Alnawas (2011); Shih and Huang (2009)
H3	Perceived Ease of Use	Perceived Usefulness	TAM; TAM2; TAM3	Davis et al. (1989); Venkatesh and Bala (2008); Venkatesh and Davis (2000); Davis (1989); Chuo et al. (2011); Abbad et al. (2009); AL-Ammari and Hamad (2008); Park (2009); Liao et al. (2008); Hu et al. (1999); Mohamed and Abdul-Karim (2012); Sun and Zhang (2006); Chatzoglou et al. (2009); Hwang and Yi (2002); Punnoose (2012); Venkatesh (2000); Allahyari and Ramazani (2012)
H4	Behavioral Intention	Use Behavior	TRA; TPB; TAM; TAM2; UTAUT; TAM3	Venkatesh and Bala (2008); Venkatesh and Davis (2000); Davis (1989); Hwang and Yi (2002); Shih and Huang (2009)

Table 3-1: Cont..

Hypot-heses	Independent variables (Source Var.)	Dependent variables	Developed based on	Relative supporting references
H5	Subjective Norm	Behavioral Intention	TRA; TPB; TAM2; TAM3	Venkatesh and Bala (2008); Venkatesh and Davis (2000); Ajzen (1991); Abbad et al. (2009); AL-Ammari and Hamad (2008); Park (2009); Schepers and Wetzels (2007); Punnoose (2012)
H6	Subjective Norm	Perceived Usefulness	TAM2; TAM3	Venkatesh and Bala (2008); Venkatesh and Davis (2000); Abbad et al. (2009); AL-Ammari and Hamad (2008); Park (2009); Punnoose (2012)
H7	Subjective Norm	Image	TAM2; TAM3	Venkatesh and Bala (2008); Venkatesh and Davis (2000);
H8	Image	Perceived Usefulness	TAM2; TAM3	Venkatesh and Bala (2008); Venkatesh and Davis (2000)
H9	Job Relevance	Perceived Usefulness	TAM2; TAM3	Venkatesh and Bala (2008); Venkatesh and Davis (2000); Chismar and Wiley-Patton (2003);
H10	Output Quality	Perceived Usefulness	TAM2; TAM3	Venkatesh and Bala (2008); Venkatesh and Davis (2000); Chismar and Wiley-Patton (2003)
H11	Result Demonstrability	Perceived Usefulness	TAM2; TAM3	Venkatesh and Bala (2008); Venkatesh and Davis (2000)
H12	Computer Self-Efficacy	Perceived Ease of Use	TAM3	Venkatesh and Bala (2008); Chuo et al. (2011); Abbad et al. (2009); AL-Ammari and Hamad (2008); Park (2009); Chatzoglou et al. (2009); Hwang and Yi (2002); Punnoose (2012); Venkatesh (2000); Shih and Huang (2009); Lewis et al. (2003)
H13	Perception of External Control	Perceived Ease of Use	TAM3	Venkatesh and Bala (2008); Venkatesh (2000); Aggorowati et al. (2012)
H14	Computer Anxiety	Perceived Ease of Use	TAM3	Venkatesh and Bala (2008); Chuo et al. (2011); Chatzoglou et al. (2009); Venkatesh (2000)
H15	Computer Playfulness	Perceived Ease of Use	TAM3	Venkatesh and Bala (2008); Venkatesh (2000)
H16	Perceived Enjoyment	Perceived Ease of Use	TAM3	Venkatesh and Bala (2008); Venkatesh (1999); Sun and Zhang (2006); Agarwal and Karahanna (2000); Yi and Hwang (2003); Chatzoglou et al. (2009); Hwang and Yi (2002); Venkatesh (2000)
H17	Objective Usability	Perceived Ease of Use	TAM3	Venkatesh and Bala (2008); Venkatesh (2000)

Table 3-1: Cont..

Hypot-heses	Independent variables (Source Var.)	Dependent variables	Developed based on	Relative supporting references
H18	Management Support	Perceived Usefulness	Literature	Venkatesh (2006); Venkatesh and Bala (2008); Chatzoglou et al. (2009); Allahyari and Ramazani (2012); Davis et al. (1989); Shih and Huang (2009); Lewis et al. (2003)
H19	Management Support	Perceived Ease of Use	Literature	Venkatesh (2006); Mueller and Zimmermann (2009); Davis et al. (1989); Shih and Huang (2009)
H20	Design Characteristics	Perceived Usefulness	Literature	Venkatesh (2006); Venkatesh and Bala (2008)
H21	Design Characteristics	Perceived Ease of Use	Literature	Venkatesh (2006); Mueller and Zimmermann (2009); Davis (1993)
H22	Organizational Support	Perceived Usefulness	Literature	Venkatesh (2006); Venkatesh and Bala (2008); Igbaria and Iivari (1995); Allahyari and Ramazani (2012)
H23	Organizational Support	Perceived Ease of Use	Literature	Venkatesh (2006); Chuo et al. (2011); Igbaria and Iivari (1995)
H24	Training	Perceived Usefulness	Literature	Venkatesh (2006); Venkatesh and Bala (2008); Allahyari and Ramazani (2012)
H25	Training	Perceived Ease of Use	Literature	Venkatesh (2006); Amoako-Gyampah and Salam (2004);
H26	e-Learning System Quality	Perceived Satisfaction	DandM IS Success model; Liaw (2008) model;	Liaw and Huang (2011); Liaw (2008); Oun-Alla (2013); DeLone and McLean (2003); Wixom and Todd, (2005)
H27	Interactive Learning Activities	Perceived Satisfaction	Liaw (2008) model;	Liaw and Huang (2011); Liaw (2008)
H28	e-Learning Effectiveness	Perceived Satisfaction	Literature	Al-Maskari and Sanderson (2010)
H29	Multimedia Instruction	Perceived Satisfaction	Liaw (2008) model;	Liaw and Huang (2011); Liaw (2008)
H30	Perceived Satisfaction	Behavioral Intention	DandM IS Success model; Liaw (2008) model;	DeLone and McLean (2004); DeLone and McLean (2003); Wixom and Todd, (2005); Liaw (2008)
H31	Voluntariness	moderator	TAM2; UTAUT; TAM3	Venkatesh and Bala (2008); Venkatesh and Davis (2000)
H32	Experience	moderator	TAM2; UTAUT; TAM3	Venkatesh and Bala (2008); Venkatesh and Davis (2000); Alenezi, (2012)

3.5- Sampling Technique

The researcher should be able to conclude about the entire population by studying the sample that are generalizable to the targeted population. It is very important for researcher to determine how to choose their sample, which represents a subset or subgroup of population of interest (Sekaran and Bougie, 2010).

3.5.1. Study Population:

Population refers to the researcher's interest of whole group of people, things, or events who seeks to investigate (Sekaran and Bougie, 2010) based on sample statistics in some cases. So, it is significant to determine the research population before discussing or selecting a sufficient single number from targeted population.

In a usage of survey strategy, researcher should specify their research population and its representative sample size (Saunders et al., 2009) in order to clarify how the survey instrument will be distributed and how data will be analyzed.

The main objective of this study is to determine the factors influencing e-Learning acceptance by universities lecturers in Palestine, in order to introduce a comprehensive e-Learning acceptance framework that fit the Palestinian case. So, the full time lecturers in fifteen universities, distributed in West Bank and Gaza have been accepted to be in the research population (Table 3-2).

Table 3-2: Distribution of Academic Staff by Institute, Full Time, and Gender, 2012-2013. Developed by researcher. Data retrieved from Ministry of Education and Higher Education (2013).

No.	Universities		Academic Teaching (Full + Part-Time)			Academic Teaching (Full-Time)			
			F/P T	M	F	FT	%	M	F
1	Al-Azhar University	Gaza	303	273	30	**303**	7.5%	273	30
2	Islamic University	Gaza	771	704	67	**331**	8.2%	301	30
3	Al Aqsa University	Gaza	460	379	81	**314**	7.7%	271	43
4	University of Palestine	Gaza	67	52	15	**66**	1.6%	51	15
5	Gaza University	Gaza	24	19	5	**24**	0.6%	19	5
6	Hebron University	West Bank	281	244	37	**149**	3.7%	126	23
7	Palestine Polytechnic University	West Bank	186	152	34	**122**	3.0%	100	22
8	Bethlehem University	West Bank	222	162	60	**114**	2.8%	81	33
9	Al-Quds University	West Bank	660	556	104	**510**	12.6%	431	79
10	Birzeit University	West Bank	584	449	135	**416**	10.2%	320	96
11	An-Najah National University	West Bank	1055	871	184	**1029**	25.4%	850	179
12	The Arab American University	West Bank	221	189	32	**139**	3.4%	125	14
13	Palestine Technical University-Kadoori	West Bank	154	127	27	**154**	3.8%	127	27
14	Palestinian Academic Security College (Al-Istiqlal University)	West Bank	47	39	8	**45**	1.1%	38	7
15	A-Quds Open University	West Bank and Gaza	1795	1528	267	**343**	8.5%	293	50
Total			**6830**	**5744**	**1086**	**4059**	100%	**3406**	**653**

- M: Male , F: Female , T : Teacher FT: Full-Time PT: Part-Time

3.5.2. Study Sample

The research sample is most commonly linked with survey strategy, where the researchers seek to meet their research objectives or to answer its questions by their conclusion from the probability sampling about the target population of interest (Saunders et al., 2009). Sampling is considered to be as a practical method of studying the attitudes, thoughts, relationships and abilities of targeted people (Greener, 2008).

The major steps of sampling as Sekaran and Bougie (2010) mentioned are define the target population; determine the sample frame that represents all the elements in the population; determine the sampling design (probability or non-probability) depending on the extent of generalisability required, time and other resources demanded, and the purpose of the study; decide the suited sample size that is more representative based on research objective, confidence interval, confidence level, amount of variability in the population, and the cost and time constrains, and then execute the sampling process.

When the researchers decide on a suited sample size, according to Greener (2008) they need the following consideration: absolute sample size than relative size; statistical and central limit theorem, which denotes that for sufficiently large sample size n greater than 30, sum and averages of random variables from arbitrary distribution have approximate normal distributions; margin of error which represents the least percent of certainty that the sample would represent the whole population; time and cost; Non-response which represent who refuses to take part, who does respond to proportion of questions, or who changes job or stopped functioning in the role researcher expected; and variation in the population, if it is highly varied, then larger sample size is needed.

The researchers resort to a probability sampling design, when all a single member of the population have a known chance to be surveyed or being selected as subjects in the sample (Sekaran and Bougie, 2010).

In a quantitative approach, the probability sampling being the most rigorous form of sampling in which the researcher can claim that the sample findings could be generalized to the population (Creswell, 2012).

This research dealt with two categories of participants in order to understand the problem area, to determine the factors that affect e-Learning adoption by lecturers of Palestinian universities, and to find the correlations among these factors. So, each category has been investigated separately.

The first category of participants is related to lecturers' attitude toward e-Learning acceptance in Palestinian universities. In this category, the researcher investigated the factors that influence the attitude of subgroups within the whole targeted population based on stratified random sampling.

Stratified random sampling is considered to be one of the five most common complex probability sampling suited with population not completely homogeneous (Sekaran and Bougie, 2010). Palestinian universities are spread out in all West Bank and Gaza areas and governorates. The lecturers in each governorate's universities having their own culture and beliefs depending on the circumstances of the university and its geographical area. For example, citizen's habits and norms in south of Palestine are not exactly the same as north, as well as the reality of e-Learning application and their related policies and procedures are different from one university to another. For that, the researcher divided or segregated the population into mutually exclusive groups, each subgroup represent a university which termed stratum. Then the stratification followed by random selection of participants from each stratum based on the percentage of full-time lecturers in each university that illustrated in Table 3-3.

Table 3-3: Percentage of Full-Time Lecturers in Each University. Data retrieved from Ministry of Education and Higher Education (2013).

No.	Universities		Academic Teaching Full-Time		FT will be Surveyed
			FT	%	FT
1	Al-Azhar University	Gaza	**303**	7.5%	**26**
2	Islamic University	Gaza	**331**	8.2%	**29**
3	Al Aqsa University	Gaza	**314**	7.7%	**27**
4	University of Palestine	Gaza	**66**	1.6%	**6**
5	Gaza University	Gaza	**24**	0.6%	**2**
6	Hebron University	West Bank	**149**	3.7%	**13**
7	Palestine Polytechnic University	West Bank	**122**	3.0%	**11**
8	Bethlehem University	West Bank	**114**	2.8%	**10**
9	Al-Quds University	West Bank	**510**	12.6%	**44**
10	Birzeit University	West Bank	**416**	10.2%	**36**
11	An-Najah National University	West Bank	**1029**	25.4%	**89**
12	The Arab American University	West Bank	**139**	3.4%	**12**
13	Palestine Technical University-Kadoori	West Bank	**154**	3.8%	**13**
14	Palestinian Academic Security College (Al-Istiqlal University)	West Bank	**45**	1.1%	**4**
15	A-Quds Open University	West Bank and Gaza	**343**	8.5%	**30**
Total			**4059**	100%	**352**

Confidence Level	95%
Confidence Interval	5
Population	4059
Sample size needed	**352**

The second category is related to IT and e-Learning specialist in all universities in Palestine. In this case, researcher explored the reality of e-Learning in Palestinian universities based on semi-structured interview with specialists who have sufficient experience in the fields of IT and e-Learning, wherefore non probability sampling was conducted. Purposive sampling is the most suited type of non probability sampling were used in this situation.

The purposive sampling fits with very small population within qualitative research in which statistical inferences couldn’t be yielded (Greener, 2008), and there is a "necessary to obtain information from specific target groups" as Sekaran and Bougie (2010) argued.

3.5.3. Sample Size

In surveys' situation and other statistical methods, it is necessary for researchers to determine the minimum sample size that required to generalize the results on the population based on three main elements according to Saunders (2009), that are:

1- **The confidence level**: which represent the certainty level in which the characteristics of data collected by researchers will represent the characteristics of whole population. Confidence denotes how researchers are certain about their estimates will really hold true for the targeted population (Sekaran and Bougie, 2010).

2- **The margin of error to be tolerated (confidence interval)**: which represent the accuracy that is required for any researchers' estimation from their sample.

3- **The population size**: which represents the size of whole targeted population from which researchers' samples were being drawn.

To calculate the sample size that is fit with appropriate confidence level, and appropriate margin of error, the researcher used based on Daniel (2009) the following simple formula:

$$\boldsymbol{n = \frac{z^2\, pq}{d^2}} \qquad \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots \textbf{(1)}$$

Where:

z = ***z*** statistic for a confidence level (The researcher worked with 95 percent level of certainty, so ***z*** = 1.96 for 95% confidence level that used in this research).

p = percentage picking a choice (The researcher used *p* = 0.5 for a sample size needed). *P* = 0.5 yield a maximum value of n when used in the formula. additionally, this procedure should be used when researcher unable to reach the best estimation of *p* (Daniel, 2009).

***q* =** *(1 – p)*. This implies that *q = 0.5*

d = confidence interval, expressed as decimal (The researcher used *d* = 0.05).

$\boldsymbol{n}$ = sample size that is ($n/N \leq 0.05$), where N = the whole population (Daniel, 2009). But, in this research n = 385, and (n/N = 0.095). So, the finite population correction has been used in this research.

The researcher used the formula with finite population correction (Daniel, 2009) as follows:

$$\boldsymbol{n = \frac{Nz^2pq}{d^2(N-1) + z^2pq}} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \mathbf{(2)}$$

The population size of this study is 4059 full-time lecturers, so the sample size of this research is 352 samples with 95% confidence level based on the above equations.

The sample size of the qualitative research – semi-structured interviews with 15 IT and e-Learning specialists who represent 15 traditional and open universities in Palestine. The researcher asked each university about its impressions. So, the IT specialist and e-Learning specialist were selected from each university.

3.6- Research Methods

We designed two surveys to collect data in order to answer the research questions. The first tool was a survey questionnaire, in which we got quantified results related to the factors influencing e-Learning acceptance in Palestinian universities by lecturers, and the role of technology usage. The second tool was interviews with the IT or e-Learning specialists in the Palestinian universities which aimed to collect data about the technologies status that is related to e-Learning in Palestinian case.

3.6.1. The First Tool: Semi-Structured Interview

Interview is one of methods used for collecting data; through conducting a purposeful discussion between the researcher and others (Kahn and Cannell, 1957). So, when researcher exchange views with one or more participants by asking them general open or ended questions and then recording their answers, this termed a qualitative interview (Creswell, 2012); that can be carried out face-to-face, via telephone, via the medium of the computer, or online (Sekaran and Bougie, 2010).

In this research, we used semi-structured interview as an exploratory tool, in order to answer the first question. So, we conducted face-to-face and telephone interviews with e-Learning or IT specialist in targeted universities. We conducted telephone interviews in some cases because these universities are sited away from each other, in addition to being distributed between the West Bank and Gaza, and there was a need for additional information besides the research time was limited.

- **Semi-structured interviews**: This kind of interviews are non-standardized, in which the researcher will have some questions and themes listed to be covered, beside that researcher may omit or add additional questions to explore the research objectives.

The interview which was divided into three main themes that are:

- The first theme, related to the e-Learning infrastructure, applications and tools that used, and the reality of ICT in these universities.

- The second theme, describes the obstacles and barriers that facing e-Learning, and the impressions of lecturers about e-Learning system.

- The third theme, explores the volume of the administrative support, and the organizational interventions in these universities.

We refined the draft key questions, which have been included in each theme, by specialist in e-Learning, after that the final version has been refined by the research supervisor.

3.6.2. The Second Tool: Questionnaire

Research's questionnaire was designed with closed questions which allowed respondents to make quick choices among a set of alternatives based on Likert scale, that has helped us in achieving the objectives of this research by providing us with accurate data and results without ambiguous despite the large size of the research population. Sekaran and Bougie (2010), considered all the items in a questionnaire that based on Likert, nominal, ratio, or ordinal scale closed.

The questionnaire of this research ended with an open-ended question to invite respondents to comment on topics that might not have been covered adequately, as Sekaran and Bougie (2010) suggested.

First draft of the questionnaire was designed as the following:

1- We designed a questionnaire cover, which began with an introduction. We cover all of the introduction contents according to Dillman (2007) suggestions.

2- Beside the introduction, the first page consists of the first part of questions related to personal information which elicited such information as gender, age, faculty, teaching experience, and academic rank.

3- Then we set some questions in the second part to measure the computer, internet, and e-Learning usage.

4- In the third part of the questionnaire, we set seventy-three statements to examine the variables were determined in the previously proposed framework in this research.

5- We chose odd number (five) of points on the rating scale, which called five Likert-style rating scale to measure the statements in the third part of the questionnaire with the following anchors: "1" strongly agree, "2" agree, "3" neutral, "4" disagree, "5" strongly disagree. We chose at least two or three statement to cover the meaning of each variable. In addition, the statements did not go beyond the five questions in the best of cases, because more than five statements would be impractical and long.

6- We took into account, that the statements of the questionnaire not to exceed 20 words, or not to exceed one full line in print as Horst (1968), and Oppenheim (1986) preferred.

7- We drafted the third part of questionnaire statements depending on specific previous empirical studies as a main source, and on the viewpoint of universities' experts in e-Learning fields. Table 3-4 lists the source of third part questionnaire statements.

8- We discussed first draft of the research questionnaire with the research supervisor. After that, we reviewed the English Version of the questionnaire to ensure it would achieve the goals of the research. Adjustments were made.

9- Then we translated the questionnaire's title, introduction, and all parts statements into Arabic Language because it's a mother language in Palestine. The translation process also reviewed by a lecturer at Department of Arabic Language in Arts Faculty at An-Najah National University in Palestine to make sure that the sentences' grammar and syntax in Arabic Version were correctly formulated.

10- And then, we reviewed again with research supervisor to ensure that the lexical, idiomatic and experiential meaning of all statements in Arabic corresponds to the meaning in English as Usunier (1998) also suggested to be taken into account, and to ensure that the translation of the instrument to the local language accurately matches the original language.

Table 3-4: Source of Questionnaire Statements.

Factors	Questionnaire Statements	Source of the Statements
Usefulness	Using (the system's name) makes my lifestyle easier	Liao et al. (2008); Davis (1993); Chen et al. (2011)
	Using (the system's name) improves my performance in my job	Venkatesh (2000); Park (2009); Davis (1989); Mohamed and Abdul Karim (2012); Venkatesh and Bala (2008); Sun and Zhang (2006).
	I believe (the system's name) is a useful learning tool	Liaw and Huang (2011); Liaw (2008); Sun and Zhang (2006).
Ease to Use	My interaction with (the system's name) is clear and understandable	Davis (1989); Liao et al. (2008); Adams et al. (1992); Igbaria et al. (2002); Venkatesh (2000); Mohamed and Abdul Karim (2012); Chismar and Wiley-Patton (2003); Venkatesh and Bala (2008).
	Interacting with (the system's name) does not require a lot of my mental effort	Liao et al. (2008); Adamset al. (1992); Igbaria et al. (2002); Venkatesh (2000); Chismar and Wiley-Patton (2003); Venkatesh and Bala (2008).
	I find (the system's name) easy to use	Park (2009); Liao et al. (2008); Adams et al. (1992); Igbaria et al. (2002); Venkatesh (2000); Mohamed and Abdul Karim (2012); Venkatesh and Bala (2008); Sun and Zhang (2006).
Intention	Assuming I had access to (the system's name), I intend to use it.	Venkatesh (2000); Venkatesh and Bala (2008).
	If significant barriers did not exist, I would use (the system's name)	Chismar and Wiley-Patton (2003);
	I'm willing to go voluntarily to experience (the system's name)	Experts in e-Learning sector
Subjective Norm	People who are important to me think that I should use (the system's name)	Chismar and Wiley-Patton (2003); Ajzen (1991); Abbad et al.(2009); Venkatesh and Bala (2008); Experts in e-Learning sector
	My decision to adopt (the system's name) influenced by my friends	Punnoose (2012); Experts in e-Learning sector

	My decision to adopt (the system's name) influenced by the viewpoint of colleagues to this system	Experts in e-Learning sector
	My colleagues who influence my behavior think that I should use (the system's name)	Venkatesh and Bala (2008); Chismar and Wiley-Patton (2003); Ajzen (1991); Abbad et al.(2009); Punnoose (2012); Experts in e-Learning sector
Image	Lecturers in my university who use (the system's name) have more prestige than those who do not	Chismar and Wiley-Patton (2003); Venkatesh and Bala (2008).
	Lecturers in my university who use (the system's name) have a high profile that influence their promotion	Chismar and Wiley-Patton (2003); Venkatesh and Bala (2008).
	Lecturers obtain a financial incentives when they use (the system's name)	Experts in e-Learning sector
Job Relevance	In my job, usage of (the system's name) is important	Chismar and Wiley-Patton (2003); Venkatesh and Bala (2008).
	The use of (the system's name) is pertinent to my various job-related tasks	Chismar and Wiley-Patton (2003); Venkatesh and Bala (2008).
Output Quality	The quality of the output I get from (the system's name) is high	Chismar and Wiley-Patton (2003); Venkatesh and Bala (2008).
	I expect the quality of future (the system's name) to be high	Chismar and Wiley-Patton (2003).
Result Demonstrability	I believe I could communicate to others the consequences of using (the system's name)	Chismar and Wiley-Patton (2003); Venkatesh and Bala (2008).
	The results of using (the system's name) are apparent to me	Chismar and Wiley-Patton (2003); Venkatesh and Bala (2008).

Table 3-4: Source of Questionnaire Statements Cont..

Factors	Questionnaire Statements	Source of the Statements
Computer Self-efficacy	I feel confident finding information in (the system's name)	Park (2009); Liaw and Huang (2011); Liaw (2008); Mohamed and Abdul Karim (2012);
	I have the necessary skills for using an (the system's name)	Park (2009);
	I could complete the job using (the system's name) applications, if someone showed me how to do it first	Venkatesh (2000); Venkatesh and Bala (2008).
External Control	I have control over using the (the system's name)	Venkatesh (2000); Venkatesh and Bala (2008).
	I have the resources, opportunities and knowledge necessary to use (the system's name)	Venkatesh (2000); Venkatesh and Bala (2008).
	(The system's name) is compatible with other systems I use	Venkatesh (2000); Venkatesh and Bala (2008). Experts in e-Learning sector
Computer Anxiety	Computers do not scare me at all	Venkatesh (2000); Venkatesh and Bala (2008);
	Working with a computer not makes me nervous	Venkatesh (2000); Venkatesh and Bala (2008);
	I haven't avoided computers because they are not intimidating to me	Sam et al. (2005); Experts in e-Learning sector
	I feel computers are necessary tools in both educational and work settings	Sam et al. (2005).
Computer Playfulness	I would be creative when using a computer	Venkatesh (2000); Barranis (2011); Webster and Martocchio (1992); Venkatesh and Bala (2008).
	I wouldn't be bored when using a computer	Barranis (2011); Webster and Martocchio (1992).
	I would be playful when using a computer	Venkatesh (2000); Barranis (2011); Webster and Martocchio (1992); Venkatesh and Bala (2008).
	I would be flexible when using a computer	Venkatesh (2000); Barranis (2011); Webster and Martocchio (1992).
Enjoyment	I find using (the system's name) to be enjoyable	Venkatesh (2000); Sun and Zhang (2006); Venkatesh and Bala (2008).
	The actual process of using multimedia in (the system's name) is pleasant	Venkatesh (2000); Sun and Zhang (2006); Venkatesh and Bala (2008).
	I have fun using (the system's name)	Venkatesh (2000); Sun and Zhang (2006); Venkatesh and Bala (2008).
Objective Usability	I can get the task done as scheduled when using (the system's name)	Developed by researcher; Experts in e-Learning sector
	The tasks not require more effort to be accomplished when using (the system's name)	Developed by researcher; Experts in e-Learning sector
Management Support	managerial support is more effective for (the system's name) implementation	Developed by researcher; Experts in e-Learning sector
	Direct management support are important in creating favorable perceptions toward (the system's name)	Developed by researcher; Experts in e-Learning sector
	The university established a senior position or positions specifically for (the system's name) management	Developed by researcher; Experts in e-Learning sector
	The university have appropriate policies outlining the intellectual property of course material	Developed by researcher; Experts in e-Learning sector
	Most of our (the system's name) technology services are supported through a centralized system	Developed by researcher; Experts in e-Learning sector

Table 3-4: Source of Questionnaire Statements Cont..

Factors	Questionnaire Statements	Source of the Statements
Design Characteristics	The design characteristics of (the system's name) remain stable throughout the implementations process	Developed by researcher based on questions of: Venkatesh and Bala (2008); Aggorowati et al. (2012); Experts in e-Learning sector
	(The system's name) applications and elaborations are not difficult to understand and use	Developed by researcher based on questions of: Venkatesh and Bala (2008); Aggorowati et al. (2012); Experts in e-Learning sector
Organizational support	The University provides telecommunications equipment and computer resources to use (the system's name)	Developed by researcher; Experts in e-Learning sector
	The University support and encourage staff to use (the system's name)	Developed by researcher; Experts in e-Learning sector
	Help is available from the university when I have a problem in using (the system's name)	Developed by researcher; Experts in e-Learning sector
	the University provides educational seminars and interviews that help to using (the system's name)	Developed by researcher; Experts in e-Learning sector
Training	The kind of training in using of (the system's name) that provided to me was complete	Amoako-Gyampah and Salam (2004).
	My level of understanding (the system's name) was substantially improved after going through the training program	Amoako-Gyampah and Salam (2004).
	The training gave me confidence in (the system's name)	Amoako-Gyampah and Salam (2004).
	The trainers aided me in my understanding of (the system's name)	Amoako-Gyampah and Salam (2004).
System Quality	I am satisfied with (the system's name) functions	Liaw (2008).
	I am satisfied with (the system's name) content	Liaw (2008).
	I am satisfied with (the system's name) interaction	Liaw (2008).
Interactive Learning Activities	I would like to share my (the system's name) experience	Liaw (2008).
	I believe (the system's name) can assist teacher-learner interaction	Liaw (2008).
	I believe (the system's name) can assist learner-learner interaction	Liaw (2008).
Effectiveness	I believe (the system's name) can assist learning efficiency	Liaw (2008).
	I believe (the system's name) can assist learning performance	Liaw (2008).
	I believe (the system's name) can assist learning motivation	Liaw (2008).
Multimedia instruction	I like to use voice media instruction	Liaw (2008).
	I like to use video media instruction	Liaw (2008).
	I like to use multimedia instruction	Liaw (2008).
Satisfaction	I am satisfied with using (the system's name) as a learning assisted tool	Liaw (2008).
	I am satisfied with using (the system's name) functions	Liaw (2008).
	I am satisfied with (the system's name) contents	Liaw (2008).
	I am satisfied with multimedia instruction	Liaw (2008).

3.6.3. Quality Standards for the Research Tool

To ensure the questionnaire quality, we conduct several procedures to test the questionnaire.

3.6-1.1. Pilot study

Before using our questionnaire to collect data, a pilot test was conducted to refine and improve the questionnaire. In this case, respondents answering the questions without facing any problems in understanding and recording data correctly. Saunders et al. (2009) argued that pilot test will enable researcher to obtain some assessment of the validity and suitability of the questions, and the reliability of the collected data.

Initially, we reviewed the questionnaire by a group of experts and arbitrators. The names of the experts and arbitrators listed in (Appendix B: Table 1). We took into account their comments on the questionnaire contents, format, and structure that have contributed in establishing content validity and enabling us made necessary amendments earlier to pilot testing.

After that, we refined the questionnaire, then we chose twenty participant from different Palestinian universities to review the questionnaire with them. Participants made comments on the contents and statements' number of the questionnaire. Participants in the pilot test were excluded from the research sample.

The comments from all experts, arbitrators, and pilot test participants were discussed with the research supervisor. Then adjustment were made and the questionnaire was refined again to be ready for distribution after testing the validity and reliability of the questionnaire.

3.6.3.2.Validity

To ensure that the possibility of getting the answer wrong have been reduced we paid attention to two particular focuses on research design: validity and reliability.

Validity, is a test tool that concerned with how well a developed instrument measures what the researcher intend to measure (Sekaran and Bougie, 2010). So, this tool is necessary to test whether the findings are really about or related to the proposed purpose, or whether the researcher measure the right concept. Creswell (2012), mentioned that the researchers when using content validity methods usually goes to a panel of experts or judges in order to have them identifying whether the questions are valid.

In this research, we used different techniques or methods to measure the validity of the questionnaire. These methods are:

- We relied on the literature when designing the research model and it's hypothesis. Furthermore, the validity and reliability have been tested and trusted in the previous empirical studies in the field of new technology adoption.

- We refined the instruments and statements of the research tool based on the arbitrators and experts' comments in order to achieve the research purpose.

- We refined the research tool more than once with my supervisor to ensure that the measuring fit with what we intend to measure.

- We conducted a pilot study with a twenty participant from different universities to review and refine the questionnaire in order to ensure that the research tool can achieve the research purpose.

- We checked the reliability to make sure the consistency of the questionnaire that can achieve the research purpose.

- We developed the questionnaire statements based on empirical new technology acceptance studies, Palestinian specialists in e-Learning and IT, and experts in statistics and questionnaire designing (Previos Table 4-1: shows the source of each statement related to each factor that included in the questionnaire).

3.6.3.3. Reliability

Saunders et al. (2009) argued that "for a questionnaire to be valid it must be reliable".

Reliability, indicates that the scores yield from an instrument are consistence and stable (Creswell, 2012). In other words, the results should be nearly the same when researchers carry out the tool instruments in the same way in multiple time at different occasions. So, when researcher examine the reliability of the research tool, he ensure the extent to which this measure error free and without bias (Sekaran and Bougie, 2010).

In this research, in which the questionnaire based on Likert-type scale, we do not have information about the validity of scores from the past uses of these instrument in Palestine, so we examined the questionnaire reliability by using the Cronbach alpha method according to Creswell (2012) suggestion, which tests the internal consistency. By this method, we measured the correlation between each item and others in the questionnaire.

Cronbach's coefficient alpha considered to be the most popular, the perfectly adequate index, and the most frequently used for examining whether measure's items and the subsets of items are correlated highly.

We chose 80 participants from Palestinian universities to measure the reliability of the questionnaire. Cronbach's alpha was calculated for all statements in the questionnaire as following (Table 3-5):

Table 3-5: Reliability Statics of Factors Influencing e-Learning Adoption.

Factor Influencing e-Learning Adoption	Cronbach's alpha
2.1- Usefulness	3.1- 0.780
4.1- Ease to Use	5.1- 0.740
6.1- Intention	7.1- 0.864
8.1- Subjective Norm	9.1- 0.715
10.1- Image	11.1- 0.700
12.1- Job Relevance	13.1- 0.813
14.1- Output Quality	15.1- 0.830
16.1- Result Demonstrability	17.1- 0.832
18.1- Computer Self-efficacy	19.1- 0.768
20.1- External Control	21.1- 0.870
22.1- Computer Anxiety	23.1- 0.847
24.1- Computer Playfulness	25.1- 0.908
26.1- Enjoyment	27.1- 0.896
28.1- Objective Usability	29.1- 0.697
30.1- Management Support	31.1- 0.754
32.1- Design Characteristics	33.1- 0.699
34.1- Organizational support	35.1- 0.894
36.1- Training	37.1- 0.954
38.1- System Quality	39.1- 0.881
40.1- Interactive Learning	41.1- 0.832
42.1- Effectiveness	43.1- 0.946
44.1- Multimedia instruction	45.1- 0.942
46.1- Satisfaction	47.1- 0.934
48.1- All statements in study	49.1- 0.968

All the factors that influence E-Leaning adoption are above 70%, as well the total reliability of the questionnaire is around 97% . Therefore, the research tool is reliable.

3.6.3. Distribution of the Questionnaire

We adopted the stratified random sampling to collect the data from Palestinian universities spread out in all West Bank and Gaza areas and governorates.

The questionnaire was distributed in all strata, in which each university considered to be one stratum or subgroup from the research population. The number of questionnaires in each university fit with the number of their full-time lecturers.

The following table (Table 3-6) shows how the questionnaires were distributed throughout all Palestinian universities. As well as, it shows all details about data collection and the percentage of response rate. The number of full-time lecturers in each university retrieved from the annual statistical guide 2012/2013 for Palestinian higher education institutions, which published by the Ministry of Education and Higher Education (2013).

Furthermore, it is obvious in the Table 3-6, that the overall response rate in all universities is 86.6%. Where the response rate in all universities excluded Open university in Gaza Strip is higher than in West Bank, although the lack of response of two universities in Gaza and one in West Bank due to the lack of interest in the view of the size of the samples in these universities are relatively small and not representative. The response rate in Gaza Strip is 88.9% and in West Bank is 84.1%.

Table 3-6: Distribution and Collection of Data.

No.	Traditional Universities		Academic Teaching Full-Time		No. of Surveyed	Survey's Received	Valid Surveys	Response Rate
			FT	%	FT			
1	Al-Azhar University	Gaza	303	7.5%	26	24	24	92.3%
2	Islamic University	Gaza	331	8.2%	29	29	29	100.0%
3	Al Aqsa University	Gaza	314	7.7%	27	27	27	100.0%
4	University of Palestine	Gaza	66	1.6%	6	0	0	0.0%
5	Gaza University	Gaza	24	0.6%	2	0	0	0.0%
6	Hebron University	West Bank	149	3.7%	13	10	10	76.9%
7	Palestine Polytechnic University	West Bank	122	3.0%	11	11	11	100.0%
8	Bethlehem University	West Bank	114	2.8%	10	10	10	100.0%
9	Al-Quds University	West Bank	510	12.6%	44	36	36	81.8%
10	Birzeit University	West Bank	416	10.2%	36	28	28	77.8%
11	An-Najah National University	West Bank	1029	25.4%	89	77	77	86.5%
12	The Arab American University	West Bank	139	3.4%	12	10	10	83.3%
13	Palestine Technical University-Kadoori	West Bank	154	3.8%	13	13	13	100.0%
14	Palestinian Academic Security College (Al-Istiqlal University)	West Bank	45	1.1%	4	0	0	0.0%
15	A-Quds Open University	West Bank and Gaza	343	8.5%	30	30	30	100.0%
Total (Open university)			**4059**	100%	**352**	**305**	**305**	**86.6%**

3.7- Summary

This empirical study has two parts: the first is seeking for exploring the status of e-Learning in Palestinian universities, to achieve this purpose a qualitative approach within an interview strategy has been conducted. The second part is seeking to determine the factors that influencing e-Learning acceptance by lecturers in Palestinian universities, to achieve this purpose a general framework were designed, a hypotheses were developed, and a quantitative approach within a survey strategy has been conducted.

The following chapter presents the research results and findings based on the analysis of the data which has been collected via these two tools.

Chapter Four
Data Analysis and Results

4.1- Overview

This chapter presents the results of analysis for the data collected as follows: via questionnaire, and via interview. It shows the results of descriptive statistics and hypotheses testing derived from the Statistical Package for the Social Sciences (SPSS) software, by which this study determined the factors affecting e-Learning acceptance in Palestinian universities according to the proposed framework. Furthermore, this chapter presents the e-Learning acceptance framework in Palestine. Also, this chapter explores the reality of e-Learning in Palestinian universities from the viewpoint of specialists in this area who were interviewed via the second tool.

4.2- Descriptive Analysis

According to the questionnaire design, respondents have different personal information; these differences introduce different responses toward technology usage, e-Learning usage, and the factors that influence e-Learning adoption within different universities. The following results shows these differences.

4.2.1. Personal Information

The total number of participants from twelve universities in Palestine is 305, with response rate 86.6%. The following tables present the characteristics of the participants.

- **Gender**

According to Table 89 in Appendix B, the sample includes 253 male who form 83.0% of the participants, and 52 female who form 17.0% of the participants. Figure 4-1 shows the gender distribution in this research.

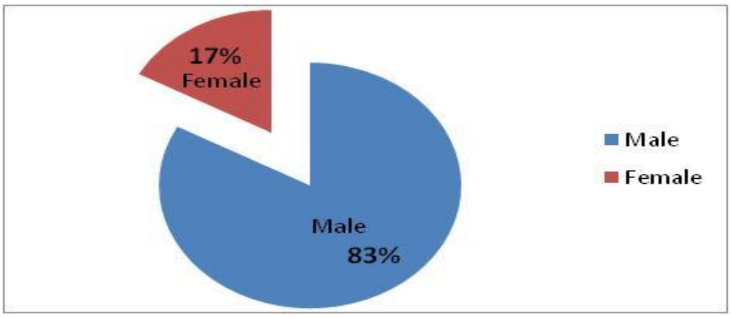

Figure 4-1: Distribution of Gender

- **Age**

Age was divided into four intervals; the Table 90 in Appendix B shows the details of the participants ages. Figure 4-2 shows the age distribution in this research.

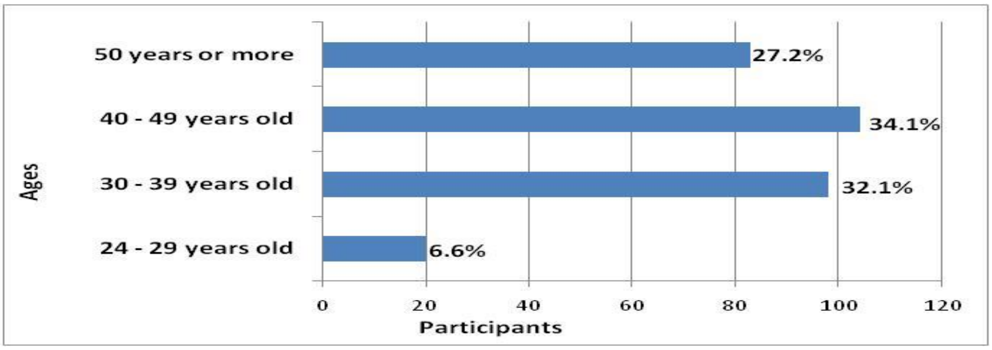

Figure 4-2: Distribution of Age

- **The University**

A specific number of questionnaires were distributed in each traditional university and Open University based on the number of full-time lecturers. The Table 91 in Appendix B shows the details of the participants in each university. Figure 4-3 shows the age distribution in this research.

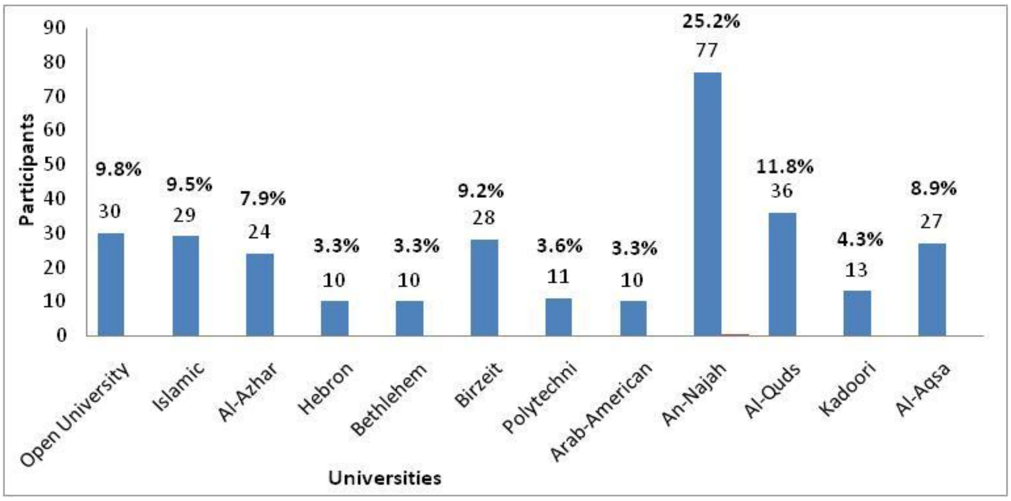

Figure 4-3: Distribution of Universities

- **Nature of the College**

Colleges in all universities were divided into two categories based on the nature of the college is it natural science or human science. The Table 92 in Appendix B shows the details of the colleges. Figure 4-4 shows the colleges distribution in this research.

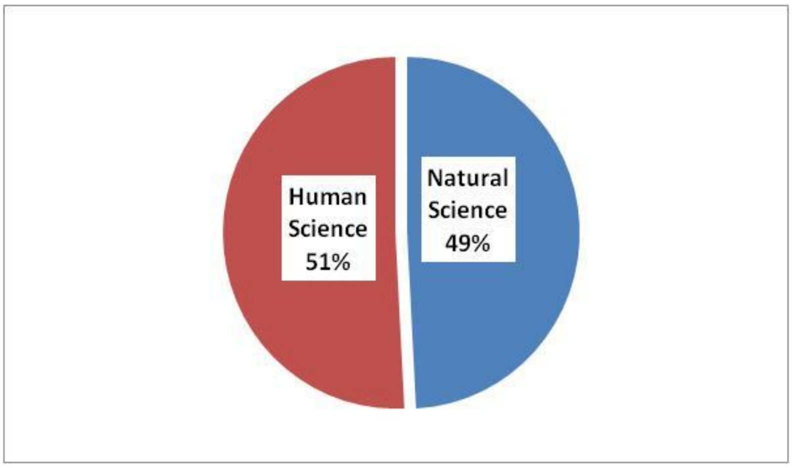

Figure 4-4: Distribution of Colleges

- **Teaching Experience**

Teaching experience was divided into four period intervals. The Table 93 in Appendix B shows the details of the participants teaching experiences. Figure 4-5 shows the teaching experiences distribution in this research.

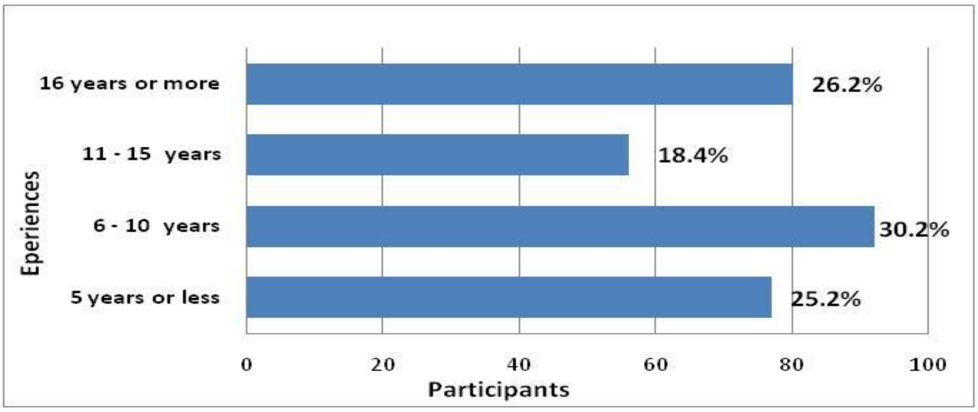

Figure 4-5: Distribution of Experiences

- **Educational Level**

Educational level was divided into five standards. The Table 94 in Appendix B shows the details of the participants educational levels. Figure 4-6 shows the educational levels distribution in this research.

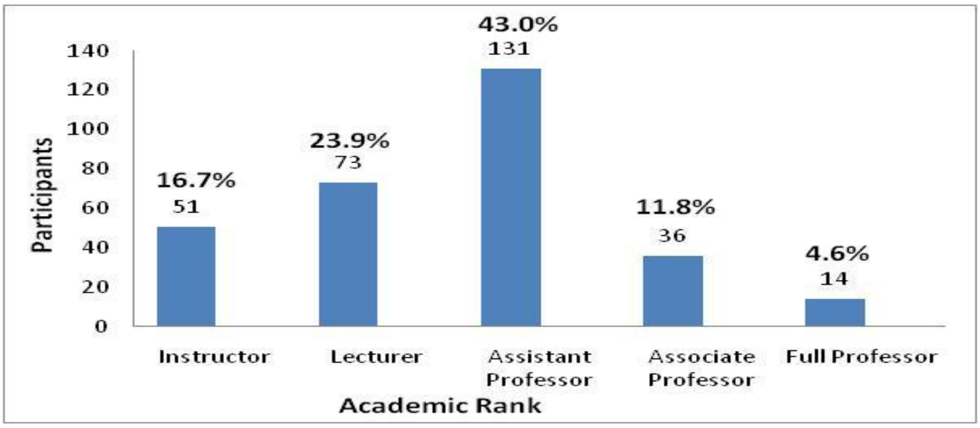

Figure 4-6: Distribution of Academic Rank

The results of analysis of personal information data explores the following facts:

- The highest percentage of participants is males who form 83.0% of respondents.

- The highest percentage of participants aged (40-49 years old) who form 34.1% of respondents.

- The highest percentage of participants from An-Najah National University who form 25.2% of participants.

- The highest percentage of participants lecturing in human faculties form 50.8% of participants.

- The highest percentage of participants having teaching experiences (6-10 years) who form 30.2% of participants.

- The highest percentage of participants ranked into assistant professor form 43.0% of participants.

4.2.2. Technology Usage

Respondents on the part of a computer, internet, and e-Learning usage have different responses. The following discussion shows these differences.

- **Internet Usage per Hour per Day**

Internet usage per hour per day was divided into four period intervals; Table 95 in Appendix B shows the details of the internet usage. Figure 4-7 shows the internet usage distribution in this research.

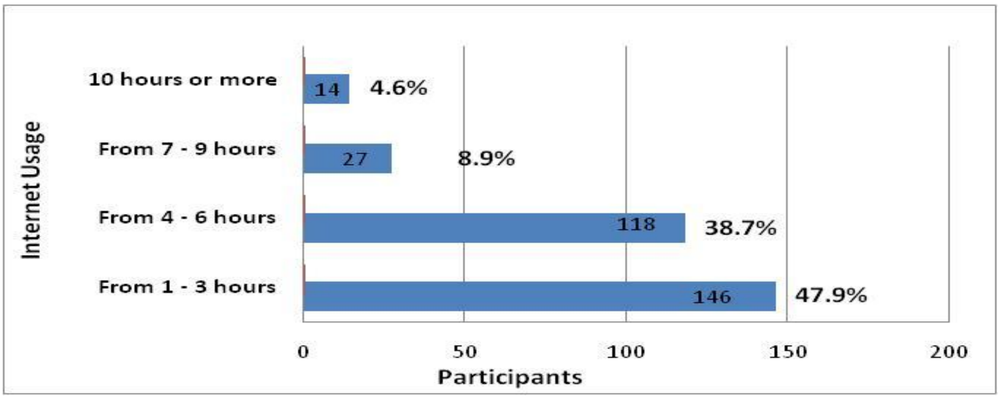

Figure 4-7: Distribution of Internet Usage

- **Internet Speed**

Internet speed was divided into four options; Table 96 in Appendix B shows the details of the internet speed. Figure 4-8 shows the internet speed distribution in this research.

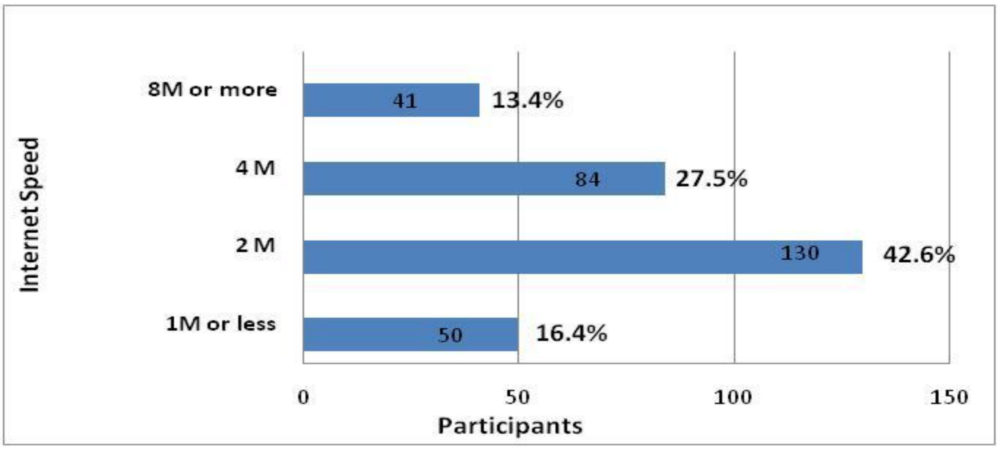

Figure 4-8: Distribution of Internet Speed

- **Computer Usage Per Hours Per Day**

Computer usage per hours per day was divided into four period intervals; Table 97 in Appendix B shows the details of the computer usage. Figure 4-9 shows the computer usage distribution in this research.

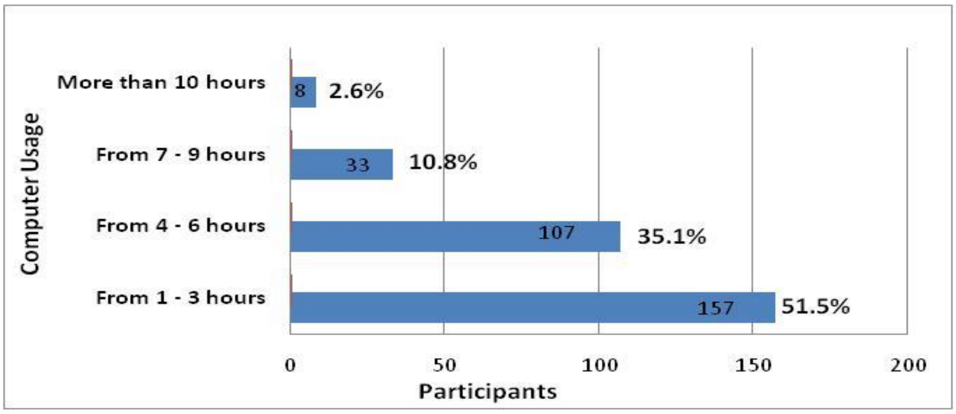

Figure 4-9: Distribution of Computer Usage

- **Voluntary Use of e-Learning**

Two alternatives defined the voluntary use of e-Learning; Table 98 in Appendix B shows the details of the voluntary use of e-Learning by participants. Figure 4-10 shows the voluntary use of e-Learning distribution in this research.

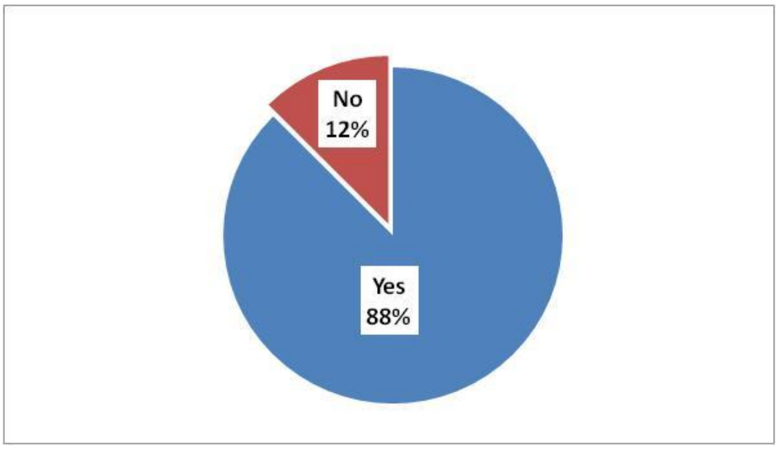

Figure 4-10: Distribution of e-Learning if Used Voluntarily?

- **e-Learning Lectures Prepared in Holidays**

Two alternatives defined the e-Learning lectures that delivered in holidays; Table 99 in Appendix B shows the details of the e-Learning lectures that delivered in holidays. Figure 4-11 shows the distribution of e-Learning lectures delivered in holidays as they appeared in this research.

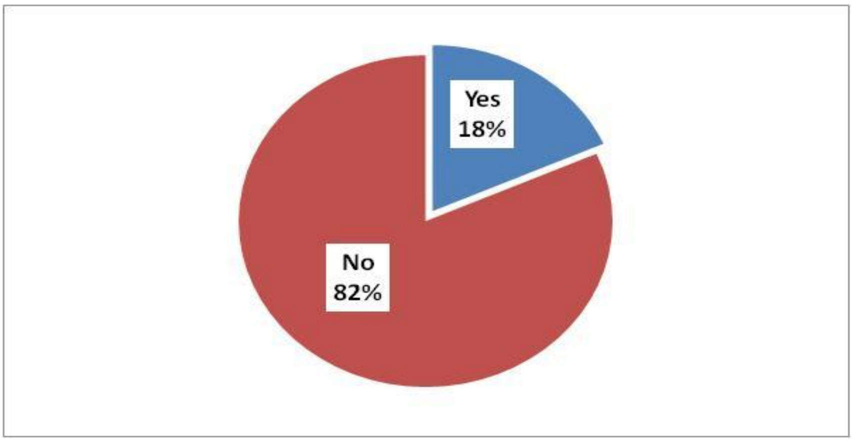

Figure 4-11: Distribution of e-Learning if Conducted in Holidays?

These results of technology usage data analysis explores the following facts:

- The highest percentage of participants using internet from (1-3 hours) per day who form 47.9% of respondents. Followed by from (4-6 hours) per day who form 38.7% of respondents.
- The highest percentage of participants using internet speed 2M form 42.6% of respondents.
- The highest percentage of participants using computer at work every day from (1-3 hours) per day who form 51.5% of respondents. Followed by from (4-6 hours) per day forms 35.1% of respondents.
- The highest percentage of participants considered the using of e-Learning voluntary at university who form 87.5% of respondents.

- The highest percentage of participants pointed that there are no e-Learning lectures delivered in holidays who form 81.6% of respondents.

4.3- Descriptive Statistics among Survey Respondents

This section outlines the statistical differences among participants in this research. To illustrate these differences, the researcher used Independent Samples Test (*t*-test for Equality of Means), and One-Way ANOVA Test; these two tests are used in order to see whether that the distribution set of values observed for each category of a variables differs from a specified distribution.

T-test method compares means of independent variable which could be divided into two distinct groups or levels (Saunders et al., 2009), whereas One-Way ANOVA compares means of independent variable which could be divided into three or more distinct groups or levels (Saunders et al., 2009). In this case, the dependent variables are quantitative.

- **Statistical Differences according to Gender**

Both males and females were surveyed in this study; so the researcher used *t*-test method to explore the statistical differences between males and females. The Table 4-1 and Table 4-2, shows that there is no statistical differences between males and females in recognizing all of the factors where (P-value > 0.05) for all.

Table 4-1: Descriptive Statistics among Participants according to Gender

Factor	Gender	N	Mean	Std. Deviation	Std. Error Mean
Usefulness	Male	253	4.06	0.688	0.043
	Female	52	4.01	0.726	0.101
Ease of Use	Male	253	3.75	0.789	0.050
	Female	52	3.63	0.771	0.107
Intention	Male	253	4.14	0.696	0.044
	Female	52	4.22	0.653	0.090
Subjective Norm	Male	253	3.18	0.672	0.042
	Female	52	3.05	0.852	0.118

Table 4-1: Descriptive Statistics among Participants according to their Gender cont..

Factor	Gender	N	Mean	Std. Deviation	Std. Error Mean
Image	Male	253	2.97	0.787	0.050
	Female	52	3.00	1.027	0.142
Job Relevance	Male	253	3.96	0.729	0.046
	Female	52	3.96	0.753	0.104
Output Quality	Male	253	3.88	0.754	0.047
	Female	52	3.82	0.741	0.103
Result Demonstrability	Male	253	3.97	0.703	0.044
	Female	52	3.90	0.748	0.104
Computer Self-efficacy	Male	253	4.09	0.627	0.039
	Female	52	4.08	0.535	0.074
External Control	Male	253	4.00	0.719	0.045
	Female	52	3.92	0.744	0.103
Computer Anxiety	Male	253	4.56	0.558	0.035
	Female	52	4.49	0.585	0.081
Computer Playfulness	Male	253	4.24	0.650	0.041
	Female	52	4.07	0.764	0.106
Enjoyment	Male	253	3.92	0.757	0.048
	Female	52	3.97	0.837	0.116
Objective Usability	Male	253	3.70	0.797	0.050
	Female	52	3.53	0.860	0.119
Management Support	Male	253	3.92	0.647	0.041
	Female	52	4.03	0.574	0.080
Design Characteristics	Male	253	3.66	0.723	0.045
	Female	52	3.66	0.698	0.097
Organizational support	Male	253	3.87	0.880	0.055
	Female	52	3.88	0.753	0.104
Training	Male	253	3.59	0.925	0.058
	Female	52	3.61	0.844	0.117
System Quality	Male	253	3.58	0.847	0.053
	Female	52	3.58	0.711	0.099
Interactive Learning Activities	Male	253	3.90	0.675	0.042
	Female	52	3.85	0.697	0.097
Effectiveness	Male	253	4.06	0.736	0.046
	Female	52	3.99	0.770	0.107
Multimedia instruction	Male	253	4.00	0.742	0.047
	Female	52	4.10	0.550	0.076
Satisfaction	Male	253	3.86	0.799	0.050
	Female	52	3.86	0.706	0.098

Table 4-2: Independent Samples Test for Gender Differences among Participants

Independent Samples Test							
Factor	t-test for Equality of Means						
	t	df	P-Value Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
						Lower	Upper
Usefulness	0.477	303	0.634	0.050	0.106	-0.158	0.259
Ease of use	0.995	303	0.321	0.119	0.120	-0.116	0.354
Intention	-0.769	303	0.442	-0.081	0.105	-0.287	0.126
Subjective Norm	1.189	303	0.235	0.128	0.107	-0.084	0.339
Image	-0.229	303	0.819	-0.029	0.127	-0.278	0.220
Job Relevance	-0.045	303	0.964	-0.005	0.112	-0.225	0.215
Output Quality	0.560	303	0.576	0.064	0.115	-0.161	0.290
Result Demonstrability	0.615	303	0.539	0.067	0.108	-0.146	0.279
Computer Self-efficacy	0.178	303	0.859	0.017	0.093	-0.167	0.200
External Control	0.733	303	0.464	0.081	0.110	-0.136	0.297
Computer Anxiety	0.907	303	0.365	0.078	0.086	-0.091	0.246
Computer Playfulness	1.712	303	0.088	0.175	0.102	-0.026	0.376
Enjoyment	-0.421	303	0.674	-0.049	0.117	-0.280	0.181
Objective Usability	1.372	303	0.171	0.169	0.123	-0.073	0.411
Management Support	-1.079	303	0.281	-0.104	0.097	-0.295	0.086
Design Characteristics	-0.031	303	0.975	-0.003	0.109	-0.219	0.212
Organizational support	-0.093	303	0.926	-0.012	0.131	-0.270	0.245
Training	-0.127	303	0.899	-0.018	0.139	-0.291	0.255
System Quality	-0.039	303	0.969	-0.005	0.126	-0.252	0.242
Interactive Learning Activities	0.545	303	0.586	0.056	0.103	-0.147	0.260
Effectiveness	0.615	303	0.539	0.069	0.113	-0.153	0.292
Multimedia instruction	-0.897	303	0.370	-0.097	0.109	-0.311	0.116
Satisfaction	0.066	303	0.948	0.008	0.119	-0.227	0.243

- **Statistical Differences according to Lecturer College**

This research includes participants from both Natural Science and Human Science colleges. The researcher used *t*-test method to explore the statistical differences between the two levels of the college variable as follows:

Usefulness: there are statistical differences between participants according to the nature of the college in which they lecturing (P=0.038< 0.05). Lecturers specialist in Human Science field consider e-Learning technology to be useful more than lecturers specialist in Natural Science field (the mean of Human Science is 4.14 and the Natural Science is 3.97).

Intention: there are statistical differences between participants according to the nature of the college in which they lecturing (P=0.023< 0.05). Lecturers specialist in Human Science field have higher intention to use e-Learning technology than lecturers specialist in Natural Science field (the mean of Human Science is 4.25 and the Natural Science is 4.07).

Image: there are statistical differences between participants according to the nature of the college in which they lecturing (P=0.013< 0.05). Lecturers specialist in Human Science field perceives that the use e-Learning technology will enhance their status more than lecturers specialist in Natural Science field (the mean of Human Science is 3.09 and the Natural Science is 2.86).

Job Relevance: there are statistical differences between participants according to the nature of the college in which they lecturing (P=0.018< 0.05). Lecturers specialist in Human Science field believes that the e-Learning system is more applicable to their job than lecturers specialist in Natural Science field belief (the mean of Human Science is 4.05 and the Natural Science is 3.86).

Output Quality: there are statistical differences between participants according to the nature of the college in which they lecturing (P=0.032< 0.05). Lecturers specialist in Human Science field believe that the e-Learning system performs their tasks well more than lecturers specialist in Natural Science field belief (the mean of Human Science is 3.96 and the Natural Science is 3.78).

Result Demonstrability: there are statistical differences between participants according to the nature of the college in which they lecturing (P=0.031< 0.05). Lecturers specialist in Human Science field believe that the results of using e-Learning system are observable, and tangible more than lecturers specialist in Natural Science field belief (the mean of Human Science is 4.05 and the Natural Science is 3.87).

Management Support: there are statistical differences between participants according to the nature of the college in which they lecturing (P=0.012< 0.05). Lecturers specialist in Human Science field believe that management has committed to successful implementation and use of e-Learning system more than lecturers specialist in Natural Science field belief (the mean of Human Science is 4.03 and the Natural Science is 3.85).

Training: there are statistical differences between participants according to the nature of the college in which they lecturing (P=0.005< 0.05). Lecturers specialist in Human Science field believe that training interventions they received, could mitigate their invoke passive reaction toward the e-Learning system more than lecturers specialist in Natural Science field belief (the mean of Human Science is 3.74 and the Natural Science is 3.45).

System Quality: there are statistical differences between participants according to the e-Learning System Quality in which they lecturing (P=0.008< 0.05). Lecturers specialist in Human Science field believe that an efficient e-Learning system depends on the quality of system interactions, functions, and contents, and thus increase their satisfaction in using e-Learning system more than lecturers specialist in Natural Science field belief (the mean of Human Science is 3.70 and the Natural Science is 3.45).

Effectiveness: there are statistical differences between participants according to the nature of the college in which they lecturing (P=0.003< 0.05). Lecturers specialist in Human Science field believe that e-Learning system increases their motivation, performance, and efficacy; and thus increases the efficiency of the educational process, more than lecturers specialist in Natural Science field belief (the mean of Human Science is 4.17 and the Natural Science is 3.92).

Satisfaction: there are statistical differences between participants according to the nature of the college in which they lecturing (P=0.043< 0.05). Lecturers specialist in Human Science field are satisfied with using e-Learning tools, applications, functions, and contents more than lecturers specialist in Natural Science field (the mean of Human Science is 3.95 and the Natural Science is 3.77).

Table 4-3 and Table 4-4 show full details about these statistical differences.

Table 4-3: Descriptive Statistics among Participants according to College

Factor	The Nature of your College	N	Mean	Std. Deviation	Std. Error Mean
Usefulness	Natural Science	150	3.97	0.679	0.055
	Human Science	155	4.14	0.701	0.056
Ease of use	Natural Science	150	3.73	0.741	0.061
	Human Science	155	3.74	0.829	0.067
Intention	Natural Science	150	4.07	0.725	0.059
	Human Science	155	4.25	0.643	0.052
Subjective Norm	Natural Science	150	3.20	0.697	0.057
	Human Science	155	3.11	0.715	0.057
Image	Natural Science	150	2.86	0.808	0.066
	Human Science	155	3.09	0.840	0.067
Job Relevance	Natural Science	150	3.86	0.729	0.060
	Human Science	155	4.05	0.724	0.058
Output Quality	Natural Science	150	3.78	0.765	0.062
	Human Science	155	3.96	0.729	0.059
Result Demonstrability	Natural Science	150	3.87	0.713	0.058
	Human Science	155	4.05	0.699	0.056

Table 4-3: Descriptive Statistics among Participants according to College Cont..

Factor	The Nature of your College	N	Mean	Std. Deviation	Std. Error Mean
Computer Self-efficacy	Natural Science	150	4.06	0.611	0.050
	Human Science	155	4.12	0.612	0.049
External Control	Natural Science	150	3.96	0.728	0.059
	Human Science	155	4.00	0.719	0.058
Computer Anxiety	Natural Science	150	4.59	0.510	0.042
	Human Science	155	4.51	0.607	0.049
Computer Playfulness	Natural Science	150	4.22	0.669	0.055
	Human Science	155	4.20	0.678	0.054
Enjoyment	Natural Science	150	3.89	0.766	0.063
	Human Science	155	3.97	0.774	0.062
Objective Usability	Natural Science	150	3.60	0.808	0.066
	Human Science	155	3.74	0.806	0.065
Management Support	Natural Science	150	3.85	0.649	0.053
	Human Science	155	4.03	0.611	0.049
Design Characteristics	Natural Science	150	3.64	0.694	0.057
	Human Science	155	3.68	0.742	0.060
Organizational support	Natural Science	150	3.85	0.844	0.069
	Human Science	155	3.89	0.873	0.070
Training	Natural Science	150	3.45	0.886	0.072
	Human Science	155	3.74	0.913	0.073
System Quality	Natural Science	150	3.45	0.805	0.066

	Human Science	**155**	**3.70**	**0.827**	**0.066**
Interactive Learning Activities	**Natural Science**	**150**	**3.83**	**0.660**	**0.054**
	Human Science	**155**	**3.96**	**0.691**	**0.055**
Effectiveness	**Natural Science**	**150**	**3.92**	**0.752**	**0.061**
	Human Science	**155**	**4.17**	**0.711**	**0.057**
Multimedia instruction	**Natural Science**	**150**	**3.94**	**0.732**	**0.060**
	Human Science	**155**	**4.09**	**0.687**	**0.055**
Satisfaction	**Natural Science**	**150**	**3.77**	**0.778**	**0.064**
	Human Science	**155**	**3.95**	**0.780**	**0.063**

Table 4-4: Independent Samples Test for College Differences among Participants

Independent Samples Test							
Factor	t-test for Equality of Means						
	t	df	P-Value Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
						Lower	Upper
Usefulness	-2.079	303	0.038	-0.164	0.079	-0.320	-0.009
Ease of use	-0.097	303	0.923	-0.009	0.090	-0.186	0.169
Intention	-2.278	303	0.023	-0.178	0.078	-0.333	-0.024
Subjective Norm	1.076	303	0.283	0.087	0.081	-0.072	0.246
Image	-2.510	303	0.013	-0.237	0.094	-0.423	-0.051
Job Relevance	-2.381	303	0.018	-0.198	0.083	-0.362	-0.034
Output Quality	-2.158	303	0.032	-0.185	0.086	-0.353	-0.016
Result Demonstrability	-2.167	303	0.031	-0.175	0.081	-0.334	-0.016
Computer Self-efficacy	-0.800	303	0.424	-0.056	0.070	-0.194	0.082
External Control	-0.455	303	0.649	-0.038	0.083	-0.201	0.125
Computer Anxiety	1.326	303	0.186	0.085	0.064	-0.041	0.212
Computer Playfulness	0.239	303	0.811	0.018	0.077	-0.133	0.170
Enjoyment	-0.893	303	0.373	-0.079	0.088	-0.252	0.095
Objective Usability	-1.536	303	0.126	-0.142	0.092	-0.324	0.040
Management Support	-2.518	303	0.012	-0.182	0.072	-0.324	-0.040
Design Characteristics	-0.414	303	0.679	-0.034	0.082	-0.196	0.128
Organizational support	-0.493	303	0.622	-0.049	0.098	-0.242	0.145
Training	-2.818	303	0.005	-0.290	0.103	-0.493	-0.088
System Quality	-2.650	303	0.008	-0.248	0.093	-0.432	-0.064
Interactive Learning Activities	-1.684	303	0.093	-0.130	0.077	-0.283	0.022
Effectiveness	-2.984	303	0.003	-0.250	0.084	-0.415	-0.085
Multimedia instruction	-1.930	303	0.055	-0.157	0.081	-0.317	0.003
Satisfaction	-2.035	303	0.043	-0.182	0.089	-0.357	-0.006

- **Statistical Differences according to e-Learning Usage in Holidays**

The researcher used *t*-test method to explore the statistical differences between the two levels of universities that conducted e-Learning in Holydays as following:

Image: there are statistical differences between participants according to conducting e-Learning in Holydays ($P=0.002< 0.05$). Lecturers who answered 'yes' that their universities conducting e-Learning in Holydays believes that e-Learning usage will enhance their status more than who answered 'No' (means respectively 3.29 and 2.91).

Job Relevance: there are statistical differences between participants according to conducting e-Learning in Holydays ($P=0.002< 0.05$). Lecturers who answered 'yes', that their universities conducting e-Learning in holydays, believe that e-Learning system is applicable to their job more than who answered 'No' (means respectively 4.23 and 3.90).

Result Demonstrability: there are statistical differences between participants according to conducting e-Learning in holydays ($P=0.001< 0.05$). Lecturers who answered 'yes' that their universities conducting e-Learning in Holydays believes that the results of using e-Learning system are apparent to them more than who answered 'No' (means respectively 4.24 and 3.90).

Computer Self-Efficacy: there are statistical differences between participants according to conducting e-Learning in Holydays ($P=0.013< 0.05$). Lecturers who answered 'yes' that their universities conducting e-Learning in Holydays believes that they have Self-Efficacy in using computer more than who answered 'No' (means respectively 4.27 and 4.05).

External Control: there are statistical differences between participants according to conducting e-Learning in holydays (P=0.005< 0.05). Lecturers who answered 'yes' that their universities conducting e-Learning in Holydays believes that they have resources and knowledge to use e-Learning system more than who answered 'No' (means respectively 4.23 and 3.93).

Management Support: there are statistical differences between participants according to conducting e-Learning in Holydays (P=0.002< 0.05). Lecturers who answered 'yes' that their universities conducting e-Learning in Holydays believes that managerial support is more effective for e-Learning system implementation more than who answered 'No' (means respectively 4.18 and 3.89).

Organizational Support: there are statistical differences between participants according to conducting e-Learning in Holydays (P=0.005< 0.05). Lecturers who answered 'yes' that their universities conducting e-Learning in Holydays believes that help of university is available when using e-Learning system more than who answered 'No' (means respectively 4.16 and 3.80).

Training: there are statistical differences between participants according to conducting e-Learning in Holydays (P=0.000< 0.05). Lecturers who answered 'yes' that their universities conducting e-Learning in Holydays believes that they received a complete training in using e-Learning system more than who answered 'No' (means respectively 3.98 and 3.51).

System Quality: there are statistical differences between participants according to conducting e-Learning in Holydays ($P=0.015< 0.05$). Lecturers who answered 'yes' that their universities conducting e-Learning in Holydays satisfied with the quality of e-Learning system more than who answered 'No' (means respectively 3.82 and 3.52).

Interactive Learning Activities: there are statistical differences between participants according to conducting e-Learning in Holydays ($P=0.001< 0.05$). Lecturers who answered 'yes' that their universities conducting e-Learning in Holydays satisfied with e-Learning interactivity more than who answered 'No' (means respectively 4.17 and 3.83).

e-Learning Effectiveness: there are statistical differences between participants according to conducting e-Learning in Holydays ($P=0.012< 0.05$). Lecturers who answered 'yes' that their universities conducting e-Learning in Holydays satisfied with the effectiveness of e-Learning system more than who answered 'No' (means respectively 4.27 and 3.99).

Multimedia Instructions: there are statistical differences between participants according to conducting e-Learning in Holydays ($P=0.012< 0.05$). Lecturers who answered 'yes' that their universities conducting e-Learning in Holydays satisfied with Multimedia Instructions more than who answered 'No' (means respectively 4.23 and 3.97).

Table 4-5 and Table 4-6 shows full details about these statistical differences.

Table 4-5: Descriptive Statistics among Participants according to e-Learning Usage in Holidays

Factor	Universities conducted e-Learning in Holidays	N	Mean	Std. Deviation	Std. Error Mean
Usefulness	Yes	56	4.11	.697	.093
	No	249	4.04	.694	.044
Ease of use	Yes	56	3.88	.788	.105
	No	249	3.70	.783	.050
Intention	Yes	56	4.24	.695	.093
	No	249	4.14	.687	.044
Subjective Norm	Yes	56	3.13	.824	.110
	No	249	3.16	.679	.043

Table 4-5: Cont..

Factor	Universities conducted e-Learning in Holidays	N	Mean	Std. Deviation	Std. Error Mean
Image	Yes	56	3.29	.900	.120
	No	249	2.91	.801	.051
Job Relevance	Yes	56	4.23	.610	.082
	No	249	3.90	.744	.047
Output Quality	Yes	56	4.04	.609	.081
	No	249	3.83	.776	.049
Result Demonstrability	Yes	56	4.24	.625	.084
	No	249	3.90	.714	.045
Computer Self-efficacy	Yes	56	4.27	.667	.089
	No	249	4.05	.592	.037
External Control	Yes	56	4.23	.760	.102
	No	249	3.93	.704	.045
Computer Anxiety	Yes	56	1.47	.593	.079
	No	249	1.44	.556	.035
Computer Playfulness	Yes	56	4.24	.641	.086
	No	249	4.21	.681	.043
Enjoyment	Yes	56	4.05	.842	.113
	No	249	3.91	.752	.048
Objective Usability	Yes	56	3.71	.913	.122
	No	249	3.66	.786	.050
Management Support	Yes	56	4.18	.537	.072
	No	249	3.89	.645	.041
Design Characteristics	Yes	56	3.83	.782	.105
	No	249	3.62	.699	.044

Organizational support	**Yes**	**56**	**4.16**	**.683**	**.091**
	No	**249**	**3.80**	**.881**	**.056**
Training	**Yes**	**56**	**3.98**	**.846**	**.113**
	No	**249**	**3.51**	**.903**	**.057**
System Quality	**Yes**	**56**	**3.82**	**.781**	**.104**
	No	**249**	**3.52**	**.825**	**.052**
Interactive Learning Activities	**Yes**	**56**	**4.17**	**.728**	**.097**
	No	**249**	**3.83**	**.651**	**.041**
Effectiveness	**Yes**	**56**	**4.27**	**.790**	**.106**
	No	**249**	**3.99**	**.722**	**.046**
Multimedia instruction	**Yes**	**56**	**4.23**	**.619**	**.083**
	No	**249**	**3.97**	**.725**	**.046**
Satisfaction	**Yes**	**56**	**4.04**	**.816**	**.109**
	No	**249**	**3.82**	**.772**	**.049**

Table 4-6: Independent Samples Test for e-Learning Usage in Holydays Differences among Participants

Independent Samples Test							
Factor	t-test for Equality of Means						
	t	df	P-Value Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
						Lower	Upper
Usefulness	.626	303	.532	.064	.103	-.138	.266
Ease of use	1.496	303	.136	.174	.116	-.055	.402
Intention	.970	303	.333	.099	.102	-.102	.299
Subjective Norm	-.236	303	.813	-.025	.105	-.231	.181
Image	3.131	303	.002	.379	.121	.141	.618
Job Relevance	3.154	303	.002	.337	.107	.127	.547
Output Quality	1.828	303	.069	.202	.111	-.015	.420
Result	3.345	303	.001	.345	.103	.142	.549
Computer Self-	2.502	303	.013	.224	.090	.048	.401
External Control	2.812	303	.005	.297	.106	.089	.505
Computer Anxiety	.342	303	.733	.028	.083	-.135	.192
Computer	.354	303	.724	.035	.100	-.161	.231
Enjoyment	1.231	303	.219	.140	.114	-.084	.364
Objective Usability	.373	303	.709	.045	.120	-.191	.281
Management	3.101	303	.002	.287	.093	.105	.470
Design	1.967	303	.050	.208	.106	.000	.416
Organizational	2.841	303	.005	.356	.125	.110	.603
Training	3.583	303	.000	.473	.132	.213	.733
System Quality	2.453	303	.015	.297	.121	.059	.535
Interactive Learning	3.481	303	.001	.343	.098	.149	.536
Effectiveness	2.515	303	.012	.273	.109	.059	.487
Multimedia	2.541	303	.012	.266	.105	.060	.471
Satisfaction	1.889	303	.060	.218	.115	-.009	.445

- **Statistical Differences according to Age**

In this study participant's age was collected as interval, ages classified into more than two alternatives, therefore the researcher used One-Way ANOVA test to check the correlation between age intervals and other dependent variables (Appendix B: Table 82). Then the researcher used LSD test to detect where exactly the mean differences lie. There are statistical differences between ages as the following:

Usefulness: ANOVA test shows statistical differences between participants according to their ages ($P=0.003<0.05$). Participants aged between 40-49 years (mean equals 4.23) are more perceived about the usefulness of e-Learning technology than who aged from 24-29 years (mean equals 3.82) and from 50 and more (mean equals 3.90), whereas participants aged from 24-29 years have the lowest perceived about the usefulness of e-Learning technology.

External Control: ANOVA test shows statistical differences between participants according to their ages ($P=0.005<0.05$). Participants aged between 30-39 years (mean equals 4.13) and between 40-49 years (mean equals 4.05) are more perceived about the external control of e-Learning technology than who aged from 50 and more (mean equals 3.77), whereas aged from 50 and more have the lowest perceived about the external control of e-Learning technology.

Objective Usability: ANOVA test shows statistical differences between participants according to their ages ($P=0.015<0.05$). Participants aged between 40-49 years (mean equals 3.83) are more perceived about the objective usability from using e-Learning technology than who aged from 24-29 years (mean equals 3.43) and from 50 and more (mean equals 3.49), whereas participants aged from 24-29 years have the lowest perceived about the objective usability from using e-Learning technology.

Management Support: ANOVA test shows statistical differences between participants according to their ages ($P=0.028<0.05$). Participants aged between 40-49 years (mean equals 4.05) and between 30-39 years (mean equals 3.93) are more perceived the extent of management support for implementing and using e-Learning system than who aged from 24-29 years (mean equals 3.60), whereas participants aged from 24-29 years have the lowest perceived about the management support.

Design Characteristics: ANOVA test shows statistical differences between participants according to their ages ($P=0.049<0.05$). Participants aged between 40-49 years (mean equals 3.77) and between 30-39 years (mean equals 3.70) are more perceived about the design characteristics of e-Learning system than who aged from 50 and more (mean equals 3.49), whereas aged from 50 and more have the lowest perceived about the design characteristics.

Satisfaction: ANOVA test shows statistical differences between participants according to their ages ($P=0.013<0.05$). Participants aged between 40-49 years (mean equals 4.03) are more perceived satisfaction when using e-Learning system than who aged from 50 and more (mean equals 3.66), whereas aged from 50 and more have the lowest perceived satisfaction.

- **Statistical Differences according to University**

In this study participants were surveyed from different universities, universities classified according to their names, therefore the researcher used One-Way ANOVA test to check the correlation between universities and other dependent variables (Appendex B: Table 82). Then the researcher used LSD test to detect where exactly the mean differences lie. There are statistical differences between universities as the following:

Perceived Usefulness: statistical differences are found ($P=0.040<0.05$). Participants who lecturing in Islamic university have the highest Perceived Usefulness in the use of e-Learning technology (mean 4.39), where as participants who lecturing in Al-Quds university have the lowest Perceived Usefulness in the use of e-Learning technology (mean 3.78).

Also, LSD test shows a significant differences between participants lecturing in Islamic university (mean 4.39) and those who lecturing in An-Najah, Al-Aqsa, and Al-Quds universities (means respectively 3.98, 3.88, and 3.78); and between who lecturing in Hebron and Arab-American universities (means respectively 4.30 and 4.37), and those who lecturing in Al-quds university (mean 3.78), which illustrate that Islamic, Arab-American, and Hebron universities have better understand for the usefulness of e-Learning technology.

Subjective Norm: statistical differences are found (P0.000<0.05). Participants lecturing in Polytechnic university have the highest influence by others toward using e-Learning technology (mean 3.86), where as participants lecturing in Al-Aqsa university have the lowest influence by others toward using e-Learning technology (mean 2.86).

Also, LSD test shows a significant differences between participants lecturing in Polytechnic university (mean 3.86) and those who lecturing in Al-Azhar, Arab-American, An-Najah, Al-quds, Open-University, Birzeit, and Al-Aqsa universities (means respectively 3.14, 3.10, 3.07, 3.07, 3.01, 2.96, and 2.86); and differences between who lecturing in Bethlehem and Islamic universities (means respectively 3.68, and 3.46) and those who lecturing in An-Najah, Al-quds, Open-University, Birzeit, and Al-Aqsa universities (means respectively 3.07, 3.07, 3.01, 2.96, and 2.86); and also, differences between who lecturing in Kadoori university (mean 3.46) and those who lecturing in Open-University, and Birzeit universities (means respectively 3.01, and 2.96); which illustrate that Polytechnic, Bethlehem, Islamic, and Kadoori universities participants are higher influenced by others toward using e-Learning.

Job Relevance: statistical differences are found (P=0.005<0.05). Participants lecturing in Hebron university have the highest belief that e-Learning system is applicable to their job (mean 4.40), where as participants lecturing in Polytechnic university have the lowest believes that e-Learning system is applicable to their job (mean 3.45).

Also, LSD test shows a significant differences between participants lecturing in Polytechnic and Al-Quds universities (means 3.45, and 3.53) and those who lecturing in Hebron, Bethlehem, Islamic, Open-University, Al-Aqsa, Birzeit, and An-Najah universities (means respectively 4.40, 4.20, 4.17, 4.08, 4.02, 4.00, and 3.97); in addition to the differences between Al-Quds participants and those who in Kadoori and Al-Azher universities (means 4.00, and 3.92); which shows that Polytechnic and Al-Quds universities believes in lower degree compared to others that e-Learning system is applicable to their job.

Output Quality: statistical differences are found (P=0.001<0.05). Participants lecturing in Hebron university have the highest perception about the output quality of e-Learning system (mean 4.30), where as participants lecturing in Al-Quds university have the lowest perception about the output quality of e-Learning system (mean 3.53).

Also, LSD test shows a significant differences between participants lecturing in Hebron and Islamic universities (means 4.30, and 4.24) and those who lecturing in Birzeit, An-Najah, Al-Aqsa, and Al-Quds universities (means respectively 3.73, 3.71, 3.70, and 3.53); and differences between who lecturing in Arab-American university (mean 4.25) and those who in An-Najah, Al-Aqsa, and Al-Quds universities (means respectively 3.71, 3.70, and 3.53); and also, differences between who lecturing in Open-University (mean 4.07) and those who in An-Najah and Al-Quds universities (means respectively 3.71, and 3.53); in addition to differences between Al-Quds university and Bethlehem, Al-Azhar, and Kadoori universities; which illustrate that Hebron, Arab-American, Islamic, Open-University, and Bethlehem universities have the higher perception about the output quality of e-Learning system, but Al-Quds university have the lowest.

Computer Self-Efficacy: statistical differences are found ($P=0.027<0.05$). Participants lecturing in Hebron and Bethlehem universities have the highest belief that they have the ability to perform their tasks by using a computer (means 4.33, and 4.33), where as participants lecturing in Al-Quds university have the lowest belief that they have the ability to perform their tasks by using a computer (mean 3.83).

Furthermore, LSD test shows a significant differences between participants lecturing in Hebron and Bethlehem universities and those who lecturing in Al-Quds university (mean 3.83); and differences between who lecturing in Open University (mean 4.32) and those who in An-Najah, Al-Aqsa, Birzeit, and Al-Quds universities (means respectively 4.06, 3.99, 3.90, and 3.83); and also, differences between who lecturing in Islamic (mean 4.30) and those who in Birzeit and Al-Quds universities (means respectively 3.90, and 3.83); which illustrate that Hebron, Bethlehem, Open-University, and Islamic universities have the higher belief toward computer self-efficacy.

Objective Usability: statistical differences are found (P=0.025<0.05). Participants lecturing in Islamic university have the highest belief that they not require more effort to get the task done as scheduled when using e-Learning system (mean 4.02), where as participants lecturing in An-Najah university have the lowest belief that they not require more effort to get the task done when using e-Learning system (mean 3.39).

Furthermore, LSD test shows a significant differences between participants lecturing in Islamic university and those who lecturing in Al-Quds and An-Najah universities (means 3.53, and 3.39); and also, differences between who lecturing in An-Najah (mean 3.39) and those who lecturing in Al-Azhar, Bethlehem, Arab-American, and Polytechnic universities (means respectively 3.77, 3.95, 3.95, and 4.00); which illustrate that Islamic university have the higher and An-Najah have the lower belief toward objective usability of e-Learning system.

Managements Support: statistical differences are found (P=0.000<0.05). Participants lecturing in Islamic university have the highest belief that management is committed to successfully set up and use e-Learning system (mean 4.31), where as participants lecturing in Al-Azhar university have the lowest belief that management is committed to successfully set up and use e-Learning system (mean 3.36).

Furthermore, LSD test shows a significant differences between participants lecturing in Islamic university and those who lecturing in An-Najah, Kadoori, Arab-American, Al-Quds and Al-Azhar universities (means respectively 3.89, 3.83, 3.80, 3.67, and 3.36); and also, differences between who lecturing in Al-Azhar and those who lecturing in Hebron, Al-Aqsa, Open-University, Bethlehem, Birzeit, Polytechnic, An-Najah, Kadoori, Arab-American, and Al-Quds universities (means respectively 4.22, 4.16, 4.13, 4.08, 4.06, 3.98, 3.89, 3.83, 3.80 and 3.67); in addition to the differences between who lecturing in Al-Quds (mean 3.67) and those who lecturing in Hebron, Al-Aqsa, Open-University, and Birzeit universities; which illustrate that Islamic university have the higher belief, and Al-Quds and Al-Azhar have the lower belief toward management support to the e-Learning system's implementation and usage.

Organizational Support: statistical differences are found ($P=0.000<0.05$). Participants lecturing in Islamic university have the highest belief that university activates or functions assist or support users in the e-Learning system usage in various forms (mean 4.49), where as participants lecturing in Al-Azhar university have the lowest belief that university activates or functions assist or support users in the e-Learning system usage in various forms (mean 2.78).

Furthermore, LSD test shows a significant differences between participants lecturing in Islamic university from one side and Al-Azhar university from other sides and those who lecturing in Al-Aqsa, An-Najah, Bethlehem, Kadoori, Birzeit, Arab-American, Al-Quds universities (means respectively 3.96, 3.94, 3.88, 3.79, 3.71, 3.70, and 3.56); and also, differences between who lecturing in Al-Azhar and those who lecturing in

Islamic, Hebron, and Polytechnic (4.49, 4.35, 4.05); in addition to the differences between who lecturing in Al-Quds and those who in Hebron, Al-Aqsa, and An-Najah; besides that, the differences between who lecturing in Open-University (mean 4.26) and those who lecturing in Birzeit, Arab-American, Al-Quds, and Al-Azhar universities; which illustrate that Islamic, Open-University, and Hebron universities have the higher belief, and Al-Quds and Al-Azhar have the lower belief toward organization support to the users of e-Learning technology.

Training: statistical differences are found (P=0.000<0.05). Participants lecturing in Hebron university have the highest belief that training interventions they received, could mitigate their invoke passive reaction toward e-Learning system (mean 4.20), where as participants lecturing in Al-Azhar university have the lowest belief that training interventions they received, could mitigate their invoke passive reaction toward e-Learning system (mean 2.83).

Furthermore, LSD test shows a significant differences between participants lecturing in Hebron, Open-University and Islamic universities (means respectively 4.20, 4.18, and 4.03) and those who lecturing in An-Najah, Polytechnic, Al-Quds, Birzeit, and Al-Azhar universities (means respectively 3.56, 3.43, 3.31, 3.28, and 2.83); and also, differences between who lecturing in Al-Azhar and those who lecturing in Al-Aqsa, Bethlehem, An-Najah, Kadoori, Arab-American, and Al-Quds universities (means respectively 3.90, 3.65, 3.56, 3.50, 3.48, and 3.31); in addition to the differences between who in Al-Aqsa and who in Al-Quds and Birzeit, and between who in Open University and who in Kadoori and Arab-American; which illustrate that Hebron, Open-University, Islamic, and Al-Aqsa universities have the higher belief, and Al-Azhar, Birzeit, and Al-Quds have the lower belief toward training in using e-Learning technology.

System Quality: statistical differences are found (P=0.000<0.05). Participants lecturing in Islamic university have the highest satisfaction toward the quality of e-Learning system which related to its interactions, functions, and contents (mean 4.17), where as participants lecturing in Al-Azhar university have the lowest satisfaction toward the quality of e-Learning system (mean 2.90).

Furthermore, LSD test shows a significant differences between participants lecturing in Islamic, Hebron, and Open-University universities (means respectively 4.17, 4.13, and 3.93) and those who lecturing in Al-Aqsa, Al-Quds, Birzeit, Kadoori, and Al-Azhar universities (means respectively 3.43, 3.36, 3.31, 3.26, and 2.90); and also, differences between who lecturing in Al-Azhar and those who lecturing in Arab-American, Bethlehem, An-Najah, Polytechnic, Al-Aqsa, and Al-Quds universities; in addition to the differences between who in Hebron and who in An-Najah, and between who in Islamic and who in An-Najah and Polytechnic; which illustrate that Islamic, Open-University, and Hebron universities have the higher satisfaction, and Al-Azhar have the lower satisfaction toward the quality of e-Learning system.

Effectiveness: statistical differences are found (P=0.019<0.05). Participants lecturing in Hebron university have the highest belief that e-Learning system increase their motivation, performance, and efficacy; and thus increases the efficiency of the educational process (mean 4.70); where as participants lecturing in Al-Quds university have the lowest satisfaction toward the effectiveness of e-Learning system (mean 3.78).

Furthermore, LSD test shows a significant differences between participants lecturing in Hebron university (mean 4.70) and those who lecturing in Al-Azhar, Polytechnic, An-Najah, Birzeit, Al-Aqsa, Arab-American, and Al-Quds universities (means respectively 4.10, 4.00, 3.96, 3.95, 3.94, 3.80, and 3.78); and also, differences between those who lecturing in Open-University and Islamic universities (means 4.29, and 4.28) and those who lecturing in An-Najah and Al-Quds universities; which illustrate that Hebron, Open-University, and Islamic universities have the higher satisfaction, and Al-Quds have the lower satisfaction toward the effectiveness of e-Learning system.

Satisfaction: statistical differences are found (P=0.000<0.05). Participants lecturing in Hebron university have the highest satisfaction with using e-Learning tools, applications, functions, and contents (mean 4.38); where as participants lecturing in Al-Quds university have the lowest satisfaction toward using e-Learning system (mean 3.46).

Furthermore, LSD test shows a significant differences between participants lecturing in Hebron, Islamic, and Open University (means respectively 4.38, 4.31, and 4.21) and those who lecturing in Al-Azhar, Al-Aqsa, Birzeit, and Al-Quds universities (means respectively 3.67, 3.64, 3.54, and 3.46); and also, differences between those who lecturing in Islamic university and those who lecturing in An-Najah and Bethlehem (means 3.93, and 3.73); in addition to the differences between those who in An-Najah university and who in Birzeit and Al-Quds universities, and between those who in Kadoori and who in Al-Quds; which illustrate that Hebron, Islamic, Open-University, Kadoori, and An-Najah universities have the higher satisfaction, and Al-Quds have the lower satisfaction toward using e-Learning system.

Table 4-7 summarized the results of statistical differences according to universities:

Table 4-7: Summarized the Results of Statistical Differences According to Universities

Factor	Open U.	Islamic	Al-Azhar	Hebron	Bethlehem	Birzeit	Polytechnic	American	An-Najah	Al-Quds	Kadoori	Al-Aqsa	Highest Mean	Lowest Mean
Usefulness		H+			H			H	L	L-		L	**4.39**	**3.78**
Subjective Norm	L	H	L	H	H	L	H+		L	L	H	L-	**3.86**	**2.86**
Job Relevance	H	H	H	H+	H	H	L-		H	L	H	L	**4.40**	**3.45**
Output Quality	H	H	H	H+	H	L		H	L	L	H	L-	**4.30**	**3.53**
Computer Self-Efficacy	H	H		H+	H+	L			L	L-		L	**4.33**	**3.83**
Objective Usability		H+	H		H		H	H	L-	L	H		**4.02**	**3.39**
Manage. Support	H	H+	L-	H	H	H	H	L	H	L	L	H	**4.31**	**3.36**
Org. Support	H	H+	L-	H	H	L	H	L	H	L	L	H	**4.49**	**2.78**
Training	H	H	L-	H+	H	L	L	L	L	L	H	L	**4.20**	**2.83**
System Quality	H	H+	L-	H	H	L	L	H	H	L	L	L	**4.17**	**2.90**
Effectiveness	H	H	L	H+		L	L	L	L	L-		L	**4.70**	**3.78**
Satisfaction	H	H	L	H+	L	L			H	L-	H	L	**4.38**	**3.46**

Where (H) : Higher than other. (L) : Lower than other.
(+) : The highest. (-) : The lowest

- **Statistical Differences according to Experience**

One-Way ANOVA test is also used to outline the statistical differences between participants according to their experiences which collected as intervals (Appendix B: Table 82). Then the researcher used

LSD test to detect where exactly the mean differences lie. There are statistical differences as the following:

Job Relevance: ANOVA test shows statistical differences between participants according to their experiences ($P=0.026<0.05$). Participants who experience 16 years and more (mean equals 3.75) have the lowest belief about the Job Relevance of e-Learning technology than who experiences from 11-15 years, 6-10 years, and 5 years or less (means respectively 4.05, 3.99, and 4.06), whereas participants who experiences from 5 years or less have the highest belief about the Job Relevance of e-Learning technology.

Output Quality: ANOVA test shows statistical differences between participants according to their experiences ($P=0.048<0.05$). Participants who experience 16 years and more (mean equals 3.68) have the lowest belief about the output quality of e-Learning technology than who experiences from 11-15 years, and 5 years or less (means respectively 3.98, and 3.96), whereas participants who experiences from 11-15 years have the highest belief about the output quality of e-Learning technology.

Computer Self-Efficacy: ANOVA test shows statistical differences between participants according to their experiences ($P=0.032<0.05$). Participants who experience 16 years and more (mean equals 3.93) have the lowest belief about the computer self-efficacy than who experiences from 11-15 years, and 6-10 years (means respectively 4.23, and 4.13), whereas participants who experiences from 11-15 years have the highest belief about the computer self-efficacy.

Effectiveness: ANOVA test shows statistical differences between participants according to their experiences (P=0.007<0.05). Participants who experience 16 years and more (mean equals 3.85) have the lowest belief about the effectiveness of e-Learning technology than who experiences from 11-15 years and 5 years or less (means respectively 4.27, and 4.11), and also between who experience from 6-10 years (mean 4.02) and who from 11-15 years, whereas participants who experiences from 11-15 years have the highest belief about the effectiveness of e-Learning technology.

Satisfaction: ANOVA test shows statistical differences between participants according to their experiences (P=0.005<0.05). Participants who experience 16 years and more (mean equals 3.65) have the lowest belief about their satisfaction from using e-Learning technology than who experiences from 11-15 years and 5 years or less (means respectively 4.00, and 4.06), and also between who experience from 6-10 years (mean 3.80) and who 5 or less years, whereas participants who experiences from 5 or less years have the highest belief about their satisfaction from using e-Learning technology.

- **Statistical Differences according to Academic Rank**

One-Way ANOVA test is also used to outline the statistical differences between participants according to academic rank which collected as five intervals. Then the researcher used LSD test to detect where exactly the mean differences lie. The tables (Appendix B: Table 78, and Table 82) shows that there is no statistical differences according to academic rank, where ($P > 0.05$) for all factors.

- **Statistical Differences according to Internet Usage**

One-Way ANOVA test is also used to outline the statistical differences between participants according to internet usage per hours per day which has been split into intervals after collection (Appendix B: Table 82). Then the researcher used LSD test to detect where exactly the mean differences lie. There are statistical differences as the following:

Ease of Use: ANOVA test shows statistical differences between participants according to their use of the internet ($P=0.004<0.05$). Participants who use internet from 4-6 hours/day (mean 3.90) have the highest belief about perceptions ease of use toward e-Learning technology, whereas who use the internet from 1-3 hours/day, or from 10 hours/day or more (means respectively 3.62, and 3.29) have the lowest belief about perceptions ease of use.

Intention: ANOVA test shows statistical differences between participants according to their use of the internet ($P=0.000<0.05$). Participants who use internet from 1-3 hours/day (mean 3.99) have lower belief about their intentions to use e-Learning technology than who use internet from 4-6 and from 7-9 hours/day (means 4.32, and 4.37), whereas who use the internet from 7-9 hours/day have the highest and who use it from 1-3 hours/day have the lowest belief about their intentions to use e-Learning technology.

Computer Self-Efficacy: ANOVA test shows statistical differences between participants according to their use of internet (P=0.000<0.05). Participants who use internet from 1-3 hours/day (mean 3.93) have lower belief about their computer self-efficacy than who use internet from 4-6 and from 7-9 hours/day (means 4.22, and 4.42), and also there is differences between who use internet from 7-9 and who use it from 10 hours/day or more (mean 4.02), whereas who use the internet from 7-9 hours/day have the highest and who use it from 1-3 hours/day have the lowest belief about their computer self-efficacy.

Perception of External Control: ANOVA test shows statistical differences between participants according to their use of the internet (P=0.001<0.05). Participants who use internet from 1-3 hours/day (mean 3.81) have lower belief that technical and organizational resources are exist to use e-Learning system than who use internet from 4-6 and from 7-9 hours/day (means 4.16, and 4.12), whereas who use the internet from 4-6 hours/day have the highest and who use it from 1-3 hours/day have the lowest belief about perception of external control.

Computer Anxiety: ANOVA test shows statistical differences between participants according to their use of internet (P=0.007<0.05). Participants who use internet from 1-3 hours/day (mean 1.56) are higher anxiety from using a computer than who use internet from 4-6 hours/day (mean 1.33), whereas who use the internet from 4-6 hours/day are the lowest and who use it from 1-3 hours/day are the highest computer anxiety.

Computer Playfulness: ANOVA test shows statistical differences between participants according to their use of the internet (P=0.003<0.05). Participants who use internet from 1-3 hours/day (mean 4.08) have lower belief about self motivation associated with using a computer or new technology than who use internet from 4-6 and from 7-9 hours/day (means 4.34, and 4.45), whereas who use the internet from 7-9 hours/day have the highest and who use it from 1-3 hours/day have the lowest belief about computer playfulness.

Perceived Enjoyment: ANOVA test shows statistical differences between participants according to their use of the internet (P=0.020<0.05). Participants who use internet from 1-3 hours/day (mean 3.80) have lower belief about perceived enjoyment when using e-Learning technology than who use internet from 4-6 and from 7-9 hours/day (means 4.02, and 4.23), whereas who use the internet from 7-9 hours/day have the highest and who use it from 1-3 hours/day have the lowest belief about perceived enjoyment.

Management Support: ANOVA test shows statistical differences between participants according to their use of the internet (P=0.045<0.05). Participants who use internet from 1-3 hours/day (mean 3.85) have lower belief that management has committed to successful implementation and use of e-Learning system than who use internet from 4-6 hours/day (mean 4.04), whereas who use the internet from 7-9 hours/day have the highest (mean 4.10) and who use it from 10 hours/day or more have the lowest belief (mean 3.81) to what extent management support represent a success intervention pre-implementation of e-Learning system.

Effectiveness: ANOVA test shows statistical differences between participants according to their use of the internet (P=0.018<0.05). Participants who use internet from 1-3 hours/day (mean 3.91) have lower belief about the Effectiveness of e-Learning system than who use internet from 4-6 and from 7-9 hours/day (means 4.15, and 4.30), whereas who use the internet from 7-9 hours/day have the highest and who use it from 1-3 hours/day have the lowest belief about the effectiveness of e-Learning system.

Multimedia Instruction: ANOVA test shows statistical differences between participants according to their use of the internet (P=0.000<0.05). Participants who use internet from 1-3 hours/day (mean 3.84) have lower belief about their desire to use multimedia instruction than who use internet from 4-6 and from 7-9 hours/day (means 4.18, and 4.28), whereas who use the internet from 7-9 hours/day have the highest and who use it from 1-3 hours/day have the lowest belief about their desire to use multimedia instruction.

- **Statistical Differences according to Internet Speed**

One-Way ANOVA test is also used to outline the statistical differences between participants according to the internet speed which collected as interval (Appendix B: Table 82). Then the researcher used LSD test to detect where exactly the mean differences lie. There are statistical differences as the following:

Computer Playfulness: ANOVA test shows statistical differences between participants according to the internet speed ($P=0.018<0.05$). Participants who use internet speed 8M or more (mean 4.48) have higher belief about the playfulness when using a computer or new technology than who use internet speed 2M (mean 4.10), whereas who use the internet speed 8M have the highest and who use internet speed 2M have the lowest belief about computer playfulness.

- **Statistical Differences according to Computer Usage**

One-Way ANOVA test is also used to outline the statistical differences between participants according to the computer usage per hours per day which split into intervals after collection (Appendix B: Table 82). Then the researcher used LSD test to detect where exactly the mean differences lie. There are statistical differences as the following:

Job Relevance: ANOVA test shows statistical differences between participants according to the computer usage per hours per day (P=0.022<0.05). Participants who use computer from 1-3 hours (mean 3.84) have lower belief that e-Learning system is more applicable to their job than who use computer from 4-6 or from 7-9 hours (means 4.05, and 4.21), whereas who use computer from 7-9 hours have the highest and who use computer from 1-3 hours have the lowest belief about job relevance.

Computer Self-Efficacy: ANOVA test shows statistical differences between participants according to the computer usage per hours per day (P=0.001<0.05). Participants who use computer from 1-3 hours (mean 3.96) have higher belief that they have the ability to perform their tasks by using a computer than who use computer from 4-6 or from 7-9 hours (means 4.22, and 4.23), whereas who use computer 10 hours or more have the highest (means 4.38) and who use computer from 1-3 hours have the lowest belief about computer self-efficacy.

Perception of External Control: ANOVA test shows statistical differences between participants according to the computer usage per hours per day (P=0.007<0.05). Participants who use computer from 1-3 hours (mean 3.87) have lower belief that technical and organizational resources are exist to use e-Learning system than who use computer from 4-6 and from 10 hours or more (means 4.11, and 4.54), whereas who use computer 10 hours or more have the highest and who use computer from 1-3 hours have the lowest belief about external control.

Perceived Enjoyment: ANOVA test shows statistical differences between participants according to the computer usage per hours per day ($P=0.048<0.05$). Participants who use computer from 1-3 hours (mean 3.83) have lower belief about Perceived Enjoyment when using e-Learning technology than who use computer from 7-9 hours (mean 4.17), whereas who use computer 10 hours or more (means 4.25) have the highest and who use computer from 1-3 hours have the lowest belief about enjoyment.

Organizational Support: ANOVA test shows statistical differences between participants according to the computer usage per hours per day ($P=0.010<0.05$). Participants who use computer from 1-3 hours (mean 3.71) have higher belief that university activates or functions assist and support users in the e-Learning system usage in various forms than who use computer from 4-6 and from 7-9 hours (means 4.04, and 4.04), whereas who use computer from 4-6 and from 7-9 hours have the highest and who use computer from 1-3 hours have the lowest belief about organizational support.

4.4- Hypotheses Testing

In this study the researcher used Linear Regression to test the research hypotheses. Linear regression analysis is fit with situations where one dependent variable affected by one independent hypothesized variable (Sekaran and Bougie, 2010).

The following table (Table 4-8) shows the hypotheses and their results:

Table 4-8: Results of Hypothesis Testing

Hypotheses	R^2	(ρ) Pearson Correlation	Type of Correlation	P-Value
H1: Perceived Usefulness is significantly and positively related to Behavioral Intention to use e-Learning.	0.452	0.672	Positive	0.000
H2: Perceived Ease of Use is significantly and positively related to Behavioral Intention to use e-Learning.	0.320	0.565	Positive	0.000
H3: Perceived Ease of Use is significantly and positively related Perceived Usefulness of e-Learning.	0.370	0.609	Positive	0.000
H5: Subjective Norms has a significant positive direct effect on Behavioral Intention to use e-learning.	0.104	0.322	Positive	0.000
H6: Subjective Norms has a significant positive direct effect on Usefulness of e-learning.	0.133	0.364	Positive	0.000
H7: Subjective Norms has a significant positive direct effect on Image for using e-Learning.	0.186	0.432	Positive	0.000
H8: Users' Image for using e-Learning has positive influence on Perceived Usefulness of e-Learning.	0.121	0.348	Positive	0.000
H9: Job Relevance of e-Learning has positive influence on users’ Perceived Usefulness of e-Learning.	0.341	0.584	Positive	0.000
H10: Output Quality of e-Learning has positive influence on users’ Perceived Usefulness of e-Learning.	0.423	0.651	Positive	0.000
H11: Result Demonstrability of e-Learning has positive influence on users’ Perceived Usefulness of e-Learning.	0.424	0.651	Positive	0.000
H12: Computer Self-efficiency is significantly and positively related to Perceived Ease of Use of e-learning.	0.270	0.519	Positive	0.000
H13: Perceptions of External Control is significantly and positively related to Perceived Ease of Use of e-learning.	0.254	0.504	Positive	0.000

Table 4-8: Results of Hypothesis Testing Cont..

Hypotheses	R^2	(ρ) Pearson Correlation	Type of Correlation	P-Value
H14: Computer Anxiety is significantly and negatively related to Perceived Ease of Use of e-learning.	0.139	-0.373	Negative	0.000
H15: Computer Playfulness will have a positive effect on perceived Ease of Use of e-learning.	0.107	0.326	Positive	0.000
H16: Perceived Enjoyment has a significant positive direct effect on Perceived Ease of Use of e-learning.	0.162	0.402	Positive	0.000
H17: Objective Usability has a significant positive direct effect on Perceived Ease of Use of e-learning.	0.280	0.529	Positive	0.000
H18: Management Support is significantly and positively related to Perceived Usefulness of e-learning.	0.090	0.300	Positive	0.000
H19: Management Support is significantly and positively related to Perceived Ease of Use of e-learning.	0.085	0.291	Positive	0.000
H20: Design Characteristics is significantly and positively related to Perceived Usefulness of e-learning.	0.094	0.306	Positive	0.000
H21: Design Characteristics is significantly and positively related to Perceived Ease of Use of e-learning.	0.114	0.338	Positive	0.000
H22: Organizational Support is significantly and positively related to Perceived Usefulness of e-learning.	0.067	0.258	Positive	0.000
H23: Organizational Support is significantly and positively related to Perceived Ease of Use of e-learning.	0.053	0.231	Positive	0.000
H24: Training is significantly and positively related to Perceived Usefulness of e-learning.	0.066	0.256	Positive	0.000
H25: Training is significantly and positively related to Perceived Ease of Use of e-learning.	0.072	0.269	Positive	0.000
H26: e-Learning System Quality will positively influence perceived satisfaction with e-Learning.	0.470	0.685	Positive	0.000
H27: Interactive Learning Activities will	0.347	0.589	Positive	0.000

positively influence Perceived Satisfaction with e-Learning.				
H28: e-Learning Effectiveness will positively influence Perceived Satisfaction with e-Learning.	0.350	0.592	Positive	0.000
H29: Multimedia Instruction will positively influence Perceived Satisfaction with e-Learning.	0.256	0.506	Positive	0.000

Table 4-8: Results of Hypothesis Testing Cont..

Hypotheses	**R^2**	**(ρ) Pearson Correlation**	**Type of Correlation**	**P-Value**
H30: Perceived Satisfaction is significantly and positively related to Behavioral Intention to use e-learning.	0.375	0.612	Positive	0.000
H31: The moderator (Voluntariness) will significantly influence the relationship between Subjective Norms and Behavioral Intention to use e-learning.	P>0.05			
H32: The moderator in TAM3 (Experience) will significantly influence extended paths relationships between (Subjective Norms; Ease of Use) and (Behavioral Intention), (Subjective Norms; Ease of Use) and (Usefulness), and (Computer Anxiety, Computer Playfulness, Perceived Enjoyment, Objective Usability) and (Ease of Use).	P>0.05			

Most of hypotheses are supported and significant at 99%. In addition, these hypotheses are derived from TAM3, TAM2, TAM, TPB, TRA, and from previous empirical studies that related to intervention, and environmental factors, therefore results supporting all these models and empirical studies.

- **Behavioral Intention Results**

The results of linear regression analysis of hypotheses shows that behavioral intention is jointly predicted by perceived usefulness (ρ=0.672, P<0.01), perceived ease of use (ρ=0.565, P<0.01), subjective norm (ρ=0.322, P<0.01), and perceived satisfaction (ρ=0.612, P<0.01). These factors: usefulness explain 45.2% (R^2=0.452), ease of use explain 32% (R^2=0.320), subjective norm explain 10.4% (R^2=0.104), and satisfaction explain 37.5% (R^2=0.375) of the variance on intention to use e-Learning technology, where R^2 represents the coefficient of determination for each factors, their values shown in Table 4-8.

- **Use Behavior (Actual Use) Results**

According to the literature which discussed in previous chapters, intention to use any new technology are the best single predictor of the actual use behavior in a variety of domains. Hence, **Hypothesis 4 is supported.**

- **Perceived Usefulness Results**

The results of linear regression analysis of hypotheses (Table 4-8) shows that perceived usefulness is jointly predicted by perceived ease of use (ρ=0.609, P<0.01), subjective norm (ρ=0.364, P<0.01), image (ρ=0.348, P<0.01), job relevance (ρ=0.584, P<0.01), output quality (ρ=0.651, P<0.01), result demonstrability (ρ=0.651, P<0.01), management support (ρ=0.300, P<0.01), design characteristics (ρ=0.306, P<0.01), organizational support ($\rho=0.258$, $P<0.01$), and training ($\rho=0.256$, $P<0.01$). These factors explain the factor usefulness of using e-Learning technology as following percentages: ease of use 37% ($R^2=0.370$), subjective norm 13.3% ($R^2=0.133$), image 12.1% ($R^2=0.121$), job relevance 34.1% ($R^2=0.341$), Output Quality 42.3% ($R^2=0.423$), result demonstrability 42.4% ($R^2=0.424$), management support 9% ($R^2=0.090$), design characteristics 9.4% ($R^2=0.094$), organizational support 6.7% ($R^2=0.067$), and training 6.6% ($R^2=0.066$).

- **Perceived Ease of Use Results**

The results of linear regression analysis of hypotheses shows that perceived ease of use is jointly predicted by computer self-efficacy ($\rho=0.519$, $P<0.01$), perception of external control ($\rho=0.504$, $P<0.01$), computer anxiety ($\rho=-0.373$, $P<0.01$), computer playfulness ($\rho=0.326$, $P<0.01$), perceived enjoyment ($\rho=0.402$, $P<0.01$), objective usability ($\rho=0.529$, $P<0.01$), management support ($\rho=0.291$, $P<0.01$), design characteristics ($\rho=0.338$, $P<0.01$), organizational support ($\rho=0.231$, $P<0.01$), and training ($\rho=0.269$, $P<0.01$). These factors explain the factor perception ease of use toward using e-Learning technology as following percentages: computer self-efficacy 27% ($R^2=0.270$), perception of external control 25.4% ($R^2=0.254$), computer anxiety 13.9% ($R^2=0.139$), computer playfulness 10.7% ($R^2=0.107$), perceived enjoyment 16.2% ($R^2=0.162$), objective usability 28% ($R^2=0.280$), management support

8.5% (R^2=0.085), design characteristics 11.4% (R^2=0.114), organizational support 5.3% (R^2=0.053), and training 7.2% (R^2=0.072), (Table 4-8).

- **Image Results**

The results of linear regression analysis of hypotheses (Table 4-8) shows that image is jointly predicted by subjective norm (ρ=0.432, P<0.01). This factor explain the Image factor when using e-Learning technology with the percentage 18.6% (R^2=0.186).

- **Perceived Satisfaction Results**

The results of linear regression analysis of hypotheses (Table 4-8) shows that perceived satisfaction is jointly predicted by e-Learning system quality (ρ=0.685, P<0.01), interactive learning activities (ρ=0.589, P<0.01), e-Learning effectiveness (ρ=0.592, P<0.01), multimedia instruction (ρ=0.506, P<0.01). These factors explain the factor perceived satisfaction toward using e-Learning technology as following percentages: e-Learning system quality 47% (R^2=0.470), interactive learning activities 34.7% (R^2=0.347), e-Learning Effectiveness 35% (R^2=0.350), multimedia instruction 25.6% (R^2=0.256).

- **Determinant Results**

➢ Results indicate that Intention to use e-Learning technology is predicted by most of the factors that we used in the research framework. Usefulness, ease of use, perceived satisfaction, subjective norm are directly influencing behavioral intention to use e-Learning; while image, job relevance, output quality, result demonstrability, computer self-efficacy, perception of external control, computer anxiety, computer playfulness, perceived enjoyment, objective usability, management support, design characteristics, organizational support, training, system quality, interactive learning activists, e-Learning effectiveness, and multimedia instruction are influencing intention to use e-Learning indirectly; whereas, subjective norm and ease of use are also indirectly influencing behavior intention. These factors totally explain 63.1% of the variance on intention to use e-Learning (Adjusted R^2 = 0.631), where Enter Regression technique used to prove this result.

In order to determine the factors that considered to be the most significant coefficient of determination of behavioral intention, Stepwise Regression technique were used. The finding shows that usefulness, computer self-efficacy, satisfaction, job relevance, multimedia instruction, ease of use, enjoyment, and computer anxiety are the main factors that explain 63% of the variance on intention to use e-Learning (Adjusted R^2 = 0.630) (Table 4-9, summarized this result).

Table 4-9: Coefficient of Determination of Intention [j] for Alternative Models– from (1-8) Stepwise Regression, while (9) Enter Regression Used

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.672[a]	.452	.450	.511
2	.746[b]	.557	.554	.460
3	.769[c]	.591	.587	.442
4	.783[d]	.613	.608	.431
5	.788[e]	.621	.615	.427
6	.793[f]	.628	.621	.424
7	.796[g]	.634	.626	.421
8	.800[h]	.640	.630	.419
9	.811[i]	.658	.631	.418
a. Predictors: (Constant), Usefulness				
b. Predictors: (Constant), Usefulness, Computer Self-Efficacy				
c. Predictors: (Constant), Usefulness, Computer Self-Efficacy, Satisfaction				
d. Predictors: (Constant), Usefulness, Computer Self-Efficacy, Satisfaction, Job Relevance				
e. Predictors: (Constant), Usefulness, Computer Self-Efficacy, Satisfaction, Job Relevance, Multimedia Instruction				
f. Predictors: (Constant), Usefulness, Computer Self-Efficacy, Satisfaction, Job Relevance, Multimedia Instruction, Ease of Use				
g. Predictors: (Constant), Usefulness, Computer Self-Efficacy, Satisfaction, Job Relevance, Multimedia Instruction, Ease of Use, Enjoyment				
h. Predictors: (Constant), Usefulness, Computer Self-Efficacy, Satisfaction, Job Relevance, Multimedia Instruction, Ease of Use, Enjoyment, Computer Anxiety				
i. Predictors: (Constant), All the model factors				
j. Dependent Variable: Intention				

➢ Results indicate that perceived usefulness of using e-Learning is predicted directly by social influence processes (subjective norm, and image), cognitive instrumental processes (job relevance, output quality, and result demonstrability), interventions (management support, design characteristics, organizational support, and training), and perceived ease of use. These factors totally explain 57.4% of the variance on perceived usefulness of using e-Learning (Adjusted R^2 = 0.574), where Enter Regression technique used to prove this result.

In order to determine the factors that considered to be the most significant coefficient of determination of perceived usefulness, Stepwise Regression technique were used. The finding shows that result demonstrability, output quality, ease of use, job relevance, and subjective norm are the main factors that explain 57.9% of the variance on perceived usefulness of using e-Learning (Adjusted R^2 = 0.579) (Table 4-10, summarized these results).

Table 4-10: Coefficient of Determination of Usefulness [c] for Alternative Model1 – Enter Regression used; Model2 – Stepwise Regression used.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.767[a]	.588	.574	.453
2	.766[b]	.586	.579	.450
a. Predictors: (Constant), Ease of Use, Subjective Norm, Image, Job Relevance, Output Quality, Result Demonstrability, Management Support, Design Characteristics, Organizational Support, Training				
b. Predictors: (Constant), Result Demonstrability, Output Quality, Ease of Use, Job Relevance, Subjective Norm				
c. Dependent Variable: Usefulness				

- Results indicate that perceived ease of use e-Learning is predicted directly by anchor factors (computer self-efficacy, perception of external control, computer anxiety, and computer playfulness), adjustment factors (perceived enjoyment, and objective usability), and intervention factors (management support, design characteristics, organizational support, and training). These factors totally explain 37.6% of the variance on perceived ease of use e-Learning (Adjusted $R^2 = 0.376$), where Enter Regression technique used to prove this result.

In order to determine the factors that considered to be the most significant coefficient of determination of perceived ease of use, Stepwise Regression technique were used. The finding shows that objective usability, computer self-efficacy, and perception of external control are the main factors that explain 38.7% of the variance on perceived ease of use e-Learning (Adjusted $R^2 = 0.387$) (Table 4-11, summarized this result).

Table 4-11: Coefficient of Determination of Ease of Use [c] for Alternative Model1 – Enter Regression used; Model2 – Stepwise Regression used.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.630[a]	.397	.376	.621
2	.627[b]	.393	.387	.615

a. Predictors: (Constant), Computer Self-Efficacy, Perception of External Control, Computer Anxiety, Computer Playfulness, Perceived Enjoyment, Objective Usability, Management Support, Design Characteristics, Organizational Support, Training

b. Predictors: (Constant), Objective Usability, Computer Self-Efficacy, Perception of External Control

c. Dependent Variable: Ease of Use

- Results indicate that perceived satisfaction in using e-Learning is predicted directly by environmental factors (system quality, interactive learning activists, e-Learning effectiveness, and multimedia instruction). These factors totally explain 57.4% of the variance on perceived satisfaction in using e-Learning (Adjusted R^2 = 0.574), where Enter Regression technique used to prove this result.

In order to determine the factors that considered to be the most significant coefficient of determination of perceived satisfaction, Stepwise Regression technique were used. The finding shows that system quality, e-Learning effectiveness, multimedia instruction and interactive learning activists are the main factors that explain 57.4% of the variance on perceived satisfaction in using e-Learning (Adjusted R^2 = 0.574) (Table 4-12, summarized this result).

Table 4-12: Coefficient of Determination of Satisfaction [c] for Alternative Model1 – Enter Regression used; Model2 – Stepwise Regression used.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.761[a]	.580	.574	.511
2	.761[b]	.580	.574	.511
a. Predictors: (Constant), System Quality, Interactive Learning Activists, e-Learning Effectiveness, Multimedia Instruction				
b. Predictors: (Constant), System Quality, e-Learning Effectiveness, Multimedia Instruction Interactive Learning Activists				
c. Dependent Variable: Satisfaction				

- **The Voluntariness as Moderator Result**

Voluntariness as a moderator examined by new tool developed by Hayes (2013). This tool could be added to modern version of SPSS as a regression analytical tool called 'PROCESS, by Andrew F. Hayes', which does the centering and interaction of predictor and moderator factors automatically.

The result of PROCESS analysis of hypothesis 31 shows that there is no potentially significant moderation between Subjective Norm and Voluntariness level on the Behavioral Intention to use e-Learning system, for interaction ($P>0.05$) (Table 4-13, shows the interactions results).

Table 4-13: Summary of Moderation results tested by PROCESS Procedure for SPSS.

Predictor (X)	Dependent (Y)	Moderator (M)	Interaction	R	R^2	F	Coeff.	t	P
Subjective Norm	Intention	Voluntaries	X * M	0.326	0.106	10.499	0.211	0.130	0.897
Subjective Norm	Intention	Experience	X * M	0.353	0.125	10.871	0.079	1.706	0.089
Image	Usefulness	Experience	X * M	0.363	0.132	16.496	0.022	0.566	0.572
Ease of Use	Usefulness	Experience	X * M	0.612	0.374	32.630	0.012	0.245	0.806

Table 4-13: Cont..

Predictor (X)	Dependent (Y)	Moderator (M)	Interaction	R	R^2	F	Coeff.	t	P
Ease of Use	Intention	Experience	X * M	0.570	0.325	23.200	0.020	0.432	0.666
Computer Anxiety	Ease of Use	Experience	X * M	0.377	0.142	13.757	-0.200	-0.290	0.772
Computer Playfulness	Ease of Use	Experience	X * M	0.332	0.110	11.252	0.019	0.334	0.739
Perceived Enjoyment	Ease of Use	Experience	X * M	0.405	0.164	17.742	0.032	0.660	0.510
Objective Usability	Ease of Use	Experience	X * M	0.536	0.287	37.450	0.047	1.064	0.288

- **The Experience as Moderator Result**

Experience as a moderator also be tested by using the PROCESS which developed by Hayes (2013).

The result of PROCESS analysis of hypothesis 32 shows that there is no potentially significant moderation between the experience levels and the predictor factors: subjective norm and ease of use on behavioral intention; and between experience level and the predictor factors: image, and ease of use on the usefulness; and between experience level and the predictor factors: computer anxiety, computer playfulness, perceived enjoyment, and objective usability on the ease of use, where ($P>0.05$) for all interactions between the moderators and predictor factors. (Table 4-13, shows the interactions results).

- **Correlations Among Groups of Homogenous Factors**

There are a significant correlations among environmental factors, among Intervention factors, among adjustment factors, among anchor factors, and among cognitive instrumental processes. All homogenous factors are connected with each other. The following tables (Tables 4-14 to 4-18) explores the positive correlations between each grouped factors as empirical study shows:

Table 4-14 : Correlations Among Environmental Factors

Environmental Factor		System Quality	Interactive Learning Activities	e-Learning Effectiveness	Multimedia Instruction
System Quality	Pearson Correlation	1	.553**	.509**	.382**
	Sig. (2-tailed)		.000	.000	.000
Interactive Learning Activities	Pearson Correlation		1	.695**	.537**
	Sig. (2-tailed)			.000	.000
e-Learning Effectiveness	Pearson Correlation			1	.541**
	Sig. (2-tailed)				.000
**. Correlation is significant at the 0.01 level (2-tailed).					
*. Correlation is significant at the 0.05 level (2-tailed).					

Table 4-15 : Correlations Among Intervention Factors

Intervention Factor		Manageme nt Support	Design Characteristi cs	Organizational Support	Training
Management Support	Pearson Correlation	1	.433**	.656**	.556**
	Sig. (2-tailed)		.000	.000	.000
Design Characteristics	Pearson Correlation		1	.383**	.401**
	Sig. (2-tailed)			.000	.000
Organizational Support	Pearson Correlation			1	.628**
	Sig. (2-tailed)				.000
**. Correlation is significant at the 0.01 level (2-tailed).					
*. Correlation is significant at the 0.05 level (2-tailed).					

Table 4-16 : Correlations Among Adjustment Factors

Adjustment Factor		Perceived Enjoyment	Objective Usability
Perceived Enjoyment	Pearson Correlation	1	.572**
	Sig. (2-tailed)		.000
**. Correlation is significant at the 0.01 level (2-tailed).			
*. Correlation is significant at the 0.05 level (2-tailed).			

Table 4-17 : Correlations Among Anchor Factors

Anchor Factor		Computer Self-Efficacy	External Control	Computer Anxiety	Computer Playfulness
Computer Self-Efficacy	Pearson Correlation	1	.717**	-.520-**	.440**
	Sig. (2-tailed)		.000	.000	.000
External Control	Pearson Correlation		1	-.535-**	.445**
	Sig. (2-tailed)			.000	.000
Computer Anxiety	Pearson Correlation			1	-.607-**
	Sig. (2-tailed)				.000
**. Correlation is significant at the 0.01 level (2-tailed).					
*. Correlation is significant at the 0.05 level (2-tailed).					

Table 4-18 : Correlations Among Cognitive Instrumental Processes Factors

Cognitive Instrumental Processes Factor		Job Relevance	Output Quality	Result Demonstrability
Job Relevance	Pearson Correlation	1	.588**	.620**
	Sig. (2-tailed)		.000	.000
Output Quality	Pearson Correlation		1	.676**
	Sig. (2-tailed)			.000
**. Correlation is significant at the 0.01 level (2-tailed).				
*. Correlation is significant at the 0.05 level (2-tailed).				

4.5- e-Learning Acceptance Framework in Palestinian Universities

Based on the results of hypotheses, the researcher determined the e-Learning acceptance framwork in Palestine (Figure 4-12).

The following table (Table 4-19) summarizes the results of hypotheses between factors:

Table 4-19 : Correlations between Factors Influencing e-Learning Acceptance

Influential \ Affected	Behavioral Intention	Perceived Usefulness	Perceived Ease of Use	Image	Perceived Satisfaction
Perceived Usefulness	H : ***				
Perceived Ease of Use	H : ***	H : ***			
Subjective Norm	H : **	H : **		H : **	
Image		H : **			
Job Relevance		H : ***			
Output Quality		H : ***			
Result Demonstrability		H : ***			
Computer Self-Efficacy			H : ***		
Perception of External Control			H : ***		
Computer Anxiety			H : **		
Computer Playfulness			H : **		
Perceived Enjoyment			H : **		
Objective Usability			H : ***		
Management Support		H : **	H : **		
Design Characteristics		H : **	H : **		
Organizational Support		H : **	H : **		
Training		H : **	H : **		
Perceived Satisfaction	H : ***				
e-Learning System Quality					H : ***
Interactive Learning Activities					H : ***
e-Learning Effectiveness					H : ***
Multimedia Instruction					H : ***
Voluntariness	H : ---				
Experience	H : ---				

Where:

(H : ***) : Supported hypothesis with very strong correlation compared with other hypotheses correlations (ρ > = 0.500)

(H : **) : Supported hypothesis with strong correlation (ρ 0.200-0.499)

(H :   ) : Supported hypothesis (ρ < 0.200)

(H : ---) : Unsupported hypothesis

e-Learning Acceptance Framework in Palestine based on the previous tables is:

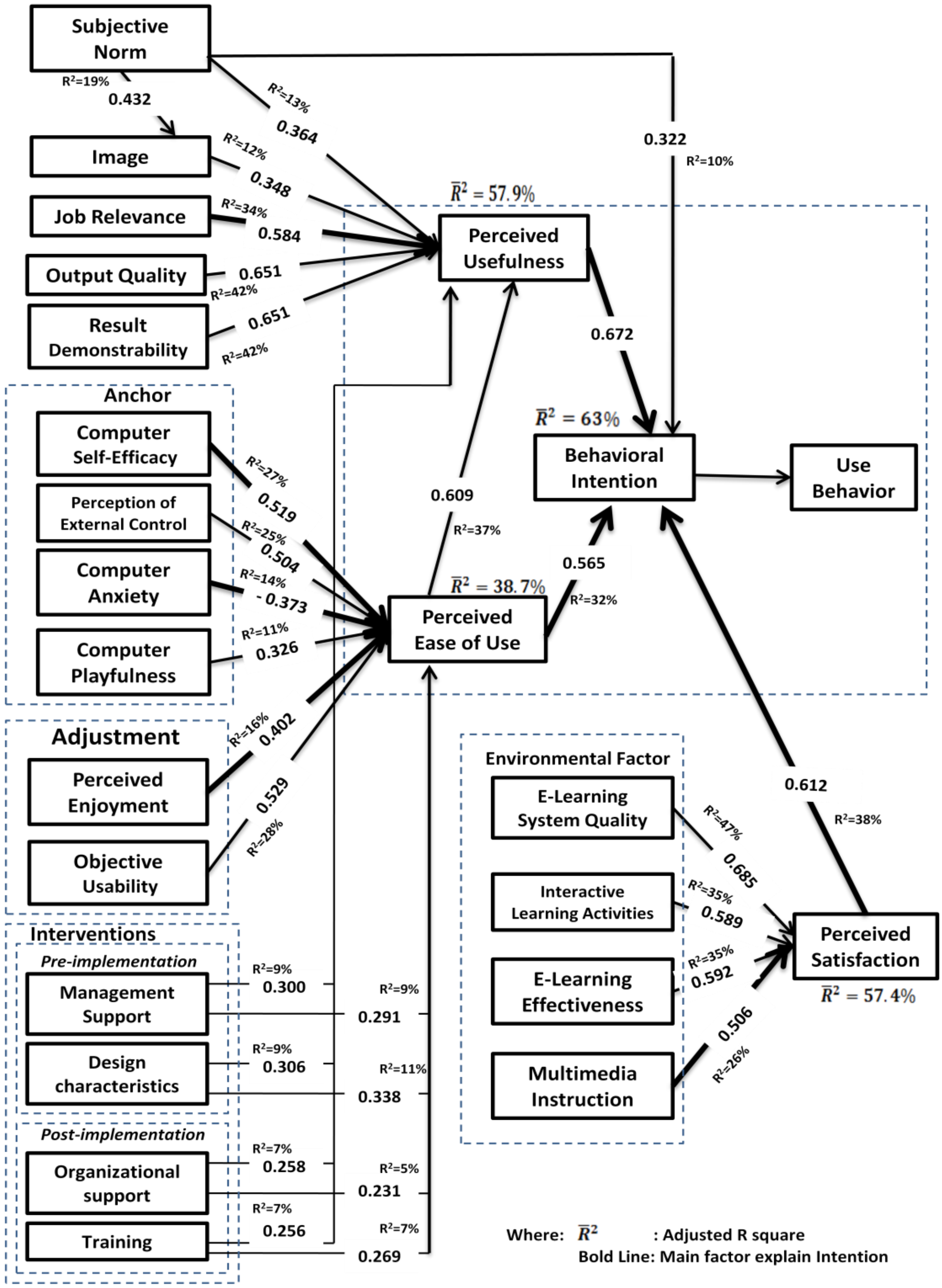

Figure 4-12: e-Learning Acceptance Framework in Palestinian Universities

4.6- Qualitative Data as Method analysis

The researcher obtained the research interview results based on Miles and Hubuerman (1994) approach who takes on three generally steps to analyze qualitative data, that's are: data reduction, data display, and conclusions drawing. Whereas, data reduction refers to how select, code, and categorize qualitative data; while data display refers to the pattern in which data will be presented such as a matrix, a graph, a diagram, or a chart (Sekaran and Bougie, 2010). The researcher coding the interview data with theme unit which considered to be the larger and often the more useful unit of content analysis according to Sekaran and Bougie (2010). Then a matrix was selected to bring together and to display the coded data.

After that, a matrix was developed to display the qualitative data, a higher themes was extracted from the data, and then 27 of subcategories have been combined into 6 categories. Posteriorly, the researcher making contrast and comparison between universities according to what themes stand for.

Table 100:Appendix B, shows the displaying of the qualitative data in an organized condensed manner, after reduction and coding.

4.6.1. Qualitative Data Results

These results of interview data analysis explores the following facts:

- **e-Learning Tools and Application Used**

- The results shows that all universities familiar with most of synchronous or a synchronous e-Learning tools which used voluntary in most cases.

- Asynchronous e-Learning tools are the most widely used in the Palestinian universities by approximate (77%), and in the second synchronous e-Learning tools by approximate (55%), according to e-Learning specialists in Palestinian universities who answered 'yes'.

- The tools respectively (E-mail, File Exchange, Interactive Video, LMS, Chat, White Board, World Wide Web, Discussion Groups, Audio Conferences, and Mailing List) are most commonly used in all Palestinian universities while (Video Conferences, CD, Web Conference, and Satellite Programs) less used, whereas Satellite Programs not used at all.

- Universities that use more than 80% of e-Learning tools are respectively (An-Najah, Hebron, Islamic, and Arab-American) universities. But, the least was Al-Aqsa.

- **The Readiness of Infrastructure**

- The existence of a specialized e-Learning centers or units only in 58% of the Palestinian Universities. These universities are (Open-

University, Islamic, Al-Azhar, Hebron, An-Najah, Kadoori, and Al-Quds).

- The universities (Open-University, Islamic, Hebron, Birzeit, An-Najah, and Al-Quds) are qualified to completely experience a successful e-Learning at the present time as specialists answered; while universities (Bethlehem, Polytechnic, Al-Azhar, and Kadoori) are capable for experience a successful e-Learning but in the existence of support and some development in infrastructure; whereas universities (Arab-American, and Al-Aqsa) are not ready.

- For the Availability of necessary ICT equipment, tools and applications, some universities seen it available such as (Open-University, Islamic, Bethlehem, Birzeit, and An-Najah), while most universities argued that ICT need to develop and to provide it with a protection system, furthermore need to improve the internet.

- **The Concept of e-Learning According to Universities Specialists**

- Universities differ in their definition of e-Learning, each of which defined it according to its usage internally. But all universities agreed on the concept of employing technology in the educational process, in order to provide students with scientific material through internet according to Islamic specialist, to support communication between lecturers and students as Polytechnic specialist mentioned, to computerize the files and tasks as Arab-American specialist argued, or to be platform for uploading or downloading files electronically as Kadoori seen.

- **Challenges and Obstacles of e-Learning Acceptance in Palestinian Universities**

- As specialists argued, there are many factors that posed a challenges at attempt to improve the perspective of lecturers toward the e-Learning usage at various universities, that's are: how to underestimate the time and effort consumption when using e-Learning?, how to highlight the usefulness and ease of use of e-Learning?, how to make e-Learning attractive to students?, how to enhance e-Learning interactivity?, how to reduce the sense of burden when using e-Learning?, how to mitigate the e-Learning anxiety?, how to reassure the lecturers that they will not be laid off in case the employment of e-Learning in the educational process?.

- Furthermore, the main factors that affecting lecturers in using e-Learning from the viewpoint of e-Learning specialists are: technology anxiety, technology and computer self-efficacy, technical support, subjective norm, time and effort needed, intention to use, fear of experiment, fear of failure, voluntary use, motivation, training, internet availability in homes, lecturers ages, students perceptions, and time available.

- In regard to challenges facing e-Learning system implementation, e-Learning specialists confirmed the existence of factors formed main challenge in this phase such as: instill culture of change, provide management support and commitment, absorbing new technology, overcoming the lack of Internet and computers in many homes, enhance self-efficacy in computer use, overcome power outages in some universities, create motivations and incentives system, courses development, dealing with lack of technical staff, enhance demand for training, and promote awareness of e-Learning importance.

- **Culture of Change and University Strategy to adopt e-Learning system**

- Approximately 54.5% of Palestinian universities such as (An-Najah, Hebron, Bethlehem, Al-Azhar, Birzeit, and Al-Quds) apply a model to promote culture of change toward optimal use of e-Learning system. But, this model did not amount to a comprehensive change or achieve the desired goals in some of these universities as e-Learning specialists recognized.

- But, there is a disparity in the following a specific strategies to promote adoption of e-Learning system or some of its application in these universities. For example, the Islamic University adopt strategy to record lectures and to reduce the number of students in classroom lectures that are recorded, in order to encourage lecturers toward the actual use, and then to merge recorded lectures with the Moodle;

while Hebron University's strategy is to determine what proportion teaches electronically in courses, and to develop standards for courses design and evaluation; whereas An-Najah university's strategy is to apply new technology, to develop motivation system, to standardize evaluation, to develop ICT, and to enhance training contents. It remains a voluntary e-Learning strategy as in the foreseeable future in all Palestinian universities

- **Institution support and organizational interventions to ensure e-Learning Acceptance**

- Approximately 82% of the universities management in Palestine committed to support e-Learning acceptance and to provide appropriate e-Learning physical resources; and approximately 73% committed to motivate their staff to use e-Learning and to provide adequate financial support for the implementation of e-Learning system. But, approximately 54% of these universities lack to the existence of a clear policies to adopt e-Learning systems and to standardized evaluations.

- According to interviews with e-Learning specialists shows that management support and organizational interventions to ensure e-Learning adoption is the best in (Hebron, and An-Najah) universities. But, this is contrary to the (Polytechnic, Arab-American, and Al-Quds) universities which are considered the less fortunate.

4.7- Summary

In this chapter the results of data analysis which were collected via survey and interview have been presented. The results indicated that there are some statistical differences among participants according to their ages, experiences, colleges, universities, perceptions about using e-Learning in holidays, internet and computer usage, and internet speed.

Furthermore, the results indicated that the highest percentage of participants are males, aged (40-49 years old), from An-Najah National University, lecturing in human faculties, having teaching experiences (6-10 years), ranked into assistant, using internet from (1-3 hours) per day, using internet speed 2M, and using computer at work every day from (1-3 hours) per day.

In addition, all hypotheses that derived from TAM3 and that related to intervention, and environmental factors were supported and significant at 99%, excluding the moderation factors. And the coefficient of determination of intention to use e-Learning in the research framework is 63.1%, where perceived usefulness is the strongest intention determinant as the results shown.

On the other hand, interview results show that most of the palestinian universities are committed to support e-Learning acceptance, asynchronous e-Learning tools are the most widely used, and 58% of those universities established locally specialized e-Learning centers or units.

In the next chapter, all of the survey and interview results and findings will be discussed.

Chapter Five

Discussion

5.1- Overview

This chapter presents the dissection of the research results and findings of analysis for the data collected via questionnaire and interview. It discussed the results of descriptive statistics and hypotheses testing. Furthermore, this chapter discussed the reality of e-Learning in Palestinian universities from the viewpoint of specialists in this area who were interviewed via the second tool.

5.2- Quantitative Data Discussion

5.2.1. Personal Information Discussion

The highest percentage of participants is males who form 83.0% of respondents. This corresponds to what is indicated by the statistics of the Ministry of Education and Higher Education in 2013, which showed that the ratio of males to females who were hired in the Palestinian universities as 84% to 16%. This explains the small percentage of respondents from female lecturers compared with male lecturers in Palestinian universities.

Furthermore, the highest percentage of participants from An-Najah National University who form 25.2% of participants. This result is expected; because An-Najah University is the largest Palestinian universities in terms of the number of lecturers and students according to Ministry of Education and Higher Education on (2013). So, we distributed the highest number of questionnaire in An-Najah National University, because it has the highest number of full-time lecturers.

5.2.2. Technology Usage Discussion

The highest percentage of participants using internet from (1-3 hours) per day who form 47.9% of respondents. This percentage compatible with the use of computer at work, where the study showed that 51.5% of respondents use the computer at work from (1-3 hours) a day. And the research results shows that 57% of participants using 2M or less. In addition, most Palestinians are unable to communicate faster and use sophisticated techniques, such as direct broadcasting and video due to the limited speed of internet, which not exceed 12M at home at best. All these reasons, beside the prices range and infrastructure constrains for home internet services, have contributed in reducing the ability of lecturers to access or employ internet effectively.

The highest percentage of participants considered the using of e-Learning voluntary at university who form 87.5% of respondents. e-Learning in Palestinian universities still voluntary. But, the encouragement, motivation and training processes contributed to the payment of some lecturers to use some of e-Learning applications. In addition, some lecturers have been obligated to conduct electronic lectures, as the use of virtual class in the Al-Quds Open University, or the use of Moodle in other universities. That making 12.5% of participants believe that the use of e-Learning is mandatory.

The highest percentage of participants pointed that there are no e-Learning lectures delivered in holidays who form 81.6% of respondents.

Palestinian universities differ in determining Day weekend, some determined on Saturday and others on Thursday. Besides finding lecturers who held their lectures on Fridays or in late-night holidays, in particular those in Al-Quds Open University who held web-based lectures through virtual classes. So we found 18.4% of respondents hold or prepared electronic lectures, in times of holidays.

5.2.3. Descriptive Statistics among Survey Respondents Discussion

- **Discussion of Statistical Differences according to Lecturer College**

These Results indicates that lecturers who specialist in Human Science, have better perception about the training they received for the use of e-Learning without any of invoke passive reaction. Therefore, they realized the extent of management's commitment to the implementation of all forms of learning that supported by emerging technologies, and they hold the e-Learning functionality which they considered tangible and observable. So, they believes that e-Learning performs their tasks well, more applicable to their job, increases their performance, rises the efficiency of the educational process, and enhance their status more than lecturers who specialist in Natural Science. These factors together, make their perceived satisfaction and perceived usefulness in the use of e-Learning, the highest. And thus they have a higher intention to use e-Learning.

As for the specialists in the natural sciences who familiar with emerging technology, because of the need to use it, whether it was during the study or in the education process, they did not feel or catch the difference and did not touch the results of the use of e-Learning as the lecturers who specialize in Human Science. Perhaps their experience in employing and using of technology, made them able to identify the e-Learning quality based on the efficient of its functions, interactions, and contents.

- **Discussion of Statistical Differences according to e-Learning Usage in Holidays**

According to these results, lecturers who use e-Learning in holidays have the highest believe that they have been trained well, they have the ability to perform specific task using a computer, they can access organizational and technical resources in using the system, they observed the results of using e-Learning and considering it applicable to their job, they received adequate organizational and management support, they witnessed the system quality and its effectiveness, and their status enhanced; and thus this will affect positively their intention to more e-Learning technology acceptance.

It is clear that those who use e-Learning online and outside the official working hours, are qualified to deal with the emerging technology, after receiving sufficient support and training. The work outside the official working hours or on holidays, as weekend holiday, is prevalent culture in Palestinian society. For example, Al-Quds Open University held lectures based on virtual class technology on Saturday which considered to be a public holiday. So, if the lecturers are not able to employ technology in education, and did not touch the management and organizational support required, and did not have the self-efficacy in dealing with the computer, they will not accept the e-learning and employment it in the holidays.

- **Discussion of Statistical Differences according to Age**

The results indicate that the participants aged in the forties who have dealt with various traditional systems of education and by virtue of their experience, they realized the Usefulness and benefits of using e-Learning technology and its impact on the progress of education process. This is contrary to the impression of elderly aged 50 and more who felt that e-Learning has become a burden. As it also contradicts the perception of participants aged in the twenties who familiar with technology where they also aware of how optimal use of its application in their job, and in this area of technology there is a fact that dealing with computer became a mandatory requirement in education, and essential to have someone the opportunity to Employment, that's what made them do not feel the substantial difference toward the Usefulness of using e-Learning.

And, the results indicate that the participants who are in the thirties and forties have received professional developments and adequate training to handle the organizational and technical resources for use in e-Learning, more than participants who their ages crossed the fifties; that because who aged fifties and more are accustomed to the traditional education system, moreover they have awe toward culture change and technology use.

In addition, the results indicate that due to the practical experience and training in dealing with e-Learning, participants aged in forties don't requires more effort to accomplish their task as scheduled when using e-Learning system, as who aged in twenties and fifties requires.

Farthermore, the results indicates that participants aged in thirties and forties have high belief that management has a direct or an indirect committed to the successful implementation of e-Learning system by customizing some IT features and applications, or providing resources, sponsoring, or directives which considered to be one of the most critical success factor for the complex systems implementation. So, the more experience in using technology, the belief of the importance management support in the implementation phase will be increased.

As well, results indicate that the participants who are in the forties and thirties are aware of the system characteristics such as: accuracy, currency, interactivity, accessibility, reliability, flexibility, adaptability, and completeness; more than elderly participants who did not acquire expertise in the field of e-Learning because of weakness of self-efficacy in computer use where (mean equal 3.97), the lowest mean compared to others.

Also, the results indicate that the participants who are aged in fifties not enough familiar with technology although their computer anxiety are the highest and their computer self-efficacy are the lowest. So, their perceived satisfaction toward the e-Learning system will decrease their intention to adapt it. This is in the contrary to those who are aged in the forties.

- **Discussion of Statistical Differences according to University**

The results of statistical differences between universities superiority appear in perception in favor of Hebron, Islamic, Al-Quds Open University, and Bethlehem universities in most factors that affect e-Learning acceptance by lecturers, especially those related to the e-Learning functionality, quality, and effectiveness, besides those related to interventional factors which considered to be more tangible from the viewpoint of lecturers in those universities when compared to the others.

The lecturers of those universities clearly had received a hands-on mechanism to employing the e-Learning in education process, and to explore the emerging technologies from a technical standpoint and functional perspective. This is a result of training and professional development that mitigate the invoke passive reaction toward the e-Learning usage. And, this indicates the existence of management support, represented in commitment of managers and executives in the implementation of e-Learning through intervene directly by using incentive structure, or indirectly by providing resources, sponsoring, or issuing guidance.

- **Discussion of Statistical Differences according to Experience**

The results of statistical differences between universities according to lecturers experience indicates the participants who experience 16 years and more have the lowest belief that e-Learning is applicable to their job and performs their tasks well, that are due to the shortage of self-efficacy in computer use compared to others. Those lecturers may be over the age of fifty, so they not enough familiar with emerging technology and felt that e-Learning has become a burden. So, their perceived satisfaction toward the e-Learning will decrease and negatively affect their intention to accept it. This is in the contrary to those who experience 15 and less.

- **Discussion of Statistical Differences according to Internet Usage**

These results indicates that participants who represents the least of internet usage per hours per day are the most computer anxiety, the lowest playfulness of computer, the lowest self-efficacy in using a computer or a new technology, have lowest perceptions about the effectiveness of e-Learning system, and have lowest believe that management has committed to successful implementation and use of e-Learning system when compared to others who use internet more than 3 hours per day, and thus its impact on behavioral intention toward the actual use of e-Learning technology. So, the more hours of internet use leads to better results in the e-Learning adoption.

- **Discussion of Statistical Differences according to Computer Usage**

These results indicates that participants who represents the least of computer usage per hours per day are the lowest self-efficacy and enjoyment in using a computer or a new technology, have lowest believe that e-Learning system is more applicable to their job, have lowest believe that university activates or functions assist and support users in the e-Learning system usage in various forms when compared to others who use computer more than 3 hours per day. So, the more hours of computer use leads to better results in the e-Learning adoption.

5.2.4. Hypotheses Testing Discussion

Most of hypotheses are supported and significant at 99%. This indicates that all results are logical and can be adopted, when compared with previous studies in the literature, which have been addressed in Chapter Two.

- **Behavioral Intention Discussion**

Intention to use e-Learning applications has a strong relationship with usefulness which is significant at 99% (ρ=0.672). This indicates that usefulness is the most important factor which influences lecturers' intention to accept e-Learning system. Hence, **Hypothesis 1 is supported**.

As well as it has been supported in these studies: Venkatesh and Bala (2008); Venkatesh and Davis (2000); Davis (1989); Chuo et al. (2011); Abbad et al. (2009); AL-Ammari and Hamad (2008); Phua, et al. (2012); Liao et al. (2008); Hu et al. (1999); Chismar and Wiley-Patton (2003); Sun and Zhang (2006); Chatzoglou et al. (2009); Hwang and Yi (2002); Punnoose (2012); Venkatesh (2000); Al-alak and Alnawas (2011); Shih and Huang (2009).

Intention to use e-Learning technology has a strong relationship with satisfaction which is significant at 99% (ρ=0.612). This indicates that satisfaction is another important factor which influences lecturers' intention to use e-Learning system. Hence, **Hypothesis 30 is supported**. As well as it has been supported in these studies: DeLone and McLean (2004); DeLone and McLean (2003); Wixom and Todd, (2005); Liaw (2008).

Intention to use e-Learning technology has a strong relationship with ease of use which is significant at 99% (ρ=0.565). This indicates that ease of use is another important factor which influences lecturers' intention to use e-Learning system. Hence, **Hypothesis 2 is supported**. As well as it has been supported in these studies: Vankatesh and Davis (1996); Venkatesh (1999); Venkatesh and Bala (2008); Venkatesh and Davis (2000); Chuo et al. (2011); Abbad et al. (2009); AL-Ammari and Hamad (2008); Phua, et al. (2012); Mohamed and Abdul-Karim (2012);

Sun and Zhang (2006); Chatzoglou et al. (2009); Hwang and Yi (2002); Venkatesh (2000); Al-alak and Alnawas (2011); Shih and Huang (2009).

Intention to use e-Learning technology has a strong relationship with subjective norm which is significant at 99% (ρ=0.322). This indicates that subjective norm factor influence lecturers' intention to use e-Learning system. Hence, **Hypothesis 5 is supported**. As well as it has been supported in these studies: Venkatesh and Bala (2008); Venkatesh and Davis (2000); Ajzen (1991); Abbad et al. (2009); AL-Ammari and Hamad (2008); Park (2009); Schepers and Wetzels (2007); Punnoose (2012).

- **Use Behavior (Actual Use) Discussion**

According to the literature which discussed in previous chapters, intention to use any new technology are the best single predictor of the actual use behavior in a variety of domains. Hence, **Hypothesis 4 is supported.**

- **Perceived Usefulness Discussion**

Perceived usefulness of the using e-Learning technology has a strong relationship with output quality and result demonstrability which are significant at 99% (ρ=0.651). This indicates that output quality and result demonstrability are the most important factors which influences lecturers' perceived usefulness of using e-Learning system. Hence, **Hypothesis 10 and Hypothesis 11 are supported**. As well as

Hypothesis 10 has been supported in these studies: Venkatesh and Bala (2008); Venkatesh and Davis (2000); Chismar and Wiley-Patton (2003), while hypotheses 11 in these studies: Venkatesh and Bala (2008); Venkatesh and Davis (2000).

Perceived usefulness of the using e-Learning technology has a strong relationship with ease of use which is significant at 99% (ρ=0.609). This indicates that ease of use is another important factor which influences lecturers' perceived usefulness of using e-Learning system. Hence, **Hypothesis 3 is supported**. As well as it has been supported in these studies: Davis et al. (1989); Venkatesh and Bala (2008); Venkatesh and Davis (2000); Davis (1989); Chuo et al. (2011); Abbad et al. (2009); AL-Ammari and Hamad (2008); Park (2009); Liao et al. (2008); Hu et al. (1999); Mohamed and Abdul-Karim (2012); Sun and Zhang (2006); Chatzoglou et al. (2009); Hwang and Yi (2002); Punnoose (2012); Venkatesh (2000); Allahyari and Ramazani (2012).

Perceived usefulness of the using e-Learning technology has another strong relationship with job relevance which is significant at 99% (ρ=0.584). This indicates that job relevance is another important factor which influences lecturers' perceived usefulness of using e-Learning system. Hence, **Hypothesis 9 is supported**. As well as it has been supported in these studies: Venkatesh and Bala (2008); Venkatesh and Davis (2000); Chismar and Wiley-Patton (2003).

Perceived usefulness of the using e-Learning technology has a strong relationship with subjective norm which is significant at 99% (ρ=0.364). This indicates that subjective norm is another important factor which influences lecturers' perceived usefulness of using e-Learning system. Hence, **Hypothesis 6 is supported**. As well as it has been supported in these studies: Venkatesh and Bala (2008); Venkatesh and Davis (2000); Abbad et al. (2009); AL-Ammari and Hamad (2008); Park (2009); Punnoose (2012).

Perceived usefulness of the using e-Learning technology has a strong relationship with Image which is significant at 99% (ρ=0.348). This indicates that Image is another important factor which influences lecturers' perceived usefulness of using e-Learning system. Hence, **Hypothesis 8 is supported**. As well as it has been supported in these studies: Venkatesh and Bala (2008); Venkatesh and Davis (2000).

Perceived usefulness of the using e-Learning technology has a strong relationship with design characteristics which is significant at 99% (ρ=0.306). This indicates that design characteristics is an important intervention factor which influences lecturers' perceived usefulness of using e-Learning system. Hence, **Hypothesis 20 is supported**. As well as it has been supported in these studies: Venkatesh (2006); Venkatesh and Bala (2008).

Perceived usefulness of the using e-Learning technology has a strong relationship with management support which is significant at 99%

(ρ=0.300). This indicates that management support is another important intervention factor which influences lecturers' perceived usefulness of using e-Learning system. Hence, **Hypothesis 18 is supported**. As well as it has been supported in these studies: Venkatesh (2006); Venkatesh and Bala (2008); Chatzoglou et al. (2009); Allahyari and Ramazani (2012); Davis et al. (1989); Shih and Huang (2009); Lewis et al. (2003).

Perceived usefulness of the using e-Learning technology has a relationship with organizational support which is significant at 99% (ρ=0.258). Hence, **Hypothesis 22 is supported**. As well as it has been supported in these studies: Venkatesh (2006); Venkatesh and Bala (2008); Igbaria and Iivari (1995); Allahyari and Ramazani (2012).

In addition, perceived usefulness of the using e-Learning technology has a relationship with training which is significant at 99% (ρ=0.256). Hence, **Hypothesis 24 is supported**. As well as it has been supported in these studies: Venkatesh (2006); Venkatesh and Bala (2008); Allahyari and Ramazani (2012).

- **Perceived Ease of Use Discussion**

Objective usability of using e-Learning technology has a strong relationship with perceived ease of use which is significant at 99% (ρ=0.529). This indicates that objective usability is the most important factor which influences lecturers' perceived ease of use toward using e-Learning system. Hence, **Hypothesis 17 is supported**. As well as it has been supported in these studies: Venkatesh and Bala (2008); Venkatesh (2000).

Computer self-efficacy of using e-Learning technology has a strong relationship with perceived ease of use which is significant at 99% (ρ=0.519). This indicates that computer self-efficacy is an important anchor factor which influences lecturers' perceived ease of use toward using e-Learning system. Hence, **Hypothesis 12 is supported**. As well as it has been supported in these studies: Venkatesh and Bala (2008); Chuo et al. (2011); Abbad et al. (2009); AL-Ammari and Hamad (2008); Park (2009); Chatzoglou et al. (2009); Hwang and Yi (2002); Punnoose (2012); Venkatesh (2000); Shih and Huang (2009); Lewis et al. (2003).

Perception of external control from using e-Learning technology has a strong relationship with perceived ease of use which is significant at 99% (ρ=0.504). This indicates that perception of external control is another important anchor factor which influences lecturers' perceived ease of use toward using e-Learning system. Hence, **Hypothesis 13 is supported**. As well as it has been supported in these studies: Venkatesh and Bala (2008); Venkatesh (2000); Aggorowati et al. (2012).

Perceived enjoyment from using e-Learning technology has a strong relationship with perceived ease of use which is significant at 99% (ρ=0.402). This indicates that perceived enjoyment is another important adjustment factor beside objective usability factor which influences lecturers' perceived ease of use toward using e-Learning system. Hence,

Hypothesis 16 is supported. As well as it has been supported in these studies: Venkatesh and Bala (2008); Venkatesh (1999); Sun and Zhang (2006); Agarwal and Karahanna (2000); Yi and Hwang (2003); Chatzoglou et al. (2009); Hwang and Yi (2002); Venkatesh (2000).

Computer anxiety from using a computer has a strong negative relationship with perceived ease of use toward using e-Learning system which is significant at 99% (ρ= - 0.373). This indicates that computer anxiety is another important anchor factor which influences lecturers' perceived ease of use toward using e-Learning system. Hence, **Hypothesis 14 is supported**. As well as it has been supported in these studies: Venkatesh and Bala (2008); Chuo et al. (2011); Chatzoglou et al. (2009); Venkatesh (2000).

Design characteristics of e-Learning system has a strong relationship with perceived ease of use which is significant at 99% (ρ=0.338). This indicates that design characteristics is an important intervention factor which influences lecturers' perceived ease of use toward using e-Learning. Hence, **Hypothesis 21 is supported**. As well as it has been supported in these studies: Venkatesh (2006); Mueller and Zimmermann (2009); Davis (1993).

Computer playfulness in the use of computer has a strong relationship with perceived ease of use toward using e-Learning system which is significant at 99% (ρ=0.326). This indicates that computer playfulness is another important anchor factor which influences lecturers' perceived ease of use toward using e-Learning system. Hence, **Hypothesis 15 is supported**. As well as it has been supported in these studies: Venkatesh and Bala (2008); Venkatesh (2000).

Management support at the implementation of e-Learning system has a strong relationship with perceived ease of use which is significant at 99% (ρ=0.291). This indicates that management support as intervention factor influence lecturers' perceived ease of use toward using e-Learning. Hence, **Hypothesis 19 is supported**. As well as it has been supported in these studies: Venkatesh (2006); Mueller and Zimmermann (2009); Davis et al. (1989); Shih and Huang (2009).

Training to use e-Learning system has a strong relationship with perceived ease of use which is significant at 99% (ρ=0.269). This indicates that training as an intervention factor influence lecturers' perceived ease of use toward using e-Learning. Hence, **Hypothesis 25 is supported**. As well as it has been supported in these studies: Venkatesh (2006); Amoako-Gyampah and Salam (2004).

Organizational support when using e-Learning system has a strong relationship with perceived ease of use which is significant at 99% (ρ=0.231). This indicates that organizational support as an intervention factor influence lecturers' perceived ease of use toward using e-Learning. Hence, **Hypothesis 23 is supported**. As well as it has been supported in these studies: Venkatesh (2006); Chuo et al. (2011); Igbaria and Iivari (1995).

- **Image Discussion**

Subjective norm of using e-Learning technology has a strong relationship with image which is significant at 99% (ρ=0.432). This indicates that subjective norm is important factor which influences lecturers' image toward using e-Learning system, if it will enhance their status. Hence, **Hypothesis 7 is supported**. As well as it has been supported in these studies: Venkatesh and Bala (2008); Venkatesh and Davis (2000).

- **Perceived Satisfaction Discussion**

e-Learning system quality has a strong relationship with perceived satisfaction which is significant at 99% (ρ=0.685). This indicates that e-Learning system quality is the most important factor in the proposed model, and the most important environmental factor which influences lecturers' perceived satisfaction toward using e-Learning system. Hence, **Hypothesis 26 is supported**. As well as it has been supported in these studies: Liaw and Huang (2011); Liaw (2008); Oun-Alla (2013); DeLone and McLean (2003); Wixom and Todd, (2005).

e-Learning effectiveness has a strong relationship with perceived satisfaction which is significant at 99% (ρ=0.592). This indicates that e-Learning effectiveness is another more important environmental factor which influences lecturers' perceived satisfaction toward using e-Learning system. Hence, **Hypothesis 28 is supported**. As well as it has been supported in these studies: Al-Maskari and Sanderson (2010).

Interactive learning activities in e-Learning system has a strong relationship with perceived satisfaction which is significant at 99% (ρ=0.589). This indicates that interactive learning activities is another important environmental factor which influences lecturers' perceived satisfaction toward using e-Learning system. Hence, **Hypothesis 27 is supported**. As well as it has been supported in these studies: Liaw and Huang (2011); Liaw (2008).

Multimedia instruction activities in e-Learning system has a strong relationship with perceived satisfaction which is significant at 99% (ρ=0.506). This indicates that multimedia instruction is another important environmental factor which influences lecturers' perceived satisfaction toward using e-Learning system. Hence, **Hypothesis 29 is supported**. As well as it has been supported in these studies: Liaw and Huang (2011); Liaw (2008).

5.2.5. Determinant Discussion

The results of Deteminant test shows that the research framework interprets 63% of lecturers intention to use e-Learning, this is consistent with other studies which found the similar result related to the significant coefficient of determination of behavioral intention based on integration of main TAM model factors (usefulness, ease of use) with other external factors. The following table (Table 5-1) shows the findings of some related studies:

Table 5-1: Coefficient of Determination of Intention for Related Studies

Study	Coefficient of Determination of Intention	Strongest Intention Determinant
Venkatesh and Davis (2000)	35.0 %	Usefulness
Venkatesh and Bala (2008)	53.0 %	Usefulness
Abbad el, al. (2009)	75.0 %	Ease of Use
Wixon and Todd (2005)	63.0 %	Usefulness
Amoako-Gyampah and	28.8 %	Usefulness
Chatzoglou et al. (2009)	52.0 %	Enjoyment
Chismar and Wiley-Patton	59.0 %	Usefulness
Farahat (2012)	60.3 %	Attitude
Hwang and Yi (2002)	29.0 %	Usefulness
Mohamed and Abdul-Karim	30.4 %	Ease of Use
Shih and Huang (2009)	41.0 %	Usefulness
Sun and Zhang (2006)	54.9 %	Usefulness

e-Learning technology is new in Palestinian universities, which still working on adopting such suited technologies, in order to enhance lecturers intentions to use exist or newly adopted e-Learning tools and applications. e-Learning acceptance framework which introduced in this research will help universities to achieve this goal, as well as other similar studies which introduced a lot of common factors with this study, that affecting any user's intention toward new technology.

5.2.6. Moderation Discussion

- **Discussion of Voluntariness as Moderator**

The result of voluntariness as a moderator, shows that there is no potentially significant moderation between Subjective Norm and Voluntariness level on the Behavioral Intention to use e-Learning system. Hence, **Hypothesis 31 is not supported**.

The reason behind this results returns to the Palestinian universities policies and procedures, which do not impose on the lecturers to use e-Learning technology in their courses. Most of the lecturers who adopt e-Learning technology using it on a voluntary basis, while the universities offer them encouragement, motivation, and some organizational and management support. Furthermore, those who considered e-Learning is mandatory in universities, representing a small number, however their impressions and perceptions toward e-Learning system did not vary from those who use e-Learning in a voluntary basis, and also they influenced by the same factors that have affected who use e-Learning voluntarily.

- **Discussion of Experience as Moderator**

The results of experience as a moderator, shows that there is no potentially significant moderation between the experience levels and the the seven predictors that are: subjective norm, ease of use, image, ease of use, computer anxiety, computer playfulness, perceived enjoyment, and objective usability on other factors. Hence, **Hypothesis 32 is not supported**.

This results shows there is no disparity between the expertise levels among lecturers as a moderation that affects other relationships between some factors. The reason behind this results refers to the Palestinian universities where they have recent experience in the field of e-Learning which newly adopted, and thus all the lecturers at the university were awareness the evolution of this system in all its details, perhaps some of them had a motivation for adoption several of its applications, but their perceptions did not differ much.

- **Discussion of Correlations Among Grouped Factors**

All homogenous factors in the research framework which grouped as discussed in Chapter Two, are connected with each other with a significant correlations. This indicats for instance, if the system quality has enhanced, then the effectiveness of e-Learning system will be increased, and vice versa. In addition, increased effort to train lecturers on the use of e-Learning system will raise the level of organizational support, and thus positively push up the lecturers perceived ease of use, and this is what will increase their Intention to adopt and use the system.

5.3- Qualitative Data Discussion

5.3.1. Discussion of e-Learning Tools and Application Used

The results shows that synchronous e-Learning tools are the least widely used in the Palestinian universities, when compared with asynchronous tools. This is because the infrastructure is not prepared to exchange effectively video or voice synchronously, or to use synchronized e-Learning tools which need the high-speed Internet and wide range of bandwidth. And that's what did not available in the Palestinian case, due to the weakness of the physical possibilities and capabilities, and the restrictions imposed by the Israeli occupation. These challenges and obstacles have been discussed in depth in previous chapters.

5.3.2. Discussion of the Readiness of Infrastructure

Many Palestinian universities have specialized e-Learning centers, and their laboratories equipped with computers which linked by a networks. And most of their classrooms were serviced by Wi-Fi signals. Furthermore, most of these universities are using e-Learning platforms based on Learning Management System such as ‘Moodle’ which allows control on both individual users and contents. That's what makes these universities able to exploit some of e-Learning tools successfully, And thus, that reflected on the specialists belief that their universities are qualified to completely experience a successful e-Learning at the present time in these universities.

5.3.3. Discussion of e-Learning Concepts According to Specialists

Universities differ in their definition of e-Learning as a concept, each of which defined it according to its usage internally. But all universities agreed on the concept of employing internet and emerging technologies in the educational process which is consistent with the definition of Hedge and Haward (2004).

5.3.4. Discussion of Challenges of e-Learning Acceptance

The results indicate that there are many factors posed a challenges facing e-Learning implementation and acceptance from the viewpoint of specialists in Palestinian universities. These factors related to e-Learning functionality and effectiveness, users traits and emotions, and institutional interventions. All of these factors forms the main determinants of perceived usefulness and perceived ease of use, which consistent with Venkatesh and Bala (2008) study and with the factors that have been tested in the research framework.

Furthermore, each of these factors need to practical actions to reduce the negative impact on the lecturers, as specialists confirmed. For example, anxiety from the use of any technology and the lack of experience in the field of e-Learning usage, beside the weakness of self-efficacy in dealing with computer, will increase the fear of failure, and here comes the role of training, and the characteristics of the design of e-Learning tools which must be free of time and effort as much as possible, to overcome these challenges. Most of these factors were tested in this study by using a questionnaire tool, its results were discussed previously.

5.3.5. Discussion of Culture of Change toward e-Learning

e-Learning is still voluntarily in Palestinian universities, so these universities are seeking to adopt incentive and motivation systems, or following a specific strategies to promote a culture of change toward e-Learning acceptance. But, these strategies are still limited to achieve the desired goals in some of these universities as e-Learning specialists recognized.

5.3.6. Discussion of Institution Support and Organizational Interventions to Ensure e-Learning Acceptance

It is clear from the results, that most universities committed to supporting the application and acceptance of e-learning in different ways, including formal or informal, due to their conviction of the importance of employment emerging technology in the educational process, because of the gap due to the huge technological advances that easy access to knowledge at any time.

5.4- Summary

The discussion results in this chapter appear that the role of institutional interventions are very important in achieving high level of e-Learning acceptance among lecturers. In addition, whenever the speed of

Internet be higher, and the more hours using a computer and Internet by lecturers, it will enhance their e-Learning acceptance.

In addition, the results show that environmental factors are one of the more important things that occupy the attention of lecturers and achieve their satisfaction particularly in Palestinian universities. And therefore which is reflected positively on their intention to use e-Learning.

Furthermore, most of hypotheses were supported. This indicates that all results are logical and can be adopted when compared with previous studies.

In light of this discussions, a later chapter will present the research recommendations, the research contributions and limitations, and the suggestions about future studies.

Chapter Six

Conclusion and Recommendations

6.1- Overview

This chapter summarizes the research results and presents the conclusion. It also presents the recommendations that are based on the research findings in order to develop and adopt e-Learning system in Palestinian universities. Besides, this chapter discusses the research contribution and the suggestions of conducting future studies.

6.2- Conclusions

The study introduced a comprehensive framework for e-Learning acceptance after the investigation of the factors that affecting this technology acceptance by lecturers at Palestinian universities. In addition, to determining the reality of e-Learning in universities from the perspective of specialists in this field.

Research framework was conceptualized via reviewing related literature and experts opinions in the design process. The research framework focuses on the critical factors based on Technology Acceptance Model3 (TAM3), which then integrated with intervention and environmental factors.

Mixed methods quantitative and qualitative were used to answer the research questions and to test hypotheses. Quantitative data were related to the factors that influence e-Learning acceptance collected via a survey which was distributed to a random sample (n=352) of lecturers at various universities in Palestine. The researcher retrieved 305 responces with a response rate of 86.6%.

Furthermore, a qualitative data which explores the status of e-Learning system and its applications, tools, infrastructure obstacles, challenges, and some lecturer behavior toward the system adoption, were derived by an exploratory in depth semi-structured interviews with IT and e-Learning specialists in Palestinian universities.

This study covers twelve universities which are Islamic, Al-Azhar, Hebron, Bethlehem, Birzeit, Polytechnic, Arab-American, An-Najah, Al-Quds, Kadoori, Al-Quds Open University, and Al-Aqsa, where distributed in West-Bank and Gaza strip

The research questionnaire was collected, then its variables were coded and defined in to the (SPSS v22) program by which various statistical analysis tools such as frequency, means, percentages, linear regression, Pearson correlation, Stepwise test, t-test, ANOVA test, LSD, and PROCESS, were employed in order to investigate factors influencing e-Learning technology adoption in those universities.

Survey tool results determines that all investigated factors in the model including interventions and environmental factors were supported, excluding the moderation factors (voluntariness and experience). Moreover, the results indicate that perceived usefulness, perceived ease of use, and perceived satisfaction are the main significant predictors that directly influencing intention to use e-Learning technology (Adjusted R^2=0.544); as well as computer self-efficacy, computer anxiety, perceived enjoyment, job relevance, and multimedia instruction are the most significant predictors that indirectly affect intention to use e-Learning technology. These factors totally explain 63% of the variation on intention to use e-Learning technology (Adjusted R^2=0.630), where as perceived usefulness is the most predictor that explain 45.2% of the variation on intention to use e-Learning technology (R^2=0.452).

And also, interview results shows that most of the Palestinians universities management committed to support e-Learning system adoption, motivate their staff to use e-Learning, provide appropriate e-Learning physical resources, and provide adequate financial support for the implementation of e-Learning system. In addition, the results shows that asynchronous e-Learning tools are the most widely used in the Palestinian universities, which used voluntary in most cases. And more, the results appeared that 58% of Palestinian universities established locally specialized e-Learning centers or units, and 50% of Palestinian universities are ready to experience e-Learning with a high success rate within the available resources at the present time. Hence most universities argued that ICT need to develop and to provide it with a protection system, furthermore need to improve the internet.

Based on the research findings, Palestinian universities should work on their enhancing operational processes, developing e-Learning infrastructure, introducing services with high quality, overcoming lecturers anxiety from using a computer and enhancing their self-efficacy in dealing with new technology, and coordinating with other entities such as government, ICT companies, and offices transfer software programs; according to new strategies to be formed for these purposes.

6.3- Recommendations

Palestinian universities need more efforts in different areas to develop and spread e-Learning technology among their staff. Universities should work on many fields including formulating new strategies, developing the operational process, introducing e-Learning system with high quality, and promoting ICT equipments and tools in order to enhance e-Learning acceptance by lecturers. These fields discussed as follows:

- **Formulating e-Learning Strategies**

According to the research results, the Palestinian universities lacked clear strategies to adopt e-Learning technology as their specialists mentioned, and most recognize the weakness in their capabilities to overcome all implementation challenges in the absence of clear policies set by the universities to adopt e-Learning system.

So, formulating e-Learning strategies are the most important issue for decision makers in these universities if they want to understand the university position in order to reduce the gap between what exist and the new technology trends in e-Learning field.

Formulation strategy needs to diagnose the reality based on the Palestinian situation and the possibilities available, and then examine the internal and external factors that influence e-Learning technology acceptance. The external factors related to opportunities and threats which include governmental regulations, the capabilities of ICT sector, economic scale, environmental issues, etc.; while internal factors related to strengths and weaknesses which includes organizational and management support, technical staff, design characteristics, multimedia instructions, system quality, job relevance, university policies, lecturers perceptions and their experiences in e-Learning field, system effectiveness and its interactivity, infrastructure facilities, etc.

When determining a successful e-Learning strategies universities must take into account the following:

- E-Learning strategic plan must be compatible with the strategic plan of the University.

- The involvement of lecturers and IT specialists in the preparation of e-Learning strategies.

- Setting up or restructuring a specialized e-Learning unit or center, or enhance the role of unit or center that really exist in the preparation of e-Learning strategies.

- E-Learning strategies should focus on the long term objectives that include promote a culture of change within the university, in order to enhance the acceptance of new technology.

It is an important to establish enforcement system that protect the process of implementing e-Learning strategies in Palestine.

- **Developing the Operational Process of e-Learning**

Operational processes are one of the most important frequently used processes in the universities or any other organizations. They also ensure a standardized approach to all procedures of activities performed. Hence, e-Learning technology needs effort from all organization levels. So, operation managers should communicate and cooperate with top level management to achieve the following issues:

1. Universities should promote their role to achieve high level of e-Learning adoption through involving lecturers and students in the development process to decline the resistance to change when applying new technology, enhancing the interactive learning activities, utilizing ease of use applications and tools, showing the usefulness of e-learning and its positive outcomes in a manner that stimulates the use after presenting its result demonstrability.

2. Universities should encourage their lecturers to more use synchronous e-Learning tools which can greatly enhance meaningful interactions in

distance courses and increase group collaboration. These services have the lowest adoption in Palestine according to specialist.

3. IT centers in the universities should cooperate with internet companies in Palestine to provide lecturers with special offers in order to increase the use of internet. The study demonstrated that when the number of hours of internet usage by lecturers per day has increased, it will enhance their computer self-efficacy and playfulness, reduce their new technology anxiety, create a positive impression toward management support and external control that related to the availability resources necessary to use the system, and thus promote their intention to use e-Learning.

4. Universities should increase the internet speed which would raise the lecturers playfulness toward using a computer, thus enhancing their perceived ease of use the e-Learning system, and thus achieving positive behavior intention to use this system.

5. Universities should train their lecturers to use the computer and its programs effectively in order to encourage them to use a computer more hours per day when performing specific tasks or jobs. This would reduce their computer anxiety, increase their computer self-efficacy, enhance their perceived enjoyment in using a specific system, enhance their believes that organizational and technical resources exist to support the use e-Learning system, and consolidate their believes that the e-Learning technology is applicable to their job.

6. Universities management should committed to a successful implementation and use of e-Learning in the universities which are considered to be the weakest in the field of management support, according to the viewpoint of lecturers and specialist in these universities.

7. Universities should ensure that lecturers received an adequate training to handle the organizational and technical resources for use in e-Learning at universities which are considered to be the weakest in the field of organizational support, according to the viewpoint of lecturers.

8. Universities should mitigate the invoke passive reaction of the lecturers toward e-Learning in the universities which are considered to be the lowest in the field of training.

9. Universities should change the intention of lecturers toward the actual use of e-Learning in the universities which have the lowest intention to adopt e-Learning system.

10. Universities should reduce the level of actual effort required to accomplish specific tasks when utilizing e-Learning tools or applications according to lecturers comparisons between the e-Learning system and traditional system.

11. Universities should develop a standardized evaluation system related to e-Learning usage in order to feedback lecturers with the benefits

resulting from the use of e-Learning and its positive impact on their job performance; especially in the universities which have been arranged in the lowest of perceived usefulness according to their lecturers perceptions.

12. Universities should coordinate with experts in the field of e-Learning to make lecturers listen to success stories, especially the elderly lecturers. In this way, lecturers can be aware of the usefulness of e-Learning.

13. Universities should encourage lecturers who have experience at the university more than fifteen years to use various e-Learning tools; those level of lecturers have the lowest confirmation about the output quality of the system, e-Learning effectiveness, job relevance, and self-efficacy in using a computer.

14. Universities should spread e-Learning tools among the lecturers especially who are specialized in the field of natural sciences, and then encourage them to use those tools through good motivation and incentive system, train them better, improve the quality of the system and its outputs, and then provide them with adequate management support. In this way, lecturers who are specialized in natural sciences can recognize the usefulness of e-Learning technology, as well as who specialized in Human sciences. Results shows that lecturers who are specialized in natural sciences have lower intention to use e-Learning system.

15. Universities should establish a legal, enforcement, and legislative system that enforces lecturers to carry out all instructions and laws which related to e-Learning system. Incentives policy should be implemented.

- **Introducing e-Learning system with high quality**

Universities should answer the question that is how they monitor existing e-Learning provision, and how develop future provision in an efficient manner?. So, they must pay more attention to technical issues in order to introduce high quality e-Learning system. The results indicate that ease of use, job relevance, output quality, objective usability, system quality, interactive learning activities, e-Learning effectiveness, and multimedia instructions are affecting the e-Learning technology acceptance.

Universities able to take these findings into account on creating or developing e-Learning system as follows:

1. Universities should demonstrate to the lecturers that the e-Learning tools available can be applied and used easily, and the usage of e-Learning in job is important and pertinent to the various job-related tasks; especially in universities that lecturers are specialized in natural sciences, or who experiences more than fifteen years.

2. Universities should develop the e-Learning system in the way that enable lecturers to perform their job well, especially in the universities

that lecturers are specialized in natural sciences, and lecturers who experiences more than fifteen years. There are additional things that could be taken into account to achieve this goal such as:

- Tasks should not require more efforts and time to be performed.
- Lecturers must be able to explain the benefits of using e-Learning.
- The satisfaction of e-Learning users must be increased.
- Interactive between the parties of the educational process must rise.
- The evaluation results of lecturers performance according to their realizations in e-Learning usage must be advanced.

3. Lecturers should be well trained and motivated, to ensure that they have enough skills and incentives to use e-Learning. So, universities should have a positive influence on trainees' attitudes to increase their motivation to engage in training, which enable them to facilitate technology acceptance, to overcome technical difficulties, and to access to technical support quickly; especially in the universities that lecturers have the least perceptions toward the feasibility of training in their universities.

4. Lecturers when using e-Learning tools, in the actual situation they have to do their normal job plus e-Learning; so structures should be

developed to make sure that this kind or work is similarly appreciated in academic environment as teaching.

5. Developing a specialized courses that deal with basic knowledge in the field of e-Learning technology and didactics. So, universities should implement a quality assurance system for course development.

6. Universities should focus on technical issues that are closely related to the quality of any system which are:

   - Flexibility: e-Learning tools to be effective needs to be flexible, that is, it must be able to accommodate a certain amount of variation regarding the requirements of the supported education process. So, universities should work on operational efficiency, organizational nimbleness, and e-Learning functions and contents. Insufficient flexibility limits e-Learning usage and may lead lecturers to use only traditional learning system.

   - Ease of use: where universities must adapt the e-Learning applications in a way makes it free effort, and where universities should develop and promote their e-Learning courses contents, tools, and applications; beside developing interactive learning activities, multimedia instructions, and training programs.

   - Integration: where universities should work on relationship between e-Learning data, tools functionality, and the availability of knowledgeable staff who qualified in e-Learning usage.

- Response time: where universities should achieve rapid response time in the field of management, organizational, and technical support.

- Reliability: where universities should ensure that e-Learning applications perform their required functions under different occasions or conditions.

- Functionality: where universities should employ suited e-Learning tools which are able to accomplish what is needed in the curriculum.

- Accessibility: where universities should design e-Learning services, devices, and applications that are usable by their lecturers and students.

- Stability: where universities should maintain the output of e-Learning system by standardizing its procedures, evaluation methods, and functions; and by backing up their database to be retrieved in case of emergency.

7. Universities should offer trial applications, trial e-Learning courses, tutorial videos to familiarize lecturers with e-Learning technology. Especially in the universities that lecturers have the lowest satisfaction

from the quality and the effectiveness of e-Learning system in their universities. So, this way will enhance the lecturers intentions at these universities to use the e-Learning.

- **Promoting ICT Efficiency in Educational Process**

The majority of new and existing e-Learning tasks and jobs now require the use of ICT which considered now to be an important aspect of online education. ICT is essentially a set of tools which lecturers could employs to achieve the objectives related to e-Learning. So, ICT needs to be discussed in all discussions of education policy. Additionally universities should take several measures to promote ICT prospects inside or outside their campuses through the following:

1. Universities should cooperate with 'Paltel' company (Palestinian Telecommunication Company), and Ministry of Telecommunication and Information Technology in order to speed up internet connections. According to the study, the greater the internet speed, also increased computer playfulness which will affect the lecturers perceived ease of use the e-Learning.

2. IT and e-Learning centre at universities should outsourcing e-Learning system development, in order to improve the output quality and the system quality, to reduce the system implementation time, and to reduce cost.

3. Universities should utilize security system to protect their database servers from viruses and hackers as specialist at Islamic university mentioned.

Specialized ICT supported services as ease of use any application will provide opportunities to build a successful e-Learning system.

- **Other Recommendations**

1. The Ministry of Education and Higher Education should redefinition of e-Learning term to suit the Palestinian case, and should consider the use of e-Learning within the parameters on which they rated the performance of those universities. This will encourage the universities to adopt e-Learning system.

2. Universities should recruit lecturers who skilled in using computer and its related technologies, and makes the behavior intention to use e-Learning one of the basic criteria for the selection of new employee. According to research findings, lecturers who have experience at the university less than five years have the higher confirmation about the output quality of the system, e-Learning effectiveness, and job relevance than who have experience from 6-10 or more than 15 years, because they are the closest to technological development which has become one of the requirements of university life. So, those lecturers category could be considered as the best target for recruitment.

3. Universities should not limit e-Learning tools for education, but also employ its privileges and features to assess student achievement.

4. Universities must allocate part of their budgets in order to provide e-Learning implementation with adequate financial support.

5. Universities must rely clear policies that ensure e-Learning adoption. Some specialists in the universities who were interviewed, pointed to the lack of clarity policies at their universities, while others stressed the absence of such policies that support the adoption of e-Learning in universities.

6.4- Research Contribution

The findings of this study are great importance to the following:

- Researchers who interested in developing a framework or model for e-Learning acceptance;

- Researchers who interested in the impact of interventions or environmental factors in achieving the percieved usefulness and ease of use of e-Learning; interventions or environmental factors in this study have been tested and proven its significance,

- Universities which concerned with application and adoption of e-Learning successfully,

- Universities' strategists who seek to develop a long and short-term plans,

- Ministry of Education and Higher Education on commitment to provide logistical and material support, and in the enactment of laws, regulations and public policies for the promoting adoption of e-Learning systems in different educational institutions,

- ICT and Telecommunications sectors on promoting a culture of technology use,

- And private IT companies on developing e-Learning requirements of tools, equipments, and applications.

Furthermore, this study is considered to be a significant contribution in many areas, these contributions are:

1. Give a clear assessment for the reality of e-Learning systems in Palestinian universities.

2. Introduce a comprehensive framework assists greatly in the adoption of e-Learning by lecturers.

3. Understand the universities' lecturers behaviors and perceptions toward e-Learning usage.

4. Determined the internal believes, social influence processes, cognitive instrumentals processes, anchor, and adjustment, in addition to interventions, and environmental factors that influencing e-Learning adoption in Palestinian universities.

5. Confirming that Perceived Usefulness, Perceived Ease of Use, Perceived Satisfaction, Perceived Enjoyment, Job Relevance, Computer Self-Efficacy, Computer Anxiety, and Multimedia Instructions are most significant factors affecting Behavioral Intention to use e-Learning system in Palestine.

6. Document current usage of e-Learning tools and applications, computer, and Internet by lecturers in Palestinian universities.

7. Help Palestinian universities in formulating the suited strategies which will develop the rate of e-Learning usage.

8. Present a comparison between the Palestinian universities in terms of the extent their e-Learning acceptance and the impressions of their lecturers, to be one benchmark for the others.

9. Encourage telecommunications companies to improve the infrastructure of the Internet, which would promote a culture of the use of technology in Palestine.

6.5- Research Limitations

This study limited its scope to examining the factors influencing the e-Learning acceptance based on TAM3 model which integrated with interventional and environmental factors. The study population was limited to the lecturers of all universities in Palestine. In consequence, the result of the study may not reflect the general use of information technology in higher education as such, and it may not reflect the e-Learning acceptance by students or by lecturers of university colleges or community colleges in Palestine.

6.6- Future Research

The following topics could be studied in the future, which may contribute on developing e-Learning and its usage in Palestine:

1. Studying the factors that affecting e-Learning acceptance by students.

2. Studying the possibility of delivering mobile learning materials or interactive content in Palestinian universities. Mobile phones will be leveraged to provide, use, access, or share content at the moment of need.

3. Studying the advantages and disadvantages of all e-Learning tools whether used or not in Palestinian universities, in order to guide the universities to use the optimal applications or tools suited to their situations and their lecturers capabilities.

4. Studying the external factors that affecting e-Learning Quality, e-Learning Effectiveness, and Interactive Learning Activities which promote the users satisfaction, and also increase their behavioral intention toward e-Learning actual use.

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Appendices

Appendix A: Figures

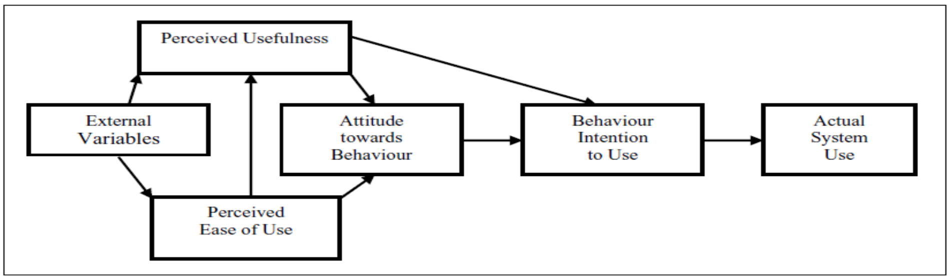

Figure 1: Original Technology Acceptance Model (TAM), (Phua et al., 2012)

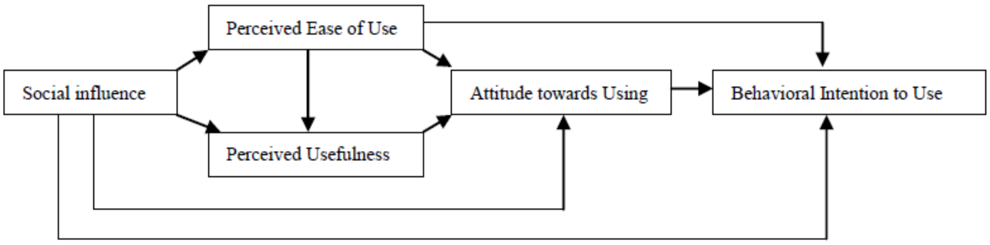

Figure 2: Conceptual model of Farahat (2012) research, (Farahat, 2012)

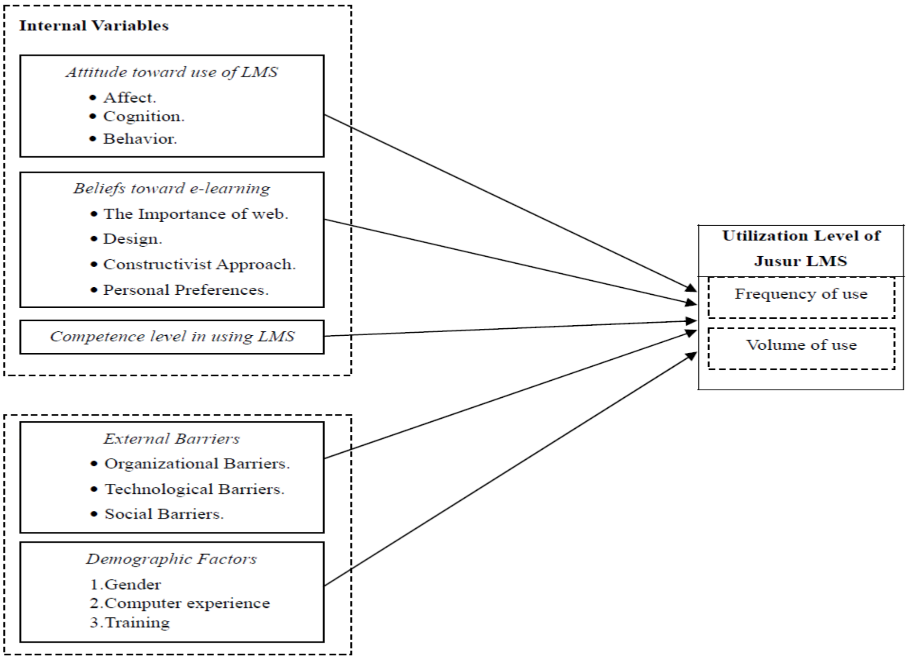

Figure 3: Utilization of Jusur LMS framework, (Asiri et al., 2012)

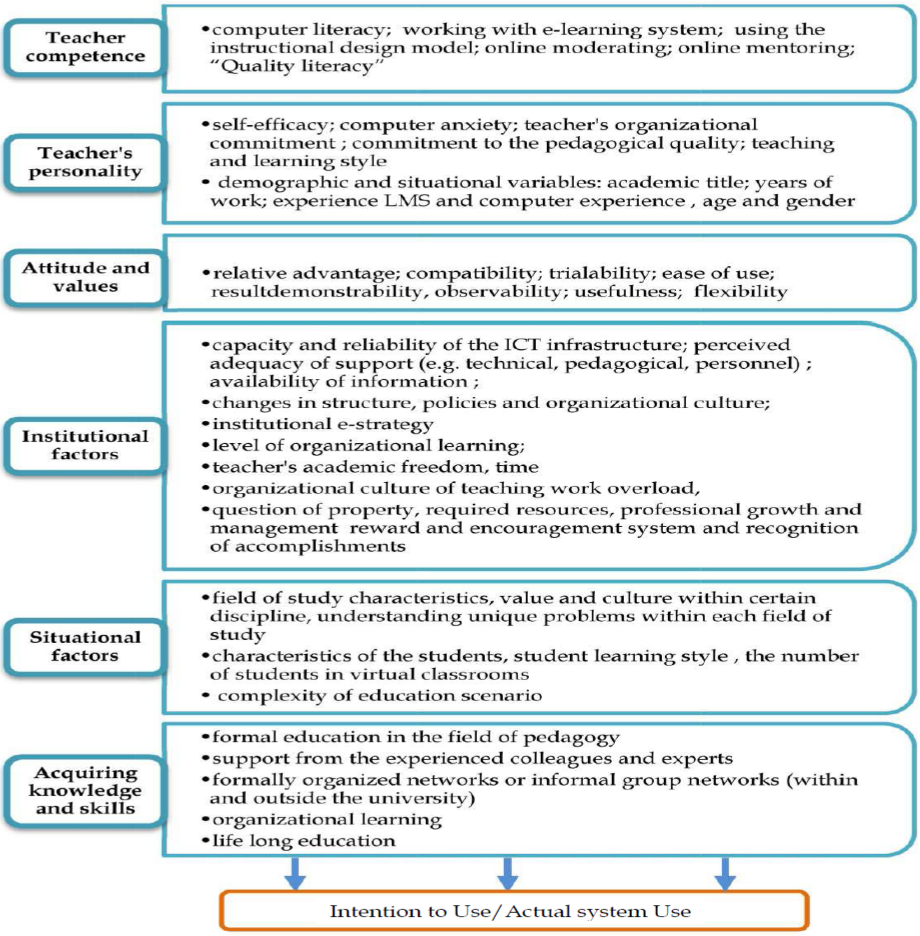

Figure 4: Factors that influence academic teacher's acceptance of e-learning technology, (Babić, 2012)

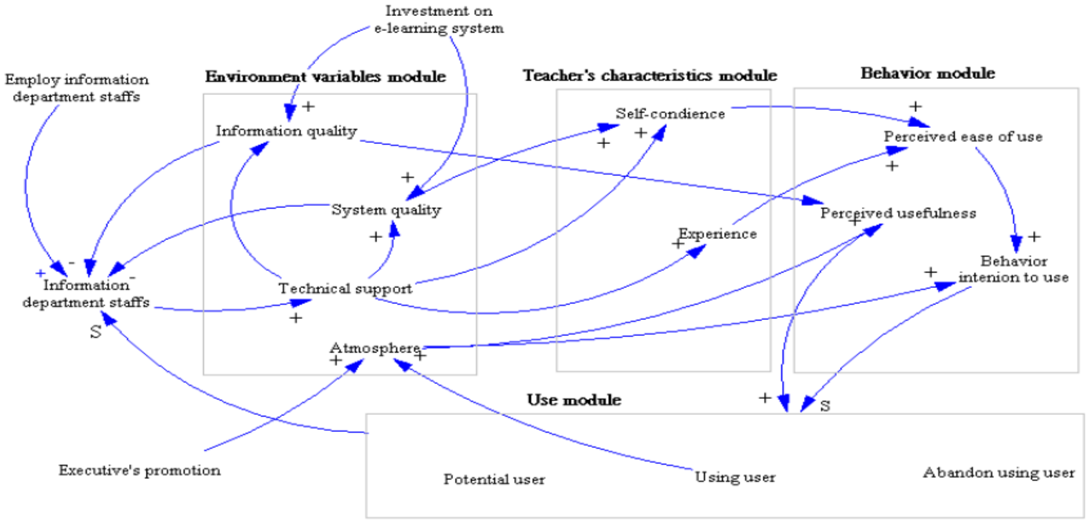

Figure 5: Causal loop diagram illustrated teacher using e-learning system, (Wang et al., 2009)

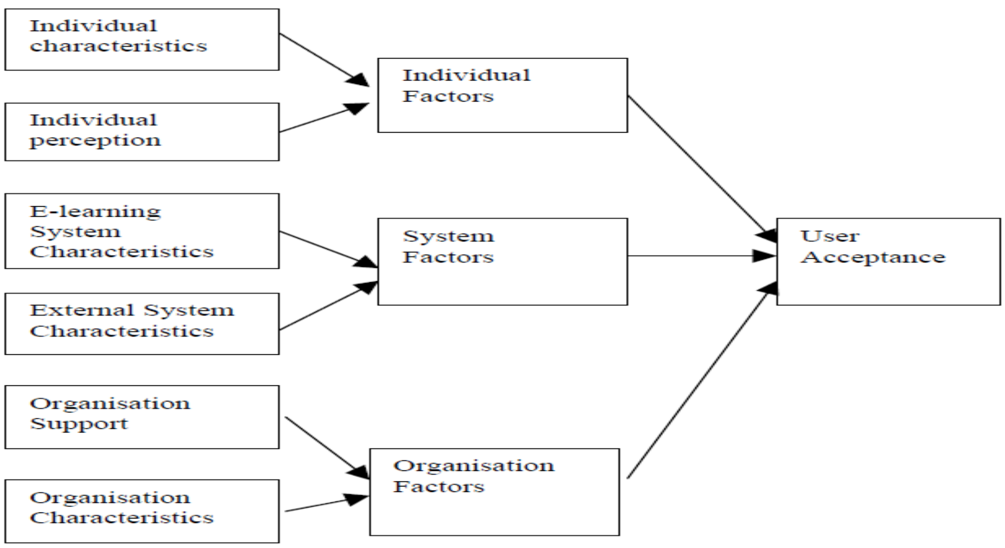

Figure 6: Framework for user acceptance of e-Learning technology, (Nanayakkara et al., 2005)

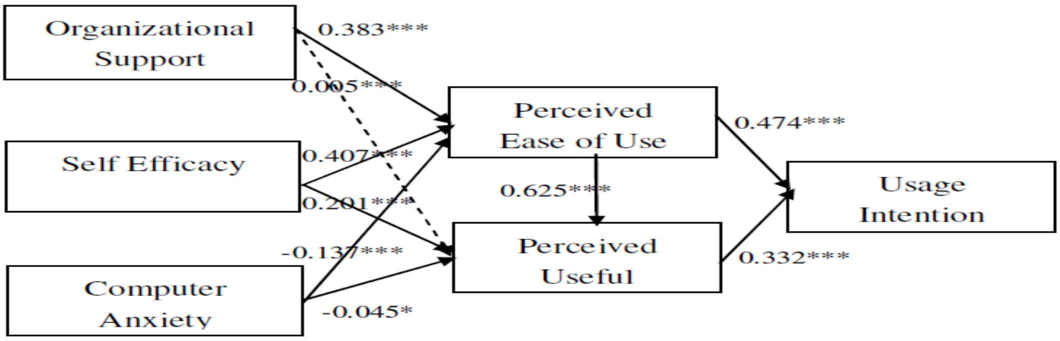

Figure 7: Chou proposed model. (Chuo et al., 2011)

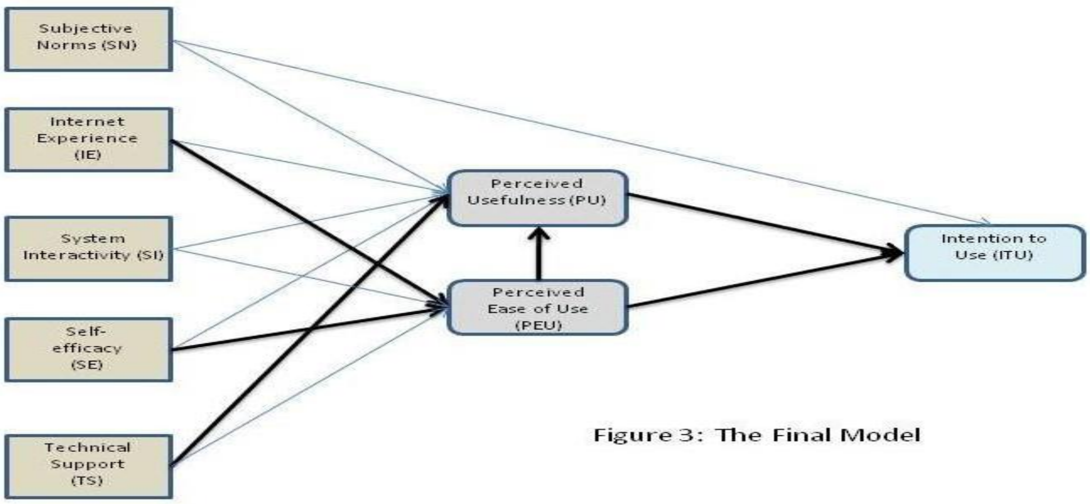

Figure 8. Abbad final model, (Abbad et al., 2009)

Appendix B: Tables

Table 1: Experts and Arbitrators Who Reviewed the Questionnaire

Name	Position	University Name
Dr. Baker Abdalhaq	Teaching Staff at Computerized Information Systems department, and member of e-Learning commity	An-Najah National University
Dr. Saeda Affouneh	Director of e-Learning Center	An-Najah National University
Dr. Yahia Saleh	Teaching Staff at Industrial Engineering, and Instructor of Statistics	An-Najah National University
Dr. Rabeh Morrar	Head of Economics Department at Faculty of Economics and Administrative Sciences	An-Najah National University
Dr. Wael Abu Saleh	Teaching Staff at Arabic Language and Literature Department at Faculty of Arts	An-Najah National University
Dr. Nafeth Abu Baker	Teaching Staff at Accounting Department at Faculty of Economics and Administrative Sciences, and Instructor of Research Methods	An-Najah National University
Dr. Omar Abu Eidah	Teaching Staff at Economics Department at Faculty of Administrative and Economics Sciences	Al-Qudes Open University
Mr. Faiz Abdelhafid	Teaching Staff at Faculty of Educational Sciences and Teachers' Training, and member in e-Learning Center	An-Najah National University
Mr. Ahmed Al-Sayyid	Teaching Staff at Geography Department at Faculty of Education, and expert in statistical analysis	Al-Qudes Open University

Mr. Musab Miari	Director of e-Learning system 'Moodle'	An-Najah National University

Table 2: e-Learning and IT Specialist who were Interviewed

University	Specialist	Current Position
Islamic	Dr. Mohammed Alhanjouri	Director of Excellence and e-Learning Center
Al-Azhar	Osama Albohise	Information Technology Unit
Hebron	Mohammad Moreb	e-Learning Unit
Bethlehem	Philip Daoud	Assistant Vice President for Information Technology Services
Birzeit	Hanna Kreitem	Section Head | Service and Knowledge Management Section
Polytechnic	Meera Salaimeh	e-Learning Supervisor/ IT Center of Excellence
American	Mohammad Hannon	Director of IT Unit
An-Najah	Dr.Saeda Affouneh Musab Miari	Director of e-Learning Center Responsible for Moodle system
Al-Quds	Ali Arekat	Head of e-Learning Unit
Kadoori	Ahmad Rabaya	e-Learning Center
Al-Aqsa	Ramzi Atef Matar	E-Portal Department

Table 3: Using e-Learning system makes my lifestyle easier

Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	2	0.7	0.7
Disagree	27	8.9	9.5
Neutral	32	10.5	20.0
Agree	163	53.4	73.4
Strongly Agree	81	26.6	100.0
Total	305	100.0	

Table 4: Using e-Learning system improves my performance in my job

Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	1	0.3	0.3
Disagree	22	7.2	7.5
Neutral	45	14.8	22.3
Agree	156	51.1	73.4
Strongly Agree	81	26.6	100.0
Total	305	100.0	

Table 5: I believe e-Learning system is a useful learning tool			
Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	3	1.0	1.0
Disagree	7	2.3	3.3
Neutral	19	6.2	9.5
Agree	162	53.1	62.6
Strongly Agree	114	37.4	100.0
Total	305	100.0	

Table 6: My interaction with e-Learning system is clear and understandable			
Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	2	0.7	0.7
Disagree	15	4.9	5.6
Neutral	30	9.8	15.4
Agree	175	57.4	72.8
Strongly Agree	83	27.2	100.0
Total	305	100.0	

Table 7: Interacting with e-Learning system does not require a lot of my mental effort			
Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	12	3.9	3.9
Disagree	84	27.5	31.5
Neutral	46	15.1	46.6
Agree	121	39.7	86.2
Strongly Agree	42	13.8	100.0
Total	305	100.0	

Table 8: I find e-Learning system easy to use			
Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	4	1.3	1.3
Disagree	33	10.8	12.1
Neutral	46	15.1	27.2

Agree	151	49.5	76.7
Strongly Agree	71	23.3	100.0
Total	305	100.0	

Table 9: Assuming I had access to e-Learning system, I intend to use it

Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	0	0.0	0.0
Disagree	16	5.2	5.2
Neutral	23	7.5	12.8
Agree	162	53.1	65.9
Strongly Agree	104	34.1	100.0
Total	305	100.0	

Table 10: If significant barriers did not exist, I would use e-Learning system

Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	0	0.0	0.0
Disagree	13	4.3	4.3
Neutral	28	9.2	13.4
Agree	177	58.0	71.5
Strongly Agree	87	28.5	100.0
Total	305	100.0	

Table 11: I'm willing to go voluntarily to experience e-Learning system

Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	4	1.3	1.3
Disagree	10	3.3	4.6
Neutral	23	7.5	12.1
Agree	151	49.5	61.6
Strongly Agree	117	38.4	100.0
Total	305	100.0	

Table 12: People who are important to me think that I should use e-Learning system

Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	2	0.7	0.7
Disagree	17	5.6	6.2
Neutral	84	27.5	33.8
Agree	149	48.9	82.6
Strongly Agree	53	17.4	100.0
Total	305	100.0	

Table 13: My decision to adopt e-Learning system influenced by my friends

	Frequency	Percent	Cumulative Percent
Strongly Disagree	43	14.1	14.1
Disagree	135	44.3	58.4
Neutral	60	19.7	78.0
Agree	57	18.7	96.7
Strongly Agree	10	3.3	100.0
Total	305	100.0	

Table 14: My decision to adopt e-Learning system influenced by the viewpoint of students to this system

Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	18	5.9	5.9
Disagree	84	27.5	33.4
Neutral	45	14.8	48.2
Agree	130	42.6	90.8
Strongly Agree	28	9.2	100.0
Total	305	100.0	

Table 15: My colleagues who influence my behavior think that I should use e-Learning system

Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	13	4.3	4.3
Disagree	55	18.0	22.3
Neutral	136	44.6	66.9
Agree	89	29.2	96.1
Strongly Agree	12	3.9	100.0
Total	305	100.0	

Table 16: Lecturers in my university who use e-Learning system have more prestige than those who do not

Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	19	6.2	6.2
Disagree	68	22.3	28.5
Neutral	92	30.2	58.7
Agree	99	32.5	91.1
Strongly Agree	27	8.9	100.0
Total	305	100.0	

Table 17: Lecturers in my university who use e-Learning system have a high profile that influence their promotion			
Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	14	4.6	4.6
Disagree	72	23.6	28.2
Neutral	108	35.4	63.6
Agree	88	28.9	92.5
Strongly Agree	23	7.5	100.0
Total	305	100.0	

Table 18: Lecturers obtain a financial incentives when they use e-Learning system			
Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	40	13.1	13.1
Disagree	115	37.7	50.8
Neutral	72	23.6	74.4
Agree	64	21.0	95.4
Strongly Agree	14	4.6	100.0
Total	305	100.0	

Table 19: In my job, usage of e-Learning system is important			
Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	1	0.3	0.3
Disagree	15	4.9	5.2
Neutral	33	10.8	16.1
Agree	178	58.4	74.4
Strongly Agree	78	25.6	100.0
Total	305	100.0	

Table 20: The use of e-Learning system is pertinent to my various job-related tasks			
Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	2	0.7	0.7
Disagree	19	6.2	6.9
Neutral	56	18.4	25.2
Agree	166	54.4	79.7
Strongly Agree	62	20.3	100.0
Total	305	100.0	

Table 21: The quality of the output I get from e-Learning system is high			
Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	1	0.3	0.3
Disagree	26	8.5	8.9
Neutral	69	22.6	31.5
Agree	169	55.4	86.9
Strongly Agree	40	13.1	100.0
Total	305	100.0	

Table 22: I expect the quality of future e-Learning system to be high			
Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	4	1.3	1.3
Disagree	13	4.3	5.6
Neutral	36	11.8	17.4
Agree	173	56.7	74.1
Strongly Agree	79	25.9	100.0
Total	305	100.0	

Table 23: I believe I could communicate to others the consequences of using e-Learning system			
Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	1	0.3	0.3
Disagree	16	5.2	5.6
Neutral	38	12.5	18.0
Agree	187	61.3	79.3
Strongly Agree	63	20.7	100.0
Total	305	100.0	

Table 24: The results of using e-Learning system are apparent to me			
Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	0	0.0	0.0
Disagree	20	6.6	6.6
Neutral	40	13.1	19.7
Agree	180	59.0	78.7
Strongly Agree	65	21.3	100.0
Total	305	100.0	

Table 25: I feel confident finding information in e-Learning system			
Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	0	0.0	0.0
Disagree	11	3.6	3.6
Neutral	35	11.5	15.1
Agree	197	64.6	79.7
Strongly Agree	62	20.3	100.0
Total	305	100.0	

Table 26: I have the necessary skills for using an e-Learning system			
Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	1	0.3	0.3
Disagree	12	3.9	4.3
Neutral	29	9.5	13.8
Agree	170	55.7	69.5
Strongly Agree	93	30.5	100.0
Total	305	100.0	

Table 27: I could complete the job using e-Learning system applications, if someone showed me how to do it first			
Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	4	1.3	1.3
Disagree	7	2.3	3.6
Neutral	29	9.5	13.1
Agree	169	55.4	68.5
Strongly Agree	96	31.5	100.0
Total	305	100.0	

Table 28: I have control over using the e-Learning system			
Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	0	0.0	0.0
Disagree	15	4.9	4.9
Neutral	39	12.8	17.7
Agree	168	55.1	72.8
Strongly Agree	83	27.2	100.0
Total	305	100.0	

Table 29: I have the resources, opportunities and knowledge necessary to use e-Learning system			
Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	2	0.7	0.7
Disagree	18	5.9	6.6
Neutral	39	12.8	19.3
Agree	158	51.8	71.1
Strongly Agree	88	28.9	100.0
Total	305	100.0	

Table 30: e-Learning system is compatible with other systems I use			
Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	2	0.7	0.7
Disagree	14	4.6	5.2
Neutral	67	22.0	27.2
Agree	157	51.5	78.7
Strongly Agree	65	21.3	100.0
Total	305	100.0	

Table 31: Computers do not scare me at all			
Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	0	0.0	0.0
Disagree	7	2.3	2.3
Neutral	7	2.3	4.6
Agree	88	28.9	33.4
Strongly Agree	203	66.6	100.0
Total	305	100.0	

Table 32: Working with a computer not makes me nervous			
Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	1	0.3	0.3
Disagree	11	3.6	3.9
Neutral	21	6.9	10.8
Agree	104	34.1	44.9
Strongly Agree	168	55.1	100.0
Total	305	100.0	

Table 33: I haven't avoided computers because they are not intimidating to me

Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	0	0.0	0.0
Disagree	4	1.3	1.3
Neutral	8	2.6	3.9
Agree	101	33.1	37.0
Strongly Agree	192	63.0	100.0
Total	305	100.0	

Table 34: I feel computers are necessary tools in both educational and work settings

Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	2	0.7	0.7
Disagree	2	0.7	1.3
Neutral	8	2.6	3.9
Agree	84	27.5	31.5
Strongly Agree	209	68.5	100.0
Total	305	100.0	

Table 35: I would be creative when using a computer

Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	0	0.0	0.0
Disagree	6	2.0	2.0
Neutral	26	8.5	10.5
Agree	153	50.2	60.7
Strongly Agree	120	39.3	100.0
Total	305	100.0	

Table 36: I wouldn't be bored when using a computer

Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	0	0.0	0.0
Disagree	7	2.3	2.3
Neutral	23	7.5	9.8
Agree	139	45.6	55.4
Strongly Agree	136	44.6	100.0
Total	305	100.0	

Table 37: I would be playful when using a computer

Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	1	0.3	0.3
Disagree	12	3.9	4.3
Neutral	63	20.7	24.9
Agree	126	41.3	66.2
Strongly Agree	103	33.8	100.0
Total	305	100.0	

Table 38: I would be flexible when using a computer

Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	1	0.3	0.3
Disagree	6	2.0	2.3
Neutral	39	12.8	15.1
Agree	140	45.9	61.0
Strongly Agree	119	39.0	100.0
Total	305	100.0	

Table 39: I find using e-Learning system to be enjoyable

Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	3	1.0	1.0
Disagree	11	3.6	4.6
Neutral	53	17.4	22.0
Agree	154	50.5	72.5
Strongly Agree	84	27.5	100.0
Total	305	100.0	

Table 40: The actual process of using multimedia in e-Learning system is pleasant

Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	2	0.7	0.7
Disagree	8	2.6	3.3
Neutral	56	18.4	21.6
Agree	148	48.5	70.2
Strongly Agree	91	29.8	100.0
Total	305	100.0	

Table 41: I have fun using e-Learning system

Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	4	1.3	1.3
Disagree	16	5.2	6.6
Neutral	98	32.1	38.7
Agree	119	39.0	77.7
Strongly Agree	68	22.3	100.0
Total	305	100.0	

Table 42: I can get the task done as scheduled when using e-Learning system

Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	0	0.0	0.0
Disagree	10	3.3	3.3
Neutral	46	15.1	18.4
Agree	174	57.0	75.4
Strongly Agree	75	24.6	100.0
Total	305	100.0	

Table 43: The tasks not require more effort to be accomplished when using e-Learning system

Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	13	4.3	4.3
Disagree	81	26.6	30.8
Neutral	57	18.7	49.5
Agree	107	35.1	84.6
Strongly Agree	47	15.4	100.0
Total	305	100.0	

Table 44: Managerial support is more effective for e-Learning system implementations

Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	2	0.7	0.7
Disagree	9	3.0	3.6
Neutral	23	7.5	11.1
Agree	154	50.5	61.6
Strongly Agree	117	38.4	100.0
Total	305	100.0	

Table 45: Direct management support are important in creating favorable perceptions toward e-Learning system			
Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	2	0.7	0.7
Disagree	5	1.6	2.3
Neutral	21	6.9	9.2
Agree	157	51.5	60.7
Strongly Agree	120	39.3	100.0
Total	305	100.0	

Table 46: The university established a senior position or positions specifically for e-Learning system management			
Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	1	0.3	0.3
Disagree	27	8.9	9.2
Neutral	52	17.0	26.2
Agree	130	42.6	68.9
Strongly Agree	95	31.1	100.0
Total	305	100.0	

Table 47: The university have appropriate policies outlining the intellectual property of course material			
Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	11	3.6	3.6
Disagree	43	14.1	17.7
Neutral	108	35.4	53.1
Agree	100	32.8	85.9
Strongly Agree	43	14.1	100.0
Total	305	100.0	

Table 48: Most of our e-Learning system technology services are supported through a centralized system			
Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	7	2.3	2.3
Disagree	24	7.9	10.2
Neutral	67	22.0	32.1
Agree	117	38.4	70.5
Strongly Agree	90	29.5	100.0
Total	305	100.0	

Table 49: The design characteristics of e-Learning system remain stable throughout the implementations process

Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	0	0.0	0.0
Disagree	27	8.9	8.9
Neutral	110	36.1	44.9
Agree	138	45.2	90.2
Strongly Agree	30	9.8	100.0
Total	305	100.0	

Table 50: e-Learning system applications and elaborations are not difficult to understand and use

Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	1	0.3	0.3
Disagree	28	9.2	9.5
Neutral	66	21.6	31.1
Agree	158	51.8	83.0
Strongly Agree	52	17.0	100.0
Total	305	100.0	

Table 51: The University provides telecommunications equipment and computer resources to use e-Learning system

Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	8	2.6	2.6
Disagree	41	13.4	16.1
Neutral	51	16.7	32.8
Agree	139	45.6	78.4
Strongly Agree	66	21.6	100.0
Total	305	100.0	

Table 52: The University support and encourage staff to use e-Learning system

Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	3	1.0	1.0
Disagree	20	6.6	7.5
Neutral	52	17.0	24.6
Agree	138	45.2	69.8
Strongly Agree	92	30.2	100.0
Total	305	100.0	

Table 53: Help is available from the university when I have a problem in using e-Learning system

Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	8	2.6	2.6
Disagree	25	8.2	10.8
Neutral	52	17.0	27.9
Agree	130	42.6	70.5
Strongly Agree	90	29.5	100.0
Total	305	100.0	

Table 54: The University provides educational seminars and interviews that help to using e-Learning system

Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	9	3.0	3.0
Disagree	21	6.9	9.8
Neutral	43	14.1	23.9
Agree	143	46.9	70.8
Strongly Agree	89	29.2	100.0
Total	305	100.0	

Table 55: The kind of training in using of e-Learning system that provided to me was complete

Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	5	1.6	1.6
Disagree	49	16.1	17.7
Neutral	84	27.5	45.2
Agree	114	37.4	82.6
Strongly Agree	53	17.4	100.0
Total	305	100.0	

Table 56: My level of understanding e-Learning system was substantially improved after going through the training program

Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	4	1.3	1.3
Disagree	35	11.5	12.8
Neutral	88	28.9	41.6
Agree	117	38.4	80.0
Strongly Agree	61	20.0	100.0
Total	305	100.0	

Table 57: The training gave me confidence in e-Learning system			
Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	5	1.6	1.6
Disagree	33	10.8	12.5
Neutral	89	29.2	41.6
Agree	125	41.0	82.6
Strongly Agree	53	17.4	100.0
Total	305	100.0	

Table 58: The trainers aided me in my understanding of e-Learning system			
Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	7	2.3	2.3
Disagree	30	9.8	12.1
Neutral	92	30.2	42.3
Agree	126	41.3	83.6
Strongly Agree	50	16.4	100.0
Total	305	100.0	

Table 59: I am satisfied with e-Learning system functions			
Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	6	2.0	2.0
Disagree	23	7.5	9.5
Neutral	80	26.2	35.7
Agree	152	49.8	85.6
Strongly Agree	44	14.4	100.0
Total	305	100.0	

Table 60: I am satisfied with e-Learning system content			
Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	6	2.0	2.0
Disagree	20	6.6	8.5
Neutral	90	29.5	38.0
Agree	145	47.5	85.6
Strongly Agree	44	14.4	100.0
Total	305	100.0	

Table 61: I am satisfied with e-Learning system interaction			
Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	13	4.3	4.3
Disagree	40	13.1	17.4
Neutral	95	31.1	48.5
Agree	124	40.7	89.2
Strongly Agree	33	10.8	100.0
Total	305	100.0	

Table 62: I would like to share my e-Learning system experience			
Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	1	0.3	0.3
Disagree	5	1.6	2.0
Neutral	56	18.4	20.3
Agree	182	59.7	80.0
Strongly Agree	61	20.0	100.0
Total	305	100.0	

Table 63: I believe e-Learning system can assist teacher-learner interaction			
Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	2	0.7	0.7
Disagree	17	5.6	6.2
Neutral	46	15.1	21.3
Agree	177	58.0	79.3
Strongly Agree	63	20.7	100.0
Total	305	100.0	

Table 64: I believe e-Learning system can assist learner-learner interaction			
Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	3	1.0	1.0
Disagree	22	7.2	8.2
Neutral	67	22.0	30.2
Agree	160	52.5	82.6
Strongly Agree	53	17.4	100.0
Total	305	100.0	

Table 65: I believe e-Learning system can assist learning efficiency

Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	2	0.7	0.7
Disagree	10	3.3	3.9
Neutral	32	10.5	14.4
Agree	176	57.7	72.1
Strongly Agree	85	27.9	100.0
Total	305	100.0	

Table 66: I believe e-Learning system can assist learning performance

Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	2	0.7	0.7
Disagree	11	3.6	4.3
Neutral	40	13.1	17.4
Agree	172	56.4	73.8
Strongly Agree	80	26.2	100.0
Total	305	100.0	

Table 67: I believe e-Learning system can assist learning motivation

Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	2	0.7	0.7
Disagree	14	4.6	5.2
Neutral	45	14.8	20.0
Agree	163	53.4	73.4
Strongly Agree	81	26.6	100.0
Total	305	100.0	

Table 68: I like to use voice media instruction

Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	1	0.3	0.3
Disagree	10	3.3	3.6
Neutral	47	15.4	19.0
Agree	182	59.7	78.7
Strongly Agree	65	21.3	100.0
Total	305	100.0	

Table 69: I like to use video media instruction

Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	1	0.3	0.3
Disagree	13	4.3	4.6
Neutral	39	12.8	17.4
Agree	178	58.4	75.7
Strongly Agree	74	24.3	100.0
Total	305	100.0	

Table 70: I like to use multimedia instruction

Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	3	1.0	1.0
Disagree	11	3.6	4.6
Neutral	34	11.1	15.7
Agree	179	58.7	74.4
Strongly Agree	78	25.6	100.0
Total	305	100.0	

Table 71: I am satisfied with using e-Learning system as a learning assisted tool

Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	5	1.6	1.6
Disagree	16	5.2	6.9
Neutral	30	9.8	16.7
Agree	169	55.4	72.1
Strongly Agree	85	27.9	100.0
Total	305	100.0	

Table 72: I am satisfied with using e-Learning system functions

Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	4	1.3	1.3
Disagree	17	5.6	6.9
Neutral	45	14.8	21.6
Agree	174	57.0	78.7
Strongly Agree	65	21.3	100.0
Total	305	100.0	

Table 73: I am satisfied with e-Learning system contents			
Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	4	1.3	1.3
Disagree	24	7.9	9.2
Neutral	62	20.3	29.5
Agree	162	53.1	82.6
Strongly Agree	53	17.4	100.0
Total	305	100.0	

Table 74: I am satisfied with multimedia instruction			
Variable Characteristic	Frequency	Percent	Cumulative Percent
Strongly Disagree	5	1.6	1.6
Disagree	25	8.2	9.8
Neutral	60	19.7	29.5
Agree	171	56.1	85.6
Strongly Agree	44	14.4	100.0
Total	305	100.0	

Table 75: Descriptive of statistical differences among participants according to their Age

Factors	Level	N	Mean	Std. Deviation
Usefulness	From 24-29	20	3.82	0.868
	From 30-39	98	4.05	0.683
	From 40-49	104	4.23	0.556
	50 and more	83	3.90	0.770
	Total	305	4.05	0.694
Ease of Use	From 24-29	20	3.63	0.779
	From 30-39	98	3.71	0.844
	From 40-49	104	3.89	0.688
	50 and more	83	3.59	0.810
	Total	305	3.73	0.786
Intention	From 24-29	20	4.18	0.556
	From 30-39	98	4.16	0.785
	From 40-49	104	4.25	0.535
	50 and more	83	4.03	0.755
	Total	305	4.16	0.689
Subjective Norm	From 24-29	20	2.99	0.801
	From 30-39	98	3.13	0.666
	From 40-49	104	3.19	0.730

	50 and more	83	3.17	0.705
	Total	305	3.15	0.706
Image	From 24-29	20	2.80	0.729
	From 30-39	98	2.97	0.876
	From 40-49	104	3.00	0.769
	50 and more	83	2.99	0.883
	Total	305	2.98	0.831
Job Relevance	From 24-29	20	3.85	0.860
	From 30-39	98	4.01	0.761
	From 40-49	104	4.05	0.581
	50 and more	83	3.81	0.818
	Total	305	3.96	0.732
Output Quality	From 24-29	20	3.78	0.835
	From 30-39	98	3.94	0.730
	From 40-49	104	3.96	0.639
	50 and more	83	3.70	0.863
	Total	305	3.87	0.751
Result Demonstrability	From 24-29	20	3.95	0.647
	From 30-39	98	3.94	0.703
	From 40-49	104	4.06	0.630
	50 and more	83	3.85	0.814
	Total	305	3.96	0.710
Computer Self-Efficacy	From 24-29	20	4.08	0.611
	From 30-39	98	4.13	0.537
	From 40-49	104	4.15	0.555
	50 and more	83	3.97	0.742
	Total	305	4.09	0.611
Perception of External Control	From 24-29	20	3.85	0.729
	From 30-39	98	4.13	0.694
	From 40-49	104	4.05	0.682
	50 and more	83	3.77	0.759
	Total	305	3.98	0.723
Computer Anxiety	From 24-29	20	1.41	0.546
	From 30-39	98	1.35	0.473
	From 40-49	104	1.45	0.548
	50 and more	83	1.58	0.658
	Total	305	1.45	0.562
Computer Playfulness	From 24-29	20	4.09	0.713
	From 30-39	98	4.28	0.598
	From 40-49	104	4.27	0.678
	50 and more	83	4.08	0.727
	Total	305	4.21	0.673

Table 75: Descriptive of statistical differences among participants according to their Age (cont..)

Factors	Level	N	Mean	Std. Deviation
Perceived Enjoyment	From 24-29	20	3.97	0.816
	From 30-39	98	4.00	0.796
	From 40-49	104	4.01	0.665
	50 and more	83	3.74	0.829
	Total	305	3.93	0.770
Objective Usability	From 24-29	20	3.43	0.863
	From 30-39	98	3.70	0.786
	From 40-49	104	3.83	0.749
	50 and more	83	3.49	0.859
	Total	305	3.67	0.809
Management Support	From 24-29	20	3.60	0.649
	From 30-39	98	3.93	0.671
	From 40-49	104	4.05	0.569
	50 and more	83	3.90	0.646
	Total	305	3.94	0.636
Design Characteristics	From 24-29	20	3.60	0.661
	From 30-39	98	3.70	0.688
	From 40-49	104	3.77	0.671
	50 and more	83	3.49	0.796
	Total	305	3.66	0.718
Organizational Support	From 24-29	20	3.46	0.967
	From 30-39	98	3.87	0.891
	From 40-49	104	3.97	0.822
	50 and more	83	3.84	0.820
	Total	305	3.87	0.858
Training	From 24-29	20	3.16	0.974
	From 30-39	98	3.62	0.896
	From 40-49	104	3.63	0.870
	50 and more	83	3.64	0.949
	Total	305	3.60	0.910
System Quality	From 24-29	20	3.32	1.040
	From 30-39	98	3.54	0.812
	From 40-49	104	3.71	0.802
	50 and more	83	3.53	0.800
	Total	305	3.58	0.824
Interactive Learning Activities	From 24-29	20	3.78	0.751
	From 30-39	98	3.92	0.690
	From 40-49	104	3.99	0.625
	50 and more	83	3.77	0.698
	Total	305	3.89	0.678
Effectiveness	From 24-29	20	3.93	0.849
	From 30-39	98	4.04	0.757
	From 40-49	104	4.17	0.650
	50 and more	83	3.92	0.788
	Total	305	4.04	0.741
Multimedia Instruction	From 24-29	20	4.03	0.445
	From 30-39	98	4.03	0.812
	From 40-49	104	4.09	0.607
	50 and more	83	3.91	0.760
	Total	305	4.02	0.713
Satisfaction	From 24-29	20	3.90	0.805
	From 30-39	98	3.85	0.720
	From 40-49	104	4.03	0.647
	50 and more	83	3.66	0.952
	Total	305	3.86	0.783

Table 76: Descriptive of statistical differences among participants according to University

Factors	Level	N	Mean	Std. Deviation
Usefulness	A-Quds Open University	30	4.06	0.706
	Islamic University	29	4.39	0.585
	Al-Azhar University	24	4.06	0.350
	Hebron University	10	4.30	0.576
	Bethlehem University	10	4.23	0.832
	Birzeit University	28	4.06	0.679
	Palestine Polytechnic University	11	4.18	0.736
	The Arab American University	10	4.37	0.576
	An-Najah National University	77	3.98	0.670
	Al-Quds University	36	3.78	0.905
	Palestine Technical University-Kadoori	13	4.21	0.442
	Al Aqsa University	27	3.88	0.752
	Total	305	4.05	0.694
Ease of Use	A-Quds Open University	30	3.77	0.754
	Islamic University	29	3.92	0.770
	Al-Azhar University	24	3.67	0.761
	Hebron University	10	3.83	0.850
	Bethlehem University	10	3.90	1.218
	Birzeit University	28	3.61	0.791
	Palestine Polytechnic University	11	4.12	1.014
	The Arab American University	10	3.70	1.160
	An-Najah National University	77	3.67	0.741
	Al-Quds University	36	3.60	0.804
	Palestine Technical University-Kadoori	13	3.95	0.506
	Al Aqsa University	27	3.70	0.602
	Total	305	3.73	0.786
Intention	A-Quds Open University	30	4.23	0.638
	Islamic University	29	4.34	0.581
	Al-Azhar University	24	4.14	0.636
	Hebron University	10	4.50	0.423
	Bethlehem University	10	4.37	0.777
	Birzeit University	28	4.12	0.871
	Palestine Polytechnic University	11	4.18	1.026
	The Arab American University	10	4.30	0.554
	An-Najah National University	77	4.21	0.541
	Al-Quds University	36	3.90	0.897
	Palestine Technical University-Kadoori	13	4.10	0.370
	Al Aqsa University	27	3.89	0.710
	Total	305	4.16	0.689
Subjective Norm	A-Quds Open University	30	3.01	0.578
	Islamic University	29	3.46	0.729
	Al-Azhar University	24	3.14	0.638
	Hebron University	10	3.38	0.503
	Bethlehem University	10	3.68	0.965
	Birzeit University	28	2.96	0.723
	Palestine Polytechnic University	11	3.86	0.786
	The Arab American University	10	3.10	0.530
	An-Najah National University	77	3.07	0.694
	Al-Quds University	36	3.07	0.578
	Palestine Technical University-Kadoori	13	3.46	0.742
	Al Aqsa University	27	2.86	0.673
	Total	305	3.15	0.706
Image	A-Quds Open University	30	3.28	0.880
	Islamic University	29	3.05	0.820
	Al-Azhar University	24	3.04	0.718
	Hebron University	10	2.97	1.012
	Bethlehem University	10	2.93	1.331
	Birzeit University	28	2.88	0.704
	Palestine Polytechnic University	11	2.82	0.861
	The Arab American University	10	3.17	0.689
	An-Najah National University	77	2.97	0.786
	Al-Quds University	36	2.59	0.859
	Palestine Technical University-Kadoori	13	3.21	0.888
	Al Aqsa University	27	3.04	0.747
	Total	305	2.98	0.831

Table 76: Descriptive of statistical differences among participants according to University (cont.)

Factors	Level	N	Mean	Std. Deviation
Job Relevance	A-Quds Open University	30	4.08	0.683
	Islamic University	29	4.17	0.587
	Al-Azhar University	24	3.92	0.545
	Hebron University	10	4.40	0.658
	Bethlehem University	10	4.20	1.033
	Birzeit University	28	4.00	0.805
	Palestine Polytechnic University	11	3.45	0.688
	The Arab American University	10	4.00	0.471
	An-Najah National University	77	3.97	0.702
	Al-Quds University	36	3.53	0.941
	Palestine Technical University-Kadoori	13	4.00	0.289
	Al Aqsa University	27	4.02	0.672
	Total	305	3.96	0.732
Output Quality	A-Quds Open University	30	4.07	0.704
	Islamic University	29	4.24	0.607
	Al-Azhar University	24	4.00	0.552
	Hebron University	10	4.30	0.350
	Bethlehem University	10	4.15	0.914
	Birzeit University	28	3.73	0.855
	Palestine Polytechnic University	11	3.91	0.584
	The Arab American University	10	4.25	0.425
	An-Najah National University	77	3.71	0.736
	Al-Quds University	36	3.53	0.861
	Palestine Technical University-Kadoori	13	4.00	0.456
	Al Aqsa University	27	3.70	0.869
	Total	305	3.87	0.751
Result Demonstrability	A-Quds Open University	30	4.10	0.724
	Islamic University	29	3.98	0.661
	Al-Azhar University	24	4.00	0.608
	Hebron University	10	4.15	0.412
	Bethlehem University	10	4.00	0.972
	Birzeit University	28	3.96	0.769
	Palestine Polytechnic University	11	4.27	0.786
	The Arab American University	10	4.00	0.471
	An-Najah National University	77	3.84	0.680
	Al-Quds University	36	3.78	0.890
	Palestine Technical University-Kadoori	13	4.00	0.540
	Al Aqsa University	27	4.06	0.684
	Total	305	3.96	0.710
Computer Self-Efficacy	A-Quds Open University	30	4.32	0.507
	Islamic University	29	4.30	0.514
	Al-Azhar University	24	4.08	0.600
	Hebron University	10	4.33	0.703
	Bethlehem University	10	4.33	0.416
	Birzeit University	28	3.90	0.647
	Palestine Polytechnic University	11	4.06	0.712
	The Arab American University	10	4.17	0.572
	An-Najah National University	77	4.06	0.524
	Al-Quds University	36	3.83	0.826
	Palestine Technical University-Kadoori	13	4.21	0.420
	Al Aqsa University	27	3.99	0.630
	Total	305	4.09	0.611
Perception of External Control	A-Quds Open University	30	4.12	0.597
	Islamic University	29	4.17	0.711
	Al-Azhar University	24	3.89	0.700
	Hebron University	10	4.37	0.745
	Bethlehem University	10	4.33	0.629
	Birzeit University	28	3.67	0.964
	Palestine Polytechnic University	11	4.03	0.674
	The Arab American University	10	3.87	0.549
	An-Najah National University	77	4.05	0.599
	Al-Quds University	36	3.80	0.867
	Palestine Technical University-Kadoori	13	4.05	0.542
	Al Aqsa University	27	3.83	0.764
	Total	305	3.98	0.723

Table 76: Descriptive of statistical differences among participants according to University (cont.)

Factors	Level	N	Mean	Std. Deviation
Computer Anxiety	A-Quds Open University	30	1.53	0.589
	Islamic University	29	1.28	0.490
	Al-Azhar University	24	1.31	0.462
	Hebron University	10	1.45	0.823
	Bethlehem University	10	1.35	0.592
	Birzeit University	28	1.55	0.579
	Palestine Polytechnic University	11	1.25	0.461
	The Arab American University	10	1.53	0.463
	An-Najah National University	77	1.42	0.492
	Al-Quds University	36	1.52	0.677
	Palestine Technical University-Kadoori	13	1.44	0.480
	Al Aqsa University	27	1.64	0.659
	Total	305	1.45	0.562
Computer Playfulness	A-Quds Open University	30	4.32	0.623
	Islamic University	29	4.34	0.557
	Al-Azhar University	24	4.26	0.623
	Hebron University	10	4.30	0.896
	Bethlehem University	10	4.60	0.543
	Birzeit University	28	4.15	0.598
	Palestine Polytechnic University	11	4.48	0.607
	The Arab American University	10	4.08	0.736
	An-Najah National University	77	4.17	0.654
	Al-Quds University	36	4.02	0.803
	Palestine Technical University-Kadoori	13	4.12	0.689
	Al Aqsa University	27	4.16	0.750
	Total	305	4.21	0.673
Perceived Enjoyment	A-Quds Open University	30	4.00	0.706
	Islamic University	29	3.99	0.861
	Al-Azhar University	24	4.00	0.547
	Hebron University	10	4.33	0.685
	Bethlehem University	10	4.37	0.909
	Birzeit University	28	3.98	0.690
	Palestine Polytechnic University	11	3.88	0.860
	The Arab American University	10	4.00	0.629
	An-Najah National University	77	3.90	0.744
	Al-Quds University	36	3.61	0.882
	Palestine Technical University-Kadoori	13	4.05	0.405
	Al Aqsa University	27	3.86	0.944
	Total	305	3.93	0.770
Objective Usability	A-Quds Open University	30	3.68	0.876
	Islamic University	29	4.02	0.738
	Al-Azhar University	24	3.77	0.766
	Hebron University	10	3.80	0.888
	Bethlehem University	10	3.95	1.212
	Birzeit University	28	3.71	0.927
	Palestine Polytechnic University	11	4.00	0.975
	The Arab American University	10	3.95	0.926
	An-Najah National University	77	3.39	0.682
	Al-Quds University	36	3.53	0.774
	Palestine Technical University-Kadoori	13	3.88	0.546
	Al Aqsa University	27	3.63	0.715
	Total	305	3.67	0.809
Management Support	A-Quds Open University	30	4.13	0.456
	Islamic University	29	4.31	0.486
	Al-Azhar University	24	3.36	0.703
	Hebron University	10	4.22	0.520
	Bethlehem University	10	4.08	0.598
	Birzeit University	28	4.06	0.608
	Palestine Polytechnic University	11	3.98	0.460
	The Arab American University	10	3.80	0.365
	An-Najah National University	77	3.89	0.679
	Al-Quds University	36	3.67	0.651
	Palestine Technical University-Kadoori	13	3.83	0.541
	Al Aqsa University	27	4.16	0.532
	Total	305	3.94	0.636

Table 76: Descriptive of statistical differences among participants according to University (cont.)

Factors	Level	N	Mean	Std. Deviation
Design Characteristics	A-Quds Open University	30	3.80	0.664
	Islamic University	29	4.02	0.574
	Al-Azhar University	24	3.54	0.530
	Hebron University	10	3.75	0.890
	Bethlehem University	10	3.60	0.876
	Birzeit University	28	3.63	0.741
	Palestine Polytechnic University	11	3.55	0.723
	The Arab American University	10	3.80	0.632
	An-Najah National University	77	3.62	0.716
	Al-Quds University	36	3.46	0.865
	Palestine Technical University-Kadoori	13	3.88	0.583
	Al Aqsa University	27	3.54	0.720
	Total	305	3.66	0.718
Organizational Support	A-Quds Open University	30	4.26	0.523
	Islamic University	29	4.49	0.618
	Al-Azhar University	24	2.78	0.889
	Hebron University	10	4.35	0.603
	Bethlehem University	10	3.88	0.592
	Birzeit University	28	3.71	0.842
	Palestine Polytechnic University	11	4.05	0.705
	The Arab American University	10	3.70	0.762
	An-Najah National University	77	3.94	0.790
	Al-Quds University	36	3.56	0.862
	Palestine Technical University-Kadoori	13	3.79	0.756
	Al Aqsa University	27	3.96	0.851
	Total	305	3.87	0.858
Training	A-Quds Open University	30	4.18	0.786
	Islamic University	29	4.03	0.827
	Al-Azhar University	24	2.83	0.923
	Hebron University	10	4.20	0.685
	Bethlehem University	10	3.65	0.810
	Birzeit University	28	3.28	0.929
	Palestine Polytechnic University	11	3.43	0.708
	The Arab American University	10	3.48	0.812
	An-Najah National University	77	3.56	0.863
	Al-Quds University	36	3.31	0.964
	Palestine Technical University-Kadoori	13	3.50	0.757
	Al Aqsa University	27	3.90	0.698
	Total	305	3.60	0.910
System Quality	A-Quds Open University	30	3.93	0.657
	Islamic University	29	4.17	0.634
	Al-Azhar University	24	2.90	0.854
	Hebron University	10	4.13	0.613
	Bethlehem University	10	3.70	0.793
	Birzeit University	28	3.31	0.708
	Palestine Polytechnic University	11	3.55	0.934
	The Arab American University	10	3.80	0.632
	An-Najah National University	77	3.62	0.810
	Al-Quds University	36	3.36	0.826
	Palestine Technical University-Kadoori	13	3.26	0.683
	Al Aqsa University	27	3.43	0.816
	Total	305	3.58	0.824
Interactive Learning Activities	A-Quds Open University	30	4.08	0.820
	Islamic University	29	4.14	0.531
	Al-Azhar University	24	3.89	0.650
	Hebron University	10	4.37	0.693
	Bethlehem University	10	3.87	0.592
	Birzeit University	28	3.83	0.682
	Palestine Polytechnic University	11	3.97	0.586
	The Arab American University	10	3.67	0.444
	An-Najah National University	77	3.84	0.661
	Al-Quds University	36	3.73	0.730
	Palestine Technical University-Kadoori	13	3.85	0.571
	Al Aqsa University	27	3.78	0.740
	Total	305	3.89	0.678

Table 76: Descriptive of statistical differences among participants according to University (cont.)

Factors	Level	N	Mean	Std. Deviation
Effectiveness	A-Quds Open University	30	4.29	0.791
	Islamic University	29	4.28	0.643
	Al-Azhar University	24	4.10	0.506
	Hebron University	10	4.70	0.483
	Bethlehem University	10	4.17	0.360
	Birzeit University	28	3.95	0.854
	Palestine Polytechnic University	11	4.00	0.632
	The Arab American University	10	3.80	0.358
	An-Najah National University	77	3.96	0.782
	Al-Quds University	36	3.78	0.926
	Palestine Technical University-Kadoori	13	4.15	0.520
	Al Aqsa University	27	3.94	0.654
	Total	305	4.04	0.741
Multimedia Instruction	A-Quds Open University	30	4.27	0.609
	Islamic University	29	4.22	0.860
	Al-Azhar University	24	3.93	0.735
	Hebron University	10	4.37	0.554
	Bethlehem University	10	4.20	0.422
	Birzeit University	28	3.87	0.808
	Palestine Polytechnic University	11	3.76	0.883
	The Arab American University	10	3.80	0.422
	An-Najah National University	77	4.00	0.640
	Al-Quds University	36	3.82	0.834
	Palestine Technical University-Kadoori	13	4.08	0.364
	Al Aqsa University	27	4.00	0.740
	Total	305	4.02	0.713
Satisfaction	A-Quds Open University	30	4.21	0.598
	Islamic University	29	4.31	0.604
	Al-Azhar University	24	3.67	0.779
	Hebron University	10	4.38	0.556
	Bethlehem University	10	3.73	0.901
	Birzeit University	28	3.54	0.779
	Palestine Polytechnic University	11	3.82	0.807
	The Arab American University	10	3.93	0.708
	An-Najah National University	77	3.93	0.672
	Al-Quds University	36	3.46	0.994
	Palestine Technical University-Kadoori	13	3.98	0.515
	Al Aqsa University	27	3.64	0.844
	Total	305	3.86	0.783

Table 77: Descriptive of statistical differences among participants according to Experience

Factors	Levels	N	Mean	Std. Deviation
Usefulness	5 or less	77	4.09	0.681
	From 6-10	92	4.12	0.734
	From 11-15	56	4.15	0.589
	16 or more	80	3.88	0.708
	Total	305	4.05	0.694
Ease of Use	5 or less	77	3.77	0.726
	From 6-10	92	3.77	0.867
	From 11-15	56	3.82	0.687
	16 or more	80	3.60	0.804
	Total	305	3.73	0.786
Intention	5 or less	77	4.26	0.658
	From 6-10	92	4.16	0.737
	From 11-15	56	4.23	0.569
	16 or more	80	4.02	0.725
	Total	305	4.16	0.689
Subjective Norm	5 or less	77	3.17	0.785
	From 6-10	92	3.14	0.602
	From 11-15	56	3.19	0.712
	16 or more	80	3.13	0.744
	Total	305	3.15	0.706
Image	5 or less	77	2.99	0.791
	From 6-10	92	2.96	0.839
	From 11-15	56	3.07	0.808
	16 or more	80	2.92	0.885
	Total	305	2.98	0.831
Job Relevance	5 or less	77	4.06	0.709
	From 6-10	92	3.99	0.784
	From 11-15	56	4.05	0.637
	16 or more	80	3.75	0.725
	Total	305	3.96	0.732
Output Quality	5 or less	77	3.96	0.663
	From 6-10	92	3.90	0.761
	From 11-15	56	3.98	0.713
	16 or more	80	3.68	0.819
	Total	305	3.87	0.751
Result Demonstrability	5 or less	77	4.01	0.568
	From 6-10	92	3.96	0.727
	From 11-15	56	4.07	0.759
	16 or more	80	3.83	0.768
	Total	305	3.96	0.710
Computer Self-Efficacy	5 or less	77	4.10	0.530
	From 6-10	92	4.13	0.581
	From 11-15	56	4.23	0.512
	16 or more	80	3.93	0.745
	Total	305	4.09	0.611
Perception of External Control	5 or less	77	4.00	0.712
	From 6-10	92	4.07	0.691
	From 11-15	56	4.08	0.572
	16 or more	80	3.81	0.835
	Total	305	3.98	0.723
Computer Anxiety	5 or less	77	1.42	0.496
	From 6-10	92	1.43	0.553
	From 11-15	56	1.42	0.531
	16 or more	80	1.53	0.650
	Total	305	1.45	0.562
Computer Playfulness	5 or less	77	4.21	0.604
	From 6-10	92	4.23	0.664
	From 11-15	56	4.33	0.666
	16 or more	80	4.10	0.743
	Total	305	4.21	0.673

Table 77: Descriptive of statistical differences among participants according to Experience (cont.)

Factors	Levels	N	Mean	Std. Deviation
Perceived Enjoyment	5 or less	77	4.02	0.709
	From 6-10	92	3.97	0.811
	From 11-15	56	4.02	0.684
	16 or more	80	3.74	0.813
	Total	305	3.93	0.770
Objective Usability	5 or less	77	3.60	0.754
	From 6-10	92	3.73	0.747
	From 11-15	56	3.83	0.827
	16 or more	80	3.54	0.901
	Total	305	3.67	0.809
Management Support	5 or less	77	3.90	0.656
	From 6-10	92	3.91	0.609
	From 11-15	56	4.10	0.603
	16 or more	80	3.89	0.661
	Total	305	3.94	0.636
Design Characteristics	5 or less	77	3.63	0.690
	From 6-10	92	3.68	0.725
	From 11-15	56	3.81	0.636
	16 or more	80	3.56	0.781
	Total	305	3.66	0.718
Organizational Support	5 or less	77	3.83	0.931
	From 6-10	92	3.85	0.860
	From 11-15	56	4.04	0.768
	16 or more	80	3.81	0.844
	Total	305	3.87	0.858
Training	5 or less	77	3.46	0.959
	From 6-10	92	3.65	0.933
	From 11-15	56	3.81	0.904
	16 or more	80	3.51	0.818
	Total	305	3.60	0.910
System Quality	5 or less	77	3.65	0.842
	From 6-10	92	3.56	0.843
	From 11-15	56	3.67	0.832
	16 or more	80	3.47	0.779
	Total	305	3.58	0.824
Interactive Learning Activities	5 or less	77	3.96	0.617
	From 6-10	92	3.88	0.712
	From 11-15	56	4.04	0.687
	16 or more	80	3.74	0.669
	Total	305	3.89	0.678
Effectiveness	5 or less	77	4.11	0.664
	From 6-10	92	4.02	0.804
	From 11-15	56	4.27	0.636
	16 or more	80	3.85	0.761
	Total	305	4.04	0.741
Multimedia Instruction	5 or less	77	4.04	0.697
	From 6-10	92	4.01	0.731
	From 11-15	56	4.13	0.724
	16 or more	80	3.92	0.701
	Total	305	4.02	0.713
Satisfaction	5 or less	77	4.06	0.667
	From 6-10	92	3.80	0.805
	From 11-15	56	4.00	0.661
	16 or more	80	3.65	0.885
	Total	305	3.86	0.783

Table 78: Descriptive of statistical differences among participants according to Academic Rank

Factors	Level	N	Mean	Std. Deviation
Usefulness	Instructor	51	3.90	0.746
	Lecturer	73	4.10	0.610
	Assistant Professor	131	4.12	0.707
	Associate Professor	36	3.97	0.649
	Full Professor	14	3.93	0.859
	Total	305	4.05	0.694
Ease of Use	Instructor	51	3.54	0.849
	Lecturer	73	3.75	0.794
	Assistant Professor	131	3.80	0.732
	Associate Professor	36	3.71	0.884
	Full Professor	14	3.79	0.711
	Total	305	3.73	0.786
Intention	Instructor	51	4.07	0.728
	Lecturer	73	4.24	0.612
	Assistant Professor	131	4.17	0.700
	Associate Professor	36	4.11	0.713
	Full Professor	14	4.02	0.790
	Total	305	4.16	0.689
Subjective Norm	Instructor	51	2.98	0.672
	Lecturer	73	3.24	0.755
	Assistant Professor	131	3.20	0.692
	Associate Professor	36	3.03	0.616
	Full Professor	14	3.16	0.858
	Total	305	3.15	0.706
Image	Instructor	51	2.97	0.852
	Lecturer	73	3.05	0.811
	Assistant Professor	131	2.92	0.854
	Associate Professor	36	3.01	0.803
	Full Professor	14	3.00	0.795
	Total	305	2.98	0.831
Job Relevance	Instructor	51	3.87	0.882
	Lecturer	73	3.97	0.583
	Assistant Professor	131	3.98	0.758
	Associate Professor	36	4.04	0.669
	Full Professor	14	3.75	0.778
	Total	305	3.96	0.732
Output Quality	Instructor	51	3.79	0.789
	Lecturer	73	3.92	0.791
	Assistant Professor	131	3.89	0.683
	Associate Professor	36	3.89	0.846
	Full Professor	14	3.68	0.823
	Total	305	3.87	0.751
Result Demonstrability	Instructor	51	3.89	0.688
	Lecturer	73	3.87	0.773
	Assistant Professor	131	4.04	0.675
	Associate Professor	36	3.99	0.702
	Full Professor	14	3.86	0.795
	Total	305	3.96	0.710
Computer Self-Efficacy	Instructor	51	4.12	0.676
	Lecturer	73	4.07	0.565
	Assistant Professor	131	4.11	0.594
	Associate Professor	36	4.11	0.652
	Full Professor	14	3.83	0.676
	Total	305	4.09	0.611

Table 78: Descriptive of statistical differences among participants according to Academic Rank (cont.)

Factors	Level	N	Mean	Std. Deviation
Perception of External Control	Instructor	51	3.93	0.809
	Lecturer	73	3.95	0.713
	Assistant Professor	131	4.06	0.678
	Associate Professor	36	3.92	0.723
	Full Professor	14	3.81	0.864
	Total	305	3.98	0.723
Computer Anxiety	Instructor	51	1.43	0.548
	Lecturer	73	1.55	0.570
	Assistant Professor	131	1.37	0.503
	Associate Professor	36	1.48	0.593
	Full Professor	14	1.70	0.867
	Total	305	1.45	0.562
Computer Playfulness	Instructor	51	4.26	0.709
	Lecturer	73	4.17	0.648
	Assistant Professor	131	4.25	0.652
	Associate Professor	36	4.15	0.708
	Full Professor	14	4.07	0.811
	Total	305	4.21	0.673
Perceived Enjoyment	Instructor	51	3.97	0.920
	Lecturer	73	3.94	0.742
	Assistant Professor	131	3.94	0.742
	Associate Professor	36	3.90	0.632
	Full Professor	14	3.76	0.965
	Total	305	3.93	0.770
Objective Usability	Instructor	51	3.65	0.868
	Lecturer	73	3.69	0.836
	Assistant Professor	131	3.66	0.747
	Associate Professor	36	3.63	0.831
	Full Professor	14	3.86	1.027
	Total	305	3.67	0.809
Management Support	Instructor	51	3.96	0.676
	Lecturer	73	3.96	0.660
	Assistant Professor	131	3.91	0.614
	Associate Professor	36	3.96	0.614
	Full Professor	14	4.00	0.688
	Total	305	3.94	0.636
Design Characteristics	Instructor	51	3.64	0.855
	Lecturer	73	3.58	0.705
	Assistant Professor	131	3.71	0.676
	Associate Professor	36	3.68	0.794
	Full Professor	14	3.68	0.372
	Total	305	3.66	0.718
Organizational Support	Instructor	51	3.92	0.894
	Lecturer	73	3.80	0.866
	Assistant Professor	131	3.87	0.834
	Associate Professor	36	3.98	0.854
	Full Professor	14	3.75	0.995
	Total	305	3.87	0.858
Training	Instructor	51	3.49	1.092
	Lecturer	73	3.53	0.823
	Assistant Professor	131	3.62	0.913
	Associate Professor	36	3.74	0.868
	Full Professor	14	3.75	0.707
	Total	305	3.60	0.910

Table 78: Descriptive of statistical differences among participants according to Academic Rank (cont.)

Factors	Level	N	Mean	Std. Deviation
System Quality	Instructor	51	3.65	0.937
	Lecturer	73	3.50	0.877
	Assistant Professor	131	3.60	0.805
	Associate Professor	36	3.60	0.694
	Full Professor	14	3.52	0.650
	Total	305	3.58	0.824
Interactive Learning Activities	Instructor	51	3.86	0.784
	Lecturer	73	3.89	0.585
	Assistant Professor	131	3.92	0.696
	Associate Professor	36	3.91	0.679
	Full Professor	14	3.67	0.570
	Total	305	3.89	0.678
Effectiveness	Instructor	51	3.95	0.855
	Lecturer	73	4.05	0.558
	Assistant Professor	131	4.07	0.778
	Associate Professor	36	4.11	0.805
	Full Professor	14	3.90	0.646
	Total	305	4.04	0.741
Multimedia Instruction	Instructor	51	4.07	0.674
	Lecturer	73	4.11	0.601
	Assistant Professor	131	3.94	0.778
	Associate Professor	36	4.08	0.741
	Full Professor	14	3.83	0.663
	Total	305	4.02	0.713
Satisfaction	Instructor	51	3.93	0.773
	Lecturer	73	3.81	0.827
	Assistant Professor	131	3.87	0.802
	Associate Professor	36	3.89	0.639
	Full Professor	14	3.75	0.826
	Total	305	3.86	0.783

Table 79: Descriptive of statistical differences among participants according to Internet Usage

Factors	Level	N	Mean	Std. Deviation
Usefulness	From 1-3	146	3.96	0.715
	From 4-6	118	4.14	0.646
	From 7-9	27	4.26	0.572
	10 or more	14	3.93	0.935
	Total	305	4.05	0.694
Ease of Use	From 1-3	146	3.62	0.746
	From 4-6	118	3.90	0.795
	From 7-9	27	3.84	0.636
	10 or more	14	3.29	1.053
	Total	305	3.73	0.786
Intention	From 1-3	146	3.99	0.726
	From 4-6	118	4.32	0.584
	From 7-9	27	4.37	0.501
	10 or more	14	4.12	1.001
	Total	305	4.16	0.689
Subjective Norm	From 1-3	146	3.09	0.671
	From 4-6	118	3.26	0.739
	From 7-9	27	3.05	0.727
	10 or more	14	3.16	0.698
	Total	305	3.15	0.706
Image	From 1-3	146	2.87	0.731
	From 4-6	118	3.11	0.913
	From 7-9	27	2.94	0.938
	10 or more	14	3.00	0.806
	Total	305	2.98	0.831
Job Relevance	From 1-3	146	3.90	0.707
	From 4-6	118	4.00	0.699
	From 7-9	27	4.19	0.736
	10 or more	14	3.75	1.122
	Total	305	3.96	0.732
Output Quality	From 1-3	146	3.78	0.768
	From 4-6	118	3.96	0.740
	From 7-9	27	4.06	0.684
	10 or more	14	3.71	0.699
	Total	305	3.87	0.751
Result Demonstrability	From 1-3	146	3.88	0.704
	From 4-6	118	4.06	0.691
	From 7-9	27	4.11	0.543
	10 or more	14	3.71	1.051
	Total	305	3.96	0.710
Computer Self-Efficacy	From 1-3	146	3.93	0.619
	From 4-6	118	4.22	0.589
	From 7-9	27	4.42	0.458
	10 or more	14	4.02	0.531
	Total	305	4.09	0.611
Perception of External Control	From 1-3	146	3.81	0.689
	From 4-6	118	4.16	0.716
	From 7-9	27	4.12	0.807
	10 or more	14	4.05	0.583
	Total	305	3.98	0.723
Computer Anxiety	From 1-3	146	1.56	0.609
	From 4-6	118	1.33	0.482
	From 7-9	27	1.34	0.555
	10 or more	14	1.45	0.502
	Total	305	1.45	0.562
Computer Playfulness	From 1-3	146	4.08	0.695
	From 4-6	118	4.34	0.630
	From 7-9	27	4.45	0.636
	10 or more	14	4.11	0.586
	Total	305	4.21	0.673

Table 79: Descriptive of statistical differences among participants according to Internet Usage (cont.)

Factors	Level	N	Mean	Std. Deviation
Perceived Enjoyment	From 1-3	146	3.80	0.764
	From 4-6	118	4.02	0.752
	From 7-9	27	4.23	0.756
	10 or more	14	4.00	0.816
	Total	305	3.93	0.770
Objective Usability	From 1-3	146	3.60	0.785
	From 4-6	118	3.76	0.836
	From 7-9	27	3.69	0.786
	10 or more	14	3.61	0.881
	Total	305	3.67	0.809
Management Support	From 1-3	146	3.85	0.653
	From 4-6	118	4.04	0.624
	From 7-9	27	4.10	0.550
	10 or more	14	3.81	0.579
	Total	305	3.94	0.636
Design Characteristics	From 1-3	146	3.60	0.675
	From 4-6	118	3.76	0.756
	From 7-9	27	3.67	0.721
	10 or more	14	3.50	0.784
	Total	305	3.66	0.718
Organizational Support	From 1-3	146	3.76	0.892
	From 4-6	118	3.95	0.881
	From 7-9	27	4.14	0.547
	10 or more	14	3.79	0.642
	Total	305	3.87	0.858
Training	From 1-3	146	3.49	0.919
	From 4-6	118	3.68	0.915
	From 7-9	27	3.81	0.813
	10 or more	14	3.52	0.901
	Total	305	3.60	0.910
System Quality	From 1-3	146	3.52	0.773
	From 4-6	118	3.62	0.896
	From 7-9	27	3.80	0.675
	10 or more	14	3.43	0.947
	Total	305	3.58	0.824
Interactive Learning Activities	From 1-3	146	3.80	0.697
	From 4-6	118	4.01	0.656
	From 7-9	27	3.98	0.538
	10 or more	14	3.71	0.783
	Total	305	3.89	0.678
Effectiveness	From 1-3	146	3.91	0.791
	From 4-6	118	4.15	0.662
	From 7-9	27	4.30	0.594
	10 or more	14	4.07	0.888
	Total	305	4.04	0.741
Multimedia Instruction	From 1-3	146	3.84	0.753
	From 4-6	118	4.18	0.639
	From 7-9	27	4.28	0.495
	10 or more	14	3.93	0.829
	Total	305	4.02	0.713
Satisfaction	From 1-3	146	3.76	0.808
	From 4-6	118	3.95	0.766
	From 7-9	27	4.02	0.631
	10 or more	14	3.84	0.864
	Total	305	3.86	0.783

Table 80: Descriptive of statistical differences among participants according to Internet Speed

Factors	Level	N	Mean	Std. Deviation
Usefulness	1M or less	50	4.03	0.656
	2M	130	3.98	0.692
	4M	84	4.17	0.664
	8M Or more	41	4.09	0.789
	Total	305	4.05	0.694
Ease of Use	1M or less	50	3.74	0.732
	2M	130	3.71	0.737
	4M	84	3.69	0.858
	8M Or more	41	3.89	0.851
	Total	305	3.73	0.786
Intention	1M or less	50	4.00	0.680
	2M	130	4.16	0.642
	4M	84	4.23	0.682
	8M Or more	41	4.20	0.836
	Total	305	4.16	0.689
Subjective Norm	1M or less	50	3.23	0.756
	2M	130	3.13	0.632
	4M	84	3.07	0.738
	8M Or more	41	3.30	0.792
	Total	305	3.15	0.706
Image	1M or less	50	3.11	0.799
	2M	130	2.97	0.856
	4M	84	2.92	0.681
	8M Or more	41	2.93	1.055
	Total	305	2.98	0.831
Job Relevance	1M or less	50	3.89	0.649
	2M	130	3.91	0.715
	4M	84	4.14	0.674
	8M Or more	41	3.83	0.933
	Total	305	3.96	0.732
Output Quality	1M or less	50	3.91	0.668
	2M	130	3.83	0.816
	4M	84	3.91	0.664
	8M Or more	41	3.88	0.820
	Total	305	3.87	0.751
Result Demonstrability	1M or less	50	4.02	0.639
	2M	130	3.92	0.662
	4M	84	4.01	0.732
	8M Or more	41	3.91	0.887
	Total	305	3.96	0.710
Computer Self-Efficacy	1M or less	50	4.01	0.579
	2M	130	4.09	0.568
	4M	84	4.14	0.577
	8M Or more	41	4.08	0.829
	Total	305	4.09	0.611
Perception of External Control	1M or less	50	3.94	0.749
	2M	130	3.91	0.694
	4M	84	4.04	0.692
	8M Or more	41	4.16	0.820
	Total	305	3.98	0.723
Computer Anxiety	1M or less	50	1.52	0.655
	2M	130	1.49	0.581
	4M	84	1.41	0.517
	8M Or more	41	1.31	0.443
	Total	305	1.45	0.562
Computer Playfulness	1M or less	50	4.21	0.699
	2M	130	4.10	0.695
	4M	84	4.26	0.635
	8M Or more	41	4.48	0.578
	Total	305	4.21	0.673

Table 80 : Descriptive of statistical differences among participants according to Internet Speed (cont.)

Factors	Level	N	Mean	Std. Deviation
Perceived Enjoyment	1M or less	50	3.95	0.723
	2M	130	3.84	0.760
	4M	84	4.04	0.749
	8M Or more	41	3.99	0.880
	Total	305	3.93	0.770
Objective Usability	1M or less	50	3.68	0.720
	2M	130	3.58	0.798
	4M	84	3.74	0.820
	8M Or more	41	3.77	0.923
	Total	305	3.67	0.809
Management Support	1M or less	50	3.93	0.690
	2M	130	3.92	0.640
	4M	84	3.94	0.618
	8M Or more	41	4.02	0.605
	Total	305	3.94	0.636
Design Characteristics	1M or less	50	3.67	0.711
	2M	130	3.59	0.707
	4M	84	3.72	0.683
	8M Or more	41	3.74	0.830
	Total	305	3.66	0.718
Organizational Support	1M or less	50	3.77	1.072
	2M	130	3.86	0.848
	4M	84	3.84	0.794
	8M Or more	41	4.09	0.704
	Total	305	3.87	0.858
Training	1M or less	50	3.52	1.040
	2M	130	3.58	0.862
	4M	84	3.59	0.921
	8M Or more	41	3.76	0.878
	Total	305	3.60	0.910
System Quality	1M or less	50	3.64	0.961
	2M	130	3.49	0.835
	4M	84	3.67	0.774
	8M Or more	41	3.61	0.699
	Total	305	3.58	0.824
Interactive Learning Activities	1M or less	50	3.92	0.658
	2M	130	3.84	0.670
	4M	84	3.94	0.645
	8M Or more	41	3.95	0.794
	Total	305	3.89	0.678
Effectiveness	1M or less	50	4.01	0.606
	2M	130	3.95	0.819
	4M	84	4.18	0.676
	8M Or more	41	4.10	0.735
	Total	305	4.04	0.741
Multimedia Instruction	1M or less	50	3.89	0.658
	2M	130	4.00	0.748
	4M	84	4.14	0.638
	8M Or more	41	3.95	0.794
	Total	305	4.02	0.713
Satisfaction	1M or less	50	3.97	0.742
	2M	130	3.81	0.784
	4M	84	3.87	0.770
	8M Or more	41	3.90	0.868
	Total	305	3.86	0.783

Table 81: Descriptive of statistical differences among participants according to Computer Usage

Factors	Level	N	Mean	Std. Deviation
Usefulness	From 1-3	157	4.00	0.687
	From 4-6	107	4.07	0.704
	From 7-9	33	4.24	0.625
	10 or more	8	4.13	0.942
	Total	305	4.05	0.694
Ease of Use	From 1-3	157	3.73	0.723
	From 4-6	107	3.71	0.835
	From 7-9	33	3.79	0.772
	10 or more	8	3.96	1.339
	Total	305	3.73	0.786
Intention	From 1-3	157	4.10	0.732
	From 4-6	107	4.17	0.630
	From 7-9	33	4.30	0.689
	10 or more	8	4.54	0.396
	Total	305	4.16	0.689
Subjective Norm	From 1-3	157	3.13	0.718
	From 4-6	107	3.18	0.692
	From 7-9	33	3.22	0.712
	10 or more	8	3.06	0.753
	Total	305	3.15	0.706
Image	From 1-3	157	2.96	0.795
	From 4-6	107	2.95	0.911
	From 7-9	33	3.03	0.704
	10 or more	8	3.38	0.950
	Total	305	2.98	0.831
Job Relevance	From 1-3	157	3.84	0.760
	From 4-6	107	4.05	0.643
	From 7-9	33	4.21	0.707
	10 or more	8	4.00	1.069
	Total	305	3.96	0.732
Output Quality	From 1-3	157	3.81	0.708
	From 4-6	107	3.89	0.807
	From 7-9	33	4.00	0.771
	10 or more	8	4.19	0.704
	Total	305	3.87	0.751
Result Demonstrability	From 1-3	157	3.90	0.690
	From 4-6	107	4.05	0.730
	From 7-9	33	3.95	0.666
	10 or more	8	3.88	0.991
	Total	305	3.96	0.710
Computer Self-Efficacy	From 1-3	157	3.96	0.621
	From 4-6	107	4.22	0.570
	From 7-9	33	4.23	0.543
	10 or more	8	4.38	0.700
	Total	305	4.09	0.611
Perception of External Control	From 1-3	157	3.87	0.731
	From 4-6	107	4.11	0.716
	From 7-9	33	4.01	0.637
	10 or more	8	4.54	0.502
	Total	305	3.98	0.723
Computer Anxiety	From 1-3	157	1.52	0.610
	From 4-6	107	1.35	0.502
	From 7-9	33	1.48	0.504
	10 or more	8	1.34	0.421
	Total	305	1.45	0.562
Computer Playfulness	From 1-3	157	4.15	0.689
	From 4-6	107	4.25	0.667
	From 7-9	33	4.31	0.583
	10 or more	8	4.50	0.720
	Total	305	4.21	0.673

Table 81: Descriptive of statistical differences among participants according to Computer Usage (cont.)

Factors	Level	N	Mean	Std. Deviation
Perceived Enjoyment	From 1-3	157	3.83	0.799
	From 4-6	107	3.99	0.727
	From 7-9	33	4.17	0.727
	10 or more	8	4.25	0.661
	Total	305	3.93	0.770
Objective Usability	From 1-3	157	3.63	0.785
	From 4-6	107	3.67	0.855
	From 7-9	33	3.76	0.782
	10 or more	8	4.00	0.802
	Total	305	3.67	0.809
Management Support	From 1-3	157	3.87	0.669
	From 4-6	107	4.02	0.621
	From 7-9	33	4.01	0.496
	10 or more	8	4.08	0.575
	Total	305	3.94	0.636
Design Characteristics	From 1-3	157	3.63	0.677
	From 4-6	107	3.66	0.751
	From 7-9	33	3.70	0.780
	10 or more	8	4.19	0.704
	Total	305	3.66	0.718
Organizational Support	From 1-3	157	3.71	0.945
	From 4-6	107	4.04	0.717
	From 7-9	33	4.04	0.718
	10 or more	8	4.00	0.866
	Total	305	3.87	0.858
Training	From 1-3	157	3.49	0.952
	From 4-6	107	3.69	0.870
	From 7-9	33	3.80	0.851
	10 or more	8	3.56	0.637
	Total	305	3.60	0.910
System Quality	From 1-3	157	3.51	0.906
	From 4-6	107	3.65	0.682
	From 7-9	33	3.68	0.810
	10 or more	8	3.54	0.958
	Total	305	3.58	0.824
Interactive Learning Activities	From 1-3	157	3.82	0.672
	From 4-6	107	3.96	0.653
	From 7-9	33	3.99	0.752
	10 or more	8	4.04	0.744
	Total	305	3.89	0.678
Effectiveness	From 1-3	157	3.96	0.711
	From 4-6	107	4.12	0.760
	From 7-9	33	4.20	0.731
	10 or more	8	4.13	0.991
	Total	305	4.04	0.741
Multimedia Instruction	From 1-3	157	3.94	0.734
	From 4-6	107	4.06	0.705
	From 7-9	33	4.28	0.541
	10 or more	8	3.88	0.835
	Total	305	4.02	0.713
Satisfaction	From 1-3	157	3.82	0.845
	From 4-6	107	3.81	0.713
	From 7-9	33	4.08	0.698
	10 or more	8	4.38	0.463
	Total	305	3.86	0.783

Table 82: Summarized ANOVA Test for differences among Participants according to (Age, University, Experience, Academic Rank, Internet Usage, Internet Speed, and Computer Usage)

ANOVA - Between Groups	Age		University		Experience		Academic Rank		Internet Usage		Internet Speed		Computer Usage	
Factors	F	Sig.	F	Sig.	F	Sig.	F	Sig.	F	Sig.	F	Sig.	F	Sig.
Usefulness	4.631	**0.003**	1.892	**0.040**	2.451	0.064	1.277	0.279	2.601	0.052	1.448	0.229	1.119	0.342
Ease of use	2.381	0.070	0.763	0.677	1.154	0.328	1.068	0.372	4.520	**0.004**	0.702	0.551	0.311	0.817
Intention	1.623	0.184	1.495	0.132	1.834	0.141	0.653	0.625	6.192	**0.000**	1.246	0.293	1.677	0.172
Subjective Norm	0.538	0.657	3.468	**0.000**	0.102	0.959	1.493	0.204	1.608	0.188	1.217	0.304	0.244	0.866
Image	0.336	0.799	1.327	0.209	0.357	0.784	0.310	0.871	1.744	0.158	0.596	0.618	0.706	0.549
Job Relevance	1.903	0.129	2.512	**0.005**	3.138	**0.026**	0.610	0.656	1.748	0.157	2.478	0.061	3.271	**0.022**
Output Quality	2.205	0.088	2.974	**0.001**	2.671	**0.048**	0.455	0.769	2.099	0.100	0.271	0.846	1.150	0.329
Result Demonstrability	1.418	0.238	0.826	0.615	1.576	0.195	0.892	0.469	2.373	0.070	0.493	0.687	0.988	0.399
Computer Self-efficacy	1.506	0.213	2.015	**0.027**	2.983	**0.032**	0.707	0.587	8.092	**0.000**	0.442	0.723	5.685	**0.001**
External Control	4.398	**0.005**	1.751	0.062	2.349	0.073	0.770	0.546	5.718	**0.001**	1.614	0.186	4.133	**0.007**
Computer Anxiety	2.485	0.061	1.013	0.435	0.699	0.553	2.108	0.080	4.082	**0.007**	1.471	0.223	2.086	0.102
Computer Playfulness	1.879	0.133	1.043	0.408	1.313	0.270	0.495	0.739	4.759	**0.003**	3.420	**0.018**	1.346	0.260
Enjoyment	2.377	0.070	1.253	0.252	2.336	0.074	0.223	0.925	3.334	**0.020**	1.322	0.267	2.667	**0.048**
Objective Usability	3.524	**0.015**	2.040	**0.025**	1.756	0.156	0.245	0.913	0.872	0.456	0.920	0.431	0.695	0.556
Management Support	3.086	**0.028**	4.901	**0.000**	1.531	0.206	0.120	0.975	2.713	**0.045**	0.252	0.860	1.498	0.215
Design Characteristics	2.650	**0.049**	1.394	0.175	1.408	0.241	0.431	0.786	1.366	0.253	0.771	0.511	1.587	0.193
Organizational support	2.039	0.109	8.093	**0.000**	0.892	0.445	0.354	0.841	2.074	0.104	1.183	0.316	3.835	**0.010**
Training	1.637	0.181	5.343	**0.000**	1.970	0.118	0.616	0.651	1.473	0.222	0.593	0.620	1.682	0.171
System Quality	1.663	0.175	5.342	**0.000**	0.966	0.409	0.302	0.877	1.223	0.302	0.994	0.396	0.827	0.480
Interactive Learning Activities	1.874	0.134	1.464	0.144	2.423	0.066	0.484	0.748	2.527	0.058	0.548	0.650	1.386	0.247
Effectiveness	1.898	0.130	2.115	**0.019**	4.072	**0.007**	0.466	0.760	3.404	**0.018**	1.677	0.172	1.682	0.171
Multimedia instruction	0.990	0.398	1.458	0.147	0.980	0.402	1.118	0.348	6.434	**0.000**	1.459	0.226	2.464	0.063
Satisfaction	3.638	**0.013**	3.900	**0.000**	4.378	**0.005**	0.257	0.905	1.704	0.166	0.507	0.678	2.320	0.075

Table 83: LSD test for Age differences among participants

(Usefulness, External Control, Objective Usability, Management Support, Design Characteristics, and Satisfaction)

Factors	Age	(J)	From 30-39		From 40-49		50 and more	
	(I)	Mean	(I-J)	Sig.	(I-J)	Sig.	(I-J)	Sig.
Usefulness	From 24-29	3.82	-0.234	0.162	**-.414(*)**	0.013	-0.079	0.643
	From 30-39	4.05			-0.180	0.062	0.155	0.128
	From 40-49	4.23					**.335(*)**	0.001
	50 and more	3.90						
External Control	From 24-29	3.85	-0.276	0.115	-0.198	0.255	0.083	0.640
	From 30-39	4.13			0.078	0.438	**.359(*)**	0.001
	From 40-49	4.05					**.281(*)**	0.008
	50 and more	3.77						
Objective Usability	From 24-29	3.43	-0.274	0.163	**-.407(*)**	0.038	-0.063	0.752
	From 30-39	3.70			-0.133	0.239	0.211	0.078
	From 40-49	3.83					**.344(*)**	0.004
	50 and more	3.49						
Management Support	From 24-29	3.60	**-.329(*)**	0.034	**-.448(*)**	0.004	-0.301	0.056
	From 30-39	3.93			-0.120	0.178	0.027	0.771
	From 40-49	4.05					0.147	0.114
	50 and more	3.90						
Design Characteristics	From 24-29	3.60	-0.099	0.571	-0.174	0.318	0.112	0.528
	From 30-39	3.70			-0.075	0.455	**.211(*)**	0.048
	From 40-49	3.77					**.286(*)**	0.007
	50 and more	3.49						
Satisfaction	From 24-29	3.90	0.051	0.790	-0.131	0.487	0.243	0.207
	From 30-39	3.85			-0.182	0.096	0.193	0.096
	From 40-49	4.03					**.375(*)**	0.001
	50 and more	3.66						

*. The mean difference is significant at the .05 level.

Table 84: LSD test for university differences among participants (Usefulness) and (Subjective Norm)

Factors	University	(J)	Islamic		Al-Azhar		Hebron		Bethlehem		Birzeit		Polytichnic		American		An-Najah		Al-Quds		Kadoori		Al-Aqsa	
	(I)	Mean	(I-J)	Sig.	(I-J)	Sig.	(I-J)	Sig.	(I-J)	Sig.	(I-J)	Sig.	(I-J)	Sig.	(I-J)	Sig.	(I-J)	Sig.	(I-J)	Sig.	(I-J)	Sig.	(I-J)	Sig.
Usefulness	Open U.	4.06	-0.335	0.060	0.000	1.000	-0.244	0.328	-0.178	0.477	-0.004	0.982	-0.126	0.600	-0.311	0.213	0.077	0.600	0.278	0.101	-0.150	0.510	0.179	0.324
	Islamic	4.39			0.335	0.076	0.091	0.717	0.157	0.530	0.331	0.068	0.209	0.388	0.024	0.923	.412(*)	0.006	.613(*)	0.000	0.186	0.416	.514(*)	0.005
	Al-Azhar	4.06					-0.244	0.343	-0.178	0.490	-0.004	0.983	-0.126	0.612	-0.311	0.227	0.077	0.629	0.278	0.124	-0.150	0.525	0.179	0.351
	Hebron	4.30							0.067	0.827	0.240	0.340	0.118	0.692	-0.067	0.827	0.322	0.162	.522(*)	0.033	0.095	0.741	0.423	0.095
	Bethlehem	4.23									0.174	0.490	0.052	0.863	-0.133	0.663	0.255	0.268	0.456	0.063	0.028	0.922	0.357	0.159
	Birzeit	4.06											-0.122	0.615	-0.307	0.223	0.081	0.591	0.282	0.103	-0.146	0.526	0.183	0.321
	Polytechnic	4.18													-0.185	0.536	0.203	0.356	0.404	0.087	-0.023	0.934	0.305	0.213
	American	4.37															0.388	0.092	.589(*)	0.016	0.162	0.574	0.490	0.054
	An-Najah	3.98																	0.201	0.147	-0.227	0.269	0.102	0.506
	Al-Quds	3.78																			-0.427	0.054	-0.099	0.571
	Kadoori	4.21																					0.329	0.155
	Al-Aqsa	3.88																						
Subjective Norm	Open U.	3.01	-.449(*)	0.011	-0.127	0.493	-0.367	0.139	-.667(*)	0.007	0.053	0.766	-.855(*)	0.000	-0.092	0.711	-0.066	0.649	-0.061	0.715	-.453(*)	0.045	0.147	0.413
	Islamic	3.46			0.321	0.086	0.082	0.742	-0.218	0.380	.502(*)	0.005	-0.407	0.091	0.357	0.151	.382(*)	0.010	.387(*)	0.022	-0.005	0.984	.596(*)	0.001
	Al-Azhar	3.14					-0.240	0.348	-.540(*)	0.035	0.180	0.340	-.728(*)	0.003	0.035	0.890	0.061	0.701	0.066	0.712	-0.326	0.163	0.274	0.150
	Hebron	3.38							-0.300	0.322	0.420	0.093	-0.489	0.099	0.275	0.364	0.300	0.188	0.306	0.208	-0.087	0.761	.514(*)	0.041
	Bethlehem	3.68									.720(*)	0.004	-0.189	0.524	0.575	0.058	.600(*)	0.009	.606(*)	0.013	0.213	0.454	.814(*)	0.001
	Birzeit	2.96											-.908(*)	0.000	-0.145	0.562	-0.119	0.425	-0.114	0.504	-.506(*)	0.027	0.094	0.606
	Polytechnic	3.86													.764(*)	0.010	.789(*)	0.000	.794(*)	0.001	0.402	0.148	1.003(*)	0.000
	American	3.10															0.025	0.911	0.031	0.900	-0.362	0.205	0.239	0.341
	An-Najah	3.07																	0.005	0.969	-0.387	0.058	0.214	0.159
	Al-Quds	3.07																			-0.392	0.074	0.208	0.228
	Kadoori	3.46																					.600(*)	0.009
	Al-Aqsa	2.86																						

*. The mean difference is significant at the .05 level.

Table 84: LSD test for university differences among participants cont.. (Job Relevance) and (Output Quality)

Factors	University	(J)	Islamic		Al-Azhar		Hebron		Bethlehem		Birzeit		Polytichnic		American		An-Najah		Al-Quds		Kadoori		Al-Aqsa	
	(I)	Mean	(I-J)	Sig.	(I-J)	Sig.	(I-J)	Sig.	(I-J)	Sig.	(I-J)	Sig.	(I-J)	Sig.	(I-J)	Sig.	(I-J)	Sig.	(I-J)	Sig.	(I-J)	Sig.	(I-J)	Sig.
Job Relevance	Open U.	4.08	-0.089	0.632	0.167	0.394	-0.317	0.225	-0.117	0.654	0.083	0.657	**.629(*)**	0.013	0.083	0.749	0.109	0.477	**.556(*)**	0.002	0.083	0.725	0.065	0.732
	Islamic	4.17			0.256	0.195	-0.228	0.385	-0.028	0.916	0.172	0.362	**.718(*)**	0.005	0.172	0.510	0.198	0.203	**.645(*)**	0.000	0.172	0.469	0.154	0.420
	Al-Azhar	3.92					-0.483	0.073	-0.283	0.292	-0.083	0.675	0.462	0.076	-0.083	0.756	-0.057	0.731	**.389(*)**	0.039	-0.083	0.735	-0.102	0.611
	Hebron	4.40							0.200	0.531	0.400	0.129	**.945(*)**	0.003	0.400	0.211	0.426	0.076	**.872(*)**	0.001	0.400	0.183	0.381	0.149
	Bethlehem	4.20									0.200	0.447	**.745(*)**	0.017	0.200	0.531	0.226	0.346	**.672(*)**	0.009	0.200	0.505	0.181	0.492
	Birzeit	4.00											**.545(*)**	0.032	0.000	1.000	0.026	0.869	**.472(*)**	0.009	0.000	1.000	-0.019	0.923
	Polytechnic	3.45													-0.545	0.081	**-.519(*)**	0.025	-0.073	0.766	-0.545	0.063	**-.564(*)**	0.028
	American	4.00															0.026	0.914	0.472	0.065	0.000	1.000	-0.019	0.944
	An-Najah	3.97																	**.446(*)**	0.002	-0.026	0.903	-0.044	0.780
	Al-Quds	3.53																			**-.472(*)**	0.042	**-.491(*)**	0.007
	Kadoori	4.00																					-0.019	0.939
	Al-Aqsa	4.02																						
Output Quality	Open U.	4.07	-0.175	0.356	0.067	0.738	-0.233	0.379	-0.083	0.753	0.335	0.081	0.158	0.538	-0.183	0.490	**.352(*)**	0.025	**.539(*)**	0.003	0.067	0.782	0.363	0.060
	Islamic	4.24			0.241	0.229	-0.059	0.826	0.091	0.732	**.509(*)**	0.009	0.332	0.197	-0.009	0.974	**.527(*)**	0.001	**.714(*)**	0.000	0.241	0.320	**.538(*)**	0.006
	Al-Azhar	4.00					-0.300	0.273	-0.150	0.583	0.268	0.186	0.091	0.731	-0.250	0.361	0.286	0.093	**.472(*)**	0.014	0.000	1.000	0.296	0.147
	Hebron	4.30							0.150	0.644	**.568(*)**	0.035	0.391	0.219	0.050	0.878	**.586(*)**	0.017	**.772(*)**	0.003	0.300	0.327	**.596(*)**	0.027
	Bethlehem	4.15									0.418	0.119	0.241	0.448	-0.100	0.758	0.436	0.075	**.622(*)**	0.017	0.150	0.624	0.446	0.098
	Birzeit	3.73											-0.177	0.494	-0.518	0.054	0.018	0.911	0.204	0.265	-0.268	0.272	0.028	0.885
	Polytechnic	3.91													-0.341	0.283	0.195	0.406	0.381	0.128	-0.091	0.760	0.205	0.430
	American	4.25															**.536(*)**	0.029	**.722(*)**	0.006	0.250	0.414	**.546(*)**	0.043
	An-Najah	3.71																	0.187	0.204	-0.286	0.190	0.011	0.948
	Al-Quds	3.53																			**-.472(*)**	0.045	-0.176	0.342
	Kadoori	4.00																					0.296	0.228
	Al-Aqsa	3.70																						

*. The mean difference is significant at the .05 level.

Table 84: LSD test for university differences among participants cont… (Computer Self-Efficacy) and (Objective Usability)

Factors	University (I) / (J)	Mean	Islamic (I-J)	Islamic Sig.	Al-Azhar (I-J)	Al-Azhar Sig.	Hebron (I-J)	Hebron Sig.	Bethlehem (I-J)	Bethlehem Sig.	Birzeit (I-J)	Birzeit Sig.	Polytichnic (I-J)	Polytichnic Sig.	American (I-J)	American Sig.	An-Najah (I-J)	An-Najah Sig.	Al-Quds (I-J)	Al-Quds Sig.	Kadoori (I-J)	Kadoori Sig.	Al-Aqsa (I-J)	Al-Aqsa Sig.
Computer Self-Efficacy	Open U.	4.32	0.023	0.881	0.239	0.147	-0.011	0.960	-0.011	0.960	**.417(*)**	0.009	0.262	0.217	0.156	0.479	**.262(*)**	0.044	**.489(*)**	0.001	0.117	0.557	**.335(*)**	0.037
	Islamic	4.30			0.216	0.194	-0.034	0.876	-0.034	0.876	**.394(*)**	0.014	0.238	0.263	0.132	0.549	0.238	0.070	**.466(*)**	0.002	0.094	0.640	0.311	0.054
	Al-Azhar	4.08					-0.250	0.269	-0.250	0.269	0.179	0.286	0.023	0.917	-0.083	0.713	0.023	0.871	0.250	0.115	-0.122	0.556	0.096	0.570
	Hebron	4.33							0.000	1.000	0.429	0.054	0.273	0.299	0.167	0.535	0.273	0.178	**.500(*)**	0.020	0.128	0.612	0.346	0.121
	Bethlehem	4.33									0.429	0.054	0.273	0.299	0.167	0.535	0.273	0.178	**.500(*)**	0.020	0.128	0.612	0.346	0.121
	Birzeit	3.90											-0.156	0.466	-0.262	0.237	-0.156	0.240	0.071	0.637	-0.300	0.137	-0.083	0.609
	Polytechnic	4.06													-0.106	0.686	0.000	1.000	0.227	0.273	-0.145	0.557	0.073	0.734
	American	4.17															0.106	0.600	0.333	0.121	-0.038	0.879	0.179	0.421
	An-Najah	4.06																	0.227	0.062	-0.145	0.423	0.073	0.587
	Al-Quds	3.83																			-0.372	0.057	-0.154	0.314
	Kadoori	4.21																					0.217	0.284
	Al-Aqsa	3.99																						
Objective Usability	Open U.	3.68	-0.334	0.108	-0.088	0.688	-0.117	0.688	-0.267	0.359	-0.031	0.882	-0.317	0.259	-0.267	0.359	0.294	0.087	0.156	0.429	-0.201	0.446	0.054	0.799
	Islamic	4.02			0.246	0.262	0.217	0.456	0.067	0.818	0.303	0.151	0.017	0.951	0.067	0.818	**.628(*)**	0.000	**.489(*)**	0.014	0.133	0.617	0.388	0.069
	Al-Azhar	3.77					-0.029	0.922	-0.179	0.549	0.057	0.798	-0.229	0.429	-0.179	0.549	**.381(*)**	0.041	0.243	0.247	-0.114	0.678	0.141	0.527
	Hebron	3.80							-0.150	0.673	0.086	0.770	-0.200	0.565	-0.150	0.673	0.410	0.125	0.272	0.339	-0.085	0.800	0.170	0.563
	Bethlehem	3.95									0.236	0.421	-0.050	0.886	0.000	1.000	**.560(*)**	0.037	0.422	0.138	0.065	0.845	0.320	0.277
	Birzeit	3.71											-0.286	0.313	-0.236	0.421	0.325	0.065	0.187	0.352	-0.170	0.523	0.085	0.693
	Polytechnic	4.00													0.050	0.886	**.610(*)**	0.018	0.472	0.085	0.115	0.723	0.370	0.193
	American	3.95															**.560(*)**	0.037	0.422	0.138	0.065	0.845	0.320	0.277
	An-Najah	3.39																	-0.138	0.390	**-.495(*)**	0.039	-0.240	0.178
	Al-Quds	3.53																			-0.357	0.166	-0.102	0.615
	Kadoori	3.88																					0.255	0.342
	Al-Aqsa	3.63																						

*. The mean difference is significant at the .05 level.

Table 84: LSD test for university differences among participants cont… (Management Support) and (Organizational Support)

Factors	University (I)	(J) Mean	Islamic (I-J)	Islamic Sig.	Al-Azhar (I-J)	Al-Azhar Sig.	Hebron (I-J)	Hebron Sig.	Bethlehem (I-J)	Bethlehem Sig.	Birzeit (I-J)	Birzeit Sig.	Polytichnic (I-J)	Polytichnic Sig.	American (I-J)	American Sig.	An-Najah (I-J)	An-Najah Sig.	Al-Quds (I-J)	Al-Quds Sig.	Kadoori (I-J)	Kadoori Sig.	Al-Aqsa (I-J)	Al-Aqsa Sig.
Manag. Support	Open U.	4.13	-0.177	0.254	**.775(*)**	0.000	-0.087	0.690	0.053	0.806	0.076	0.626	0.152	0.471	0.333	0.126	0.245	0.057	**.461(*)**	0.002	0.303	0.127	-0.030	0.851
	Islamic	4.31			**.952(*)**	0.000	0.090	0.679	0.230	0.292	0.253	0.109	0.329	0.120	**.510(*)**	0.020	**.422(*)**	0.001	**.638(*)**	0.000	**.480(*)**	0.016	0.147	0.355
	Al-Azhar	3.36					**-.862(*)**	0.000	**-.722(*)**	0.001	**-.699(*)**	0.000	**-.623(*)**	0.004	**-.442(*)**	0.050	**-.530(*)**	0.000	**-.314(*)**	0.046	**-.472(*)**	0.022	**-.805(*)**	0.000
	Hebron	4.22							0.140	0.599	0.163	0.458	0.238	0.360	0.420	0.116	0.332	0.098	**.548(*)**	0.010	0.389	0.121	0.057	0.796
	Bethlehem	4.08									0.023	0.917	0.098	0.706	0.280	0.294	0.192	0.339	0.408	0.056	0.249	0.320	-0.083	0.707
	Birzeit	4.06											0.075	0.722	0.257	0.242	0.169	0.199	**.385(*)**	0.011	0.226	0.258	-0.106	0.510
	Polytechnic	3.98													0.182	0.485	0.094	0.626	0.310	0.132	0.151	0.536	-0.181	0.395
	American	3.80															-0.088	0.659	0.128	0.548	-0.031	0.902	-0.363	0.100
	An-Najah	3.89																	0.216	0.073	0.058	0.747	**-.275(*)**	0.040
	Al-Quds	3.67																			-0.159	0.411	**-.491(*)**	0.001
	Kadoori	3.83																					-0.332	0.099
	Al-Aqsa	4.16																						
Org. Support	Open U.	4.26	-0.233	0.243	**1.477(*)**	0.000	-0.092	0.743	0.383	0.171	**.553(*)**	0.006	0.213	0.431	**.558(*)**	0.047	0.314	0.058	**.703(*)**	0.000	0.470	0.066	0.295	0.147
	Islamic	4.49			**1.710(*)**	0.000	0.141	0.615	**.616(*)**	0.029	**.786(*)**	0.000	0.446	0.101	**.791(*)**	0.005	**.547(*)**	0.001	**.936(*)**	0.000	**.703(*)**	0.006	**.528(*)**	0.010
	Al-Azhar	2.78					**-1.569(*)**	0.000	**-1.094(*)**	0.000	**-.924(*)**	0.000	**-1.264(*)**	0.000	**-.919(*)**	0.002	**-1.164(*)**	0.000	**-.774(*)**	0.000	**-1.007(*)**	0.000	**-1.182(*)**	0.000
	Hebron	4.35							0.475	0.166	**.645(*)**	0.023	0.305	0.363	0.650	0.059	0.405	0.116	**.794(*)**	0.004	0.562	0.082	0.387	0.173
	Bethlehem	3.88									0.170	0.548	-0.170	0.611	0.175	0.610	-0.070	0.786	0.319	0.244	0.087	0.788	-0.088	0.756
	Birzeit	3.71											-0.340	0.213	0.005	0.985	-0.239	0.157	0.150	0.438	-0.083	0.747	-0.258	0.213
	Polytechnic	4.05													0.345	0.303	0.101	0.684	0.490	0.064	0.257	0.413	0.082	0.763
	American	3.70															-0.245	0.342	0.144	0.598	-0.088	0.784	-0.263	0.354
	An-Najah	3.94																	**.389(*)**	0.012	0.156	0.496	-0.018	0.916
	Al-Quds	3.56																			-0.233	0.348	**-.407(*)**	0.037
	Kadoori	3.79																					-0.175	0.500
	Al-Aqsa	3.96																						

*. The mean difference is significant at the .05 level.

Table 84: LSD test for university differences among participants cont… (Training) and (System Quality)

Factors	University (I)	(J) Mean	Islamic (I-J)	Islamic Sig.	Al-Azhar (I-J)	Al-Azhar Sig.	Hebron (I-J)	Hebron Sig.	Bethlehem (I-J)	Bethlehem Sig.	Birzeit (I-J)	Birzeit Sig.	Polytichnic (I-J)	Polytichnic Sig.	American (I-J)	American Sig.	An-Najah (I-J)	An-Najah Sig.	Al-Quds (I-J)	Al-Quds Sig.	Kadoori (I-J)	Kadoori Sig.	Al-Aqsa (I-J)	Al-Aqsa Sig.
Training	Open U.	4.18	0.149	0.499	**1.342(*)**	0.000	-0.025	0.936	0.525	0.090	**.898(*)**	0.000	**.743(*)**	0.013	**.700(*)**	0.024	**.613(*)**	0.001	**.869(*)**	0.000	**.675(*)**	0.017	0.277	0.218
	Islamic	4.03			**1.193(*)**	0.000	-0.174	0.575	0.376	0.227	**.749(*)**	0.001	**.594(*)**	0.048	0.551	0.077	**.464(*)**	0.012	**.720(*)**	0.001	0.526	0.064	0.128	0.573
	Al-Azhar	2.83					**-1.367(*)**	0.000	**-.817(*)**	0.011	-0.443	0.061	-0.598	0.053	**-.642(*)**	0.045	**-.728(*)**	0.000	**-.472(*)**	0.035	**-.667(*)**	0.023	**-1.065(*)**	0.000
	Hebron	4.20							0.550	0.147	**.923(*)**	0.003	**.768(*)**	0.039	0.725	0.056	**.638(*)**	0.026	**.894(*)**	0.003	0.700	0.050	0.302	0.336
	Bethlehem	3.65									0.373	0.232	0.218	0.555	0.175	0.644	0.088	0.756	0.344	0.256	0.150	0.674	-0.248	0.429
	Birzeit	3.28											-0.155	0.607	-0.198	0.525	-0.285	0.128	-0.029	0.893	-0.223	0.432	**-.621(*)**	0.007
	Polytechnic	3.43													-0.043	0.907	-0.130	0.634	0.126	0.665	-0.068	0.844	-0.466	0.124
	American	3.48															-0.087	0.761	0.169	0.576	-0.025	0.944	-0.423	0.178
	An-Najah	3.56																	0.256	0.135	0.062	0.808	-0.336	0.076
	Al-Quds	3.31																			-0.194	0.478	**-.593(*)**	0.006
	Kadoori	3.50																					-0.398	0.164
	Al-Aqsa	3.90																						
System Quality	Open U.	3.93	-0.239	0.232	**1.031(*)**	0.000	-0.200	0.475	0.233	0.405	**.624(*)**	0.002	0.388	0.152	0.133	0.634	0.310	0.061	**.572(*)**	0.003	**.677(*)**	0.008	**.501(*)**	0.014
	Islamic	4.17			**1.270(*)**	0.000	0.039	0.889	0.472	0.094	**.863(*)**	0.000	**.627(*)**	0.022	0.372	0.186	**.549(*)**	0.001	**.811(*)**	0.000	**.916(*)**	0.000	**.740(*)**	0.000
	Al-Azhar	2.90					**-1.231(*)**	0.000	**-.797(*)**	0.006	-0.407	0.057	**-.643(*)**	0.022	**-.897(*)**	0.002	**-.721(*)**	0.000	**-.458(*)**	0.024	-0.354	0.181	**-.529(*)**	0.014
	Hebron	4.13							0.433	0.207	**.824(*)**	0.004	0.588	0.080	0.333	0.332	**.510(*)**	0.049	**.772(*)**	0.005	**.877(*)**	0.007	**.701(*)**	0.014
	Bethlehem	3.70									0.390	0.168	0.155	0.645	-0.100	0.771	0.077	0.766	0.339	0.217	0.444	0.170	0.268	0.346
	Birzeit	3.31											-0.236	0.388	-0.490	0.083	-0.314	0.064	-0.052	0.790	0.053	0.837	-0.123	0.554
	Polytechnic	3.55													-0.255	0.448	-0.078	0.753	0.184	0.486	0.289	0.358	0.113	0.680
	American	3.80															0.177	0.493	0.439	0.110	0.544	0.093	0.368	0.196
	An-Najah	3.62																	0.262	0.091	0.367	0.111	0.191	0.265
	Al-Quds	3.36																			0.105	0.673	-0.071	0.716
	Kadoori	3.26																					-0.176	0.498
	Al-Aqsa	3.43																						

*. The mean difference is significant at the .05 level.

Table 84: LSD test for university differences among participants cont.. (Effectiveness) and (Satisfaction)

Factors	University	(J)	Islamic		Al-Azhar		Hebron		Bethlehem		Birzeit		Polytichnic		American		An-Najah		Al-Quds		Kadoori		Al-Aqsa	
	(I)	Mean	(I-J)	Sig.	(I-J)	Sig.	(I-J)	Sig.	(I-J)	Sig.	(I-J)	Sig.	(I-J)	Sig.	(I-J)	Sig.	(I-J)	Sig.	(I-J)	Sig.	(I-J)	Sig.	(I-J)	Sig.
Effectiveness	Open U.	4.29	0.013	0.945	0.192	0.336	-0.411	0.122	0.122	0.645	0.337	0.079	0.289	0.260	0.489	0.066	**.328(*)**	0.037	**.511(*)**	0.005	0.135	0.576	0.351	0.070
	Islamic	4.28			0.179	0.373	-0.424	0.112	0.109	0.682	0.323	0.094	0.276	0.284	0.476	0.075	**.315(*)**	0.048	**.498(*)**	0.006	0.122	0.615	0.338	0.083
	Al-Azhar	4.10					**-.603(*)**	0.028	-0.069	0.800	0.145	0.474	0.097	0.713	0.297	0.278	0.136	0.423	0.319	0.096	-0.057	0.821	0.159	0.436
	Hebron	4.70							0.533	0.102	**.748(*)**	0.006	**.700(*)**	0.028	**.900(*)**	0.006	**.739(*)**	0.003	**.922(*)**	0.000	0.546	0.075	**.762(*)**	0.005
	Bethlehem	4.17									0.214	0.424	0.167	0.600	0.367	0.260	0.206	0.400	0.389	0.135	0.013	0.967	0.228	0.396
	Birzeit	3.95											-0.048	0.854	0.152	0.569	-0.009	0.957	0.175	0.341	-0.201	0.409	0.014	0.943
	Polytechnic	4.00													0.200	0.529	0.039	0.868	0.222	0.375	-0.154	0.606	0.062	0.812
	American	3.80															-0.161	0.510	0.022	0.932	-0.354	0.248	-0.138	0.607
	An-Najah	3.96																	0.183	0.212	-0.193	0.377	0.023	0.889
	Al-Quds	3.78																			-0.376	0.111	-0.160	0.386
	Kadoori	4.15																					0.216	0.380
	Al-Aqsa	3.94																						
Satisfaction	Open U.	4.21	-0.102	0.599	**.542(*)**	0.008	-0.167	0.541	0.483	0.077	**.664(*)**	0.001	0.390	0.138	0.283	0.299	0.277	0.086	**.750(*)**	0.000	0.228	0.358	**.569(*)**	0.004
	Islamic	4.31			**.644(*)**	0.002	-0.065	0.813	**.585(*)**	0.033	**.766(*)**	0.000	0.492	0.063	0.385	0.160	**.379(*)**	0.020	**.852(*)**	0.000	0.330	0.186	**.671(*)**	0.001
	Al-Azhar	3.67					**-.708(*)**	0.012	-0.058	0.835	0.122	0.556	-0.152	0.577	-0.258	0.358	-0.265	0.129	0.208	0.290	-0.314	0.222	0.028	0.894
	Hebron	4.38							0.650	0.052	**.830(*)**	0.003	0.557	0.088	0.450	0.178	0.443	0.078	**.917(*)**	0.001	0.394	0.209	**.736(*)**	0.008
	Bethlehem	3.73									0.180	0.512	-0.093	0.775	-0.200	0.549	-0.207	0.410	0.267	0.318	-0.256	0.415	0.086	0.755
	Birzeit	3.54											-0.274	0.303	-0.380	0.167	**-.387(*)**	0.019	0.086	0.646	-0.436	0.082	-0.094	0.639
	Polytechnic	3.82													-0.107	0.743	-0.114	0.636	0.360	0.162	-0.163	0.595	0.179	0.502
	American	3.93															-0.007	0.978	0.467	0.081	-0.056	0.859	0.286	0.300
	An-Najah	3.93																	**.473(*)**	0.002	-0.049	0.827	0.293	0.080
	Al-Quds	3.46																			**-.522(*)**	0.031	-0.181	0.342
	Kadoori	3.98																					0.342	0.175
	Al-Aqsa	3.64																						

*. The mean difference is significant at the .05 level.

Table 85: LSD test for experience differences among participants

(Job Relevance, Output Quality, Computer Self-Efficacy, Effectiveness, and Satisfaction)

Factors	Experience	(J)	From 6-10		From 11-15		16 or more	
	(I)	Mean	(I-J)	Sig.	(I-J)	Sig.	(I-J)	Sig.
Job Relevance	5 or less	4.06	0.076	0.499	0.011	0.929	**.315(*)**	0.007
	From 6-10	3.99			-0.064	0.600	**.239(*)**	0.032
	From 11-15	4.05					**.304(*)**	0.017
	16 or more	3.75						
Output Quality	5 or less	3.96	0.064	0.577	-0.021	0.872	**.286(*)**	0.017
	From 6-10	3.90			-0.085	0.499	0.222	0.053
	From 11-15	3.98					**.307(*)**	0.019
	16 or more	3.68						
Computer Self-Efficacy	5 or less	4.10	-0.034	0.712	-0.133	0.213	0.166	0.086
	From 6-10	4.13			-0.098	0.340	**.201(*)**	0.031
	From 11-15	4.23					**.299(*)**	0.005
	16 or more	3.93						
Effectiveness	5 or less	4.11	0.091	0.421	-0.161	0.209	**.267(*)**	0.023
	From 6-10	4.02			**-.252(*)**	0.042	0.176	0.116
	From 11-15	4.27					**.428(*)**	0.001
	16 or more	3.85						
Satisfaction	5 or less	4.06	**.256(*)**	0.032	0.055	0.684	**.402(*)**	0.001
	From 6-10	3.80			-0.201	0.125	0.146	0.217
	From 11-15	4.00					**.347(*)**	0.010
	16 or more	3.65						

*. The mean difference is significant at the .05 level.

Table 86: LSD test for internet usage differences among participants

(Ease of Use, Intention, Computer Self-Efficacy, Perception of External Control, Computer Anxiety, Playfulness, Enjoyment, Management Support, Effectiveness, and Multimedia Instruction)

Factors	Internet Use	(J)	From 4-6		From 7-9		10 or more	
	(I)	Mean	(I-J)	Sig.	(I-J)	Sig.	(I-J)	Sig.
Ease of Use	From 1-3	3.62	**-.275(*)**	0.004	-0.216	0.182	0.338	0.119
	From 4-6	3.90			0.059	0.721	**.613(*)**	0.005
	From 7-9	3.84					**.554(*)**	0.030
	10 or more	3.29						
Intention	From 1-3	3.99	**-.328(*)**	0.000	**-.380(*)**	0.007	-0.128	0.496
	From 4-6	4.32			-0.051	0.721	0.200	0.293
	From 7-9	4.37					0.251	0.257
	10 or more	4.12						
Computer Self-Efficacy	From 1-3	3.93	**-.284(*)**	0.000	**-.486(*)**	0.000	-0.090	0.587
	From 4-6	4.22			-0.202	0.110	0.194	0.247
	From 7-9	4.42					**.396(*)**	0.043
	10 or more	4.02						
Perception of External Control	From 1-3	3.81	**-.348(*)**	0.000	**-.313(*)**	0.035	-0.237	0.231
	From 4-6	4.16			0.035	0.818	0.111	0.580
	From 7-9	4.12					0.076	0.745
	10 or more	4.05						
Computer Anxiety	From 1-3	1.56	**.229(*)**	0.001	0.221	0.058	0.117	0.451
	From 4-6	1.33			-0.008	0.947	-0.112	0.476
	From 7-9	1.34					-0.104	0.570
	10 or more	1.45						
Playfulness	From 1-3	4.08	**-.260(*)**	0.002	**-.377(*)**	0.007	-0.030	0.871
	From 4-6	4.34			-0.117	0.408	0.230	0.220
	From 7-9	4.45					0.347	0.112
	10 or more	4.11						
Enjoyment	From 1-3	3.80	**-.213(*)**	0.024	**-.431(*)**	0.007	-0.196	0.357
	From 4-6	4.02			-0.218	0.181	0.017	0.937
	From 7-9	4.23					0.235	0.350
	10 or more	4.00						
Management Support	From 1-3	3.85	**-.189(*)**	0.016	-0.250	0.060	0.032	0.855
	From 4-6	4.04			-0.061	0.652	0.221	0.215
	From 7-9	4.10					0.282	0.175
	10 or more	3.81						
Effectiveness	From 1-3	3.91	**-.234(*)**	0.010	**-.383(*)**	0.013	-0.158	0.441
	From 4-6	4.15			-0.149	0.340	0.075	0.716
	From 7-9	4.30					0.225	0.352
	10 or more	4.07						
Multimedia Instruction	From 1-3	3.84	**-.330(*)**	0.000	**-.439(*)**	0.003	-0.084	0.667
	From 4-6	4.18			-0.109	0.463	0.247	0.210
	From 7-9	4.28					0.355	0.121
	10 or more	3.93						

*. The mean difference is significant at the .05 level.

Table 87: LSD test for internet speed differences among participants
(Playfulness)

Factors	Internet Speed (I)	(J) Mean	2M (I-J)	2M Sig.	4M (I-J)	4M Sig.	8M or more (I-J)	8M or more Sig.
Playfulness	1M or less	4.21	0.101	0.361	-0.051	0.668	-0.271	0.054
	2M	4.10			-0.152	0.103	**-.372(*)**	0.002
	4M	4.26					-0.220	0.084
	8M or more	4.48						

*. The mean difference is significant at the .05 level.

Table 88: LSD test for computer usage differences among participants
(Job Relevance, Computer Self-Efficacy, Perception of External Control, Enjoyment, and Organizational Support)

Factors	Computer Use (I)	(J) Mean	From 4-6 (I-J)	From 4-6 Sig.	From 7-9 (I-J)	From 7-9 Sig.	10 or more (I-J)	10 or more Sig.
Job Relevance	From 1-3	3.84	**-.206(*)**	0.024	**-.371(*)**	0.008	-0.159	0.544
	From 4-6	4.05			-0.165	0.252	0.047	0.860
	From 7-9	4.21					0.212	0.458
	10 or more	4.00						
Computer Self-Efficacy	From 1-3	3.96	**-.269(*)**	0.000	**-.277(*)**	0.016	-0.420	0.054
	From 4-6	4.22			-0.008	0.946	-0.151	0.492
	From 7-9	4.23					-0.143	0.545
	10 or more	4.38						
Perception of External Control	From 1-3	3.87	**-.240(*)**	0.008	-0.144	0.292	**-.675(*)**	0.009
	From 4-6	4.11			0.096	0.499	-0.436	0.096
	From 7-9	4.01					-0.532	0.059
	10 or more	4.54						
Enjoyment	From 1-3	3.83	-0.157	0.101	**-.342(*)**	0.020	-0.420	0.130
	From 4-6	3.99			-0.184	0.227	-0.262	0.349
	From 7-9	4.17					-0.078	0.795
	10 or more	4.25						
Organizational Support	From 1-3	3.71	**-.332(*)**	0.002	**-.328(*)**	0.044	-0.290	0.346
	From 4-6	4.04			0.004	0.980	0.042	0.892
	From 7-9	4.04					0.038	0.910
	10 or more	4.00						

*. The mean difference is significant at the .05 level.

Table 89: Distribution of Gender.

Variable	Characteristic of the Variable	Frequency	Percent
Gender			

Table 90: Distribution of Age.

Variable	Characteristic of the Variable	Frequency	Percent
Age	From 24 - 29 years old	20	6.6%
	From 30 - 39 years old	98	32.1%
	From 40 - 49 years old	104	34.1%
	More than 50 years old	83	27.2%
	Total	305	100.0%

Table 91: Distribution of Universities.

Variable	Characteristic of the Variable	Frequency	Percent
University Where You are Lecturing	A-Quds Open University	30	9.8%
	Islamic University	29	9.5%
	Al-Azhar University	24	7.9%
	Hebron University	10	3.3%
	Bethlehem University	10	3.3%
	Birzeit University	28	9.2%
	Palestine Polytechnic University	11	3.6%
	The Arab American University	10	3.3%
	An-Najah National University	77	25.2%
	Al-Quds University	36	11.8%
	Palestine Technical University-Kadoori	13	4.3%
	Al Aqsa University	27	8.9%
	Total	305	100.0%

Table 92: Distribution of Colleges.

Variable	Characteristic of the Variable	Frequency	Percent
The Nature of your College	Natural Science	150	49.2%
	Human Science	155	50.8%
	Total	305	100.0%

Table 93: Distribution of Teaching Experiences.

Variable	Characteristic of the Variable	Frequency	Percent
Teaching Experience in the Universities	Equal or less than 5 years	77	25.2%
	From 6 - 10 years	92	30.2%
	from 11 - 15 years	56	18.4%
	Equal or more than 16 years	80	26.2%
	Total	305	100.0%

Table 94: Distribution of Educational Levels.

Variable	Characteristic of the Variable	Frequency	Percent
Academic Rank	Instructor	51	16.7%
	Lecturer	73	23.9%
	Assistant Professor	131	43.0%
	Associate Professor	36	11.8%
	Full Professor	14	4.6%
	Total	305	100.0%

Table 95: Distribution of Internet Usage.

Variable	Characteristic of the Variable	Frequency	Percent
How many hours are you using internet per day	From 1 - 3 hours	146	47.9%
	From 4 - 6 hours	118	38.7%
	From 7 - 9 hours	27	8.9%
	More than 10 hours	14	4.6%
	Total	305	100.0%

Table 96: Distribution of Internet Speed.

Variable	Characteristic of the Variable	Frequency	Percent
The internet speed that used	Equal or less than 1M	50	16.4%
	2 M	130	42.6%
	4 M	84	27.5%
	Equal or more than 8M	41	13.4%
	Total	305	100.0%

Table 97: Distribution of Computer Usage.

Variable	Characteristic of the Variable	Frequency	Percent
Number of hours of use a computer at work every day	From 1 - 3 hours	157	51.5%
	From 4 - 6 hours	107	35.1%
	From 7 - 9 hours	33	10.8%
	More than 10 hours	8	2.6%
	Total	305	100.0%

Table 98: Distribution of Voluntary Use of e-Learning.

Variable	Characteristic of the Variable	Frequency	Percent
Is the use of e-Learning voluntary at university	Yes	267	87.5%
	No	38	12.5%
	Total	305	100.0%

Table 99: Distribution of Lectures Prepared in Holidays.

Variable	Characteristic of the Variable	Frequency	Percent
There are e-Learning lectures that delivered in holidays	Yes	56	18.4%
	No	249	81.6%
	Total	305	100.0%

Table 100: Qualitative Data Where been Displayed in an Organized Condensed Manner

Category	Subcategory	The viewpoint of specialists at universities											
		Open U.	Islamic	Al-Azhar	Hebron	Bethlehem	Birzeit	Polytechnic	American	An-Najah	Al-Quds	Kadoori	Al-Aqsa
e-Learning tools and applications used: Synchronous from (1-6) / Asynchronous From (7-14)	1- Chat	N/A	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No
	2- Audio Conference	N/A	Yes	Yes	Yes	No	Yes	No	Yes	Yes	No	Yes	No
	3- Video Conference	N/A	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes	No	No
	4- Web Conference video/audio conferencing	N/A	No	Yes	Yes	No	Yes	No	Yes	Yes	No	No	No
	5- White Board	N/A	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes	Yes
	6- Satellite Programs	N/A	No	No	No	No	No	No	No	No	No	No	No
	7- E-mail	N/A	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
	8- World Wide Web	N/A	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	No
	9- Web-Based Learning	N/A	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
	10- Mailing List	N/A	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	No	No
	11- Discussion Groups	N/A	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	No
	12- File Exchange	N/A	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
	13- Interactive Video	N/A	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
	14- CD	N/A	Yes	No	Yes	Yes	Yes	No	Yes	Yes	No	No	No

Table 100: Qualitative Data Where been Displayed in an Organized Condensed Manner Cont..

Category	Subcategory	The viewpoint of specialists at universities											
		Open U.	Islamic	Al-Azhar	Hebron	Bethlehem	Birzeit	Polytechnic	American	An-Najah	Al-Quds	Kadoori	Al-Aqsa
The readiness of infrastructure	The existence of e-Learning center or unit in the university	Yes	Yes	Yes, recently	Yes	No	No	No	No	Yes	Yes	Yes	No
	University ready for the success of e-Learning experience	Yes	Yes, but internally for students	Yes, but need to more support	Yes	Yes, but need to develop Wi-Fi	Yes	Yes, but need to support	No, Need a Wi-Fi network	Yes, but need to provide students with computers	Yes	Yes, but need develop greatly	Yes, but only Technically
	The availability of the necessary ICT equipment, tools, and applications	Yes	Yes, but need protection system	Need to develop	Need to develop	Yes	Yes	Need to develop	Need to develop	Need to develop according to needs	Yes, but need to enhance internet	Need to develop	Yes, and can be developed
The definition of e-Learning in the university		N/A	provide students with scientific material such as (recorded lectures, forums, discussions, and enrichment materials) through the Internet, asynchronously currently	The use of advanced tools of computers, videos, paintings smart and online lectures	E-learning support tool, so technology being adapted in the educational process	Is a way to enrich the learning process through the use of modern technology and its tools	is a supportive tool for traditional educational process by providing a content and electronic communication tools	Is a way to support communication between lecturer and student, and the transfer of information to the student using technological means in order to save time and effort	Computerization of files and tasks between students and teachers	The use of the latest technology in education, the transition from education to the learning process	Intended to use the blended learning and the use of some technology to enhance traditional teaching	Platform to upload and download files, and interaction between lecturers and students electronically	No Answer

Table 100: Qualitative Data Where been Displayed in an Organized Condensed Manner Cont..

Category	Subcategory	The viewpoint of specialists at universities											
		Open U.	Islamic	Al-Azhar	Hebron	Bethlehem	Birzeit	Polytechnic	American	An-Najah	Al-Quds	Kadoori	Al-Aqsa
e-Learning challenges and obstacles in the university	Perceptions of lecturers about e-Learning system	N/A	Some see a burden, most find attractive	Important but need support, and need to Application	Varies based on lecturers nature	Elderly fears and anxiety, Some like it and believe time saving after application	Number of lecturers use it but not enough	Attractive to IT lecturers, Some perceived not usefulness, some who fears experiment	Efforts and time consuming, need computer skills, lack ease of use	Acceptable system , good interactive , ease of use, but burden increased	Most preferred traditional, but some willing to use asynchronous tools	Good tool for communication and facilitate connectivity to the resources	Lack lecturers perceptions and a awareness toward e-Learning usefulness
	Factors affecting lecturers in using e-Learning	N/A	Technology anxiety, and lack self-efficacy. technical support weakness	System acceptance, fear of being laid off, lack technology self-efficiency	Lecturers ages, technology self-efficacy	Time and effort needed, technology anxiety and self-efficacy, technical support, subjective norm	The need to use, Voluntary vs mandatory in using moodle	Intention to use, Fear of experiment, fear of failure, computer anxiety, voluntary use, need more efforts	Motivation, training, computer self-efficacy, Internet availability in homes	Lecturers ages, computer self-efficacy, technology anxiety, students perceptions technical support	Technology self-efficacy	Computer self-efficacy, time available	Perceived Usefulness, Training
	Challenges facing e-Learning system implementation	N/A	Voluntary use training demanded computerization of education, aware of e-learning importance absorbing new technology	Power outages	no governmental laws governing e-Learning	Adequate technical support, providing time for e-Learning usage, motivations and incentives availability	Technology Self-efficacy, Training lecturers to use	Overcoming the lack of Internet and computers in homes, self-efficacy in computer use, promote the use of e-learning	Culture of change, Incentive system	Training, facilities availability, nature of colleges, university policies, Availability of computers for all students	Management support, electronic courses development, Lack of technical staff	Motivate staff, culture of change	No Answer

Table 100: Qualitative Data Where been Displayed in an Organized Condensed Manner Cont..

Category	Subcategory	The viewpoint of specialists at universities											
		Open U.	Islamic	Al-Azhar	Hebron	Bethlehem	Birzeit	Polytechnic	American	An-Najah	Al-Quds	Kadoori	Al-Aqsa
Culture of change	The model applied to promote culture of change toward e-Learning system	N/A	Not applied	Yes, applied in Science and Education faculties	Yes applied	Yes applied	Yes, but not adequate	Not applied	Not applied	Yes applied	Yes applied	Not applied	Not applied
	The university strategy to adopt e-Learning system	N/A	Recording lectures, reduce number of students in classrooms, activate the use of Moodle	Lectures recorded, interactive book	Determine what proportion teaches electronically in Courses, develop standards for courses design and evaluation	Make it part of the strategic plan, technology usage mandatory in education, set up a specialized division	Force lecturers to use Moodle, motivate them to use other tools	Voluntary use, apply new technology later	Not exist	Apply new technology, develop motivation system, standardized evaluation, develop ICT, enhance training contents	Adopt blended learning	Training and motivating staff	Currently provide the necessary equipments and tools for adoption Near future

Table 100: Qualitative Data Where been Displayed in an Organized Condensed Manner Cont..

Category	Subcategory	The viewpoint of specialists at universities											
		Open U.	Islamic	Al-Azhar	Hebron	Bethlehem	Birzeit	Polytechnic	American	An-Najah	Al-Quds	Kadoori	Al-Aqsa
Management support and organizational interventions to ensure e-Learning adoption	Management commitment to support system	N/A	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes
	Motivate their staff to use e-Learning	N/A	Yes	Yes, but not sufficient	Yes	Yes	Yes, but not sufficient	No	No, but individual efforts	Yes	Yes	Yes, but not sufficient	No
	Provide appropriate physical resources	N/A	Yes, but not sufficient	Yes, but not sufficient	Yes	Yes, but not sufficient	Yes	No	No	Yes	Yes, but not sufficient	Yes, but not sufficient	Yes
	The University provides adequate financial support for the implementation of e-Learning system	N/A	Yes, but not sufficient	Yes recently, but not sufficient	Yes	Yes, but not sufficient	Yes, but need to be centralized	No	No	Yes	Yes, but not sufficient	Yes, but not sufficient	So far, not because it is not applicable
	The existence of clear policies to adopt e-Learning	N/A	Yes, but not clear enough	Not exist	Yes	Yes, but not clear enough	Yes, but not clear enough	No exist	Not exist	Yes, depends gradient	Not exist	Not exist	Not exist

Appendix C: Research Tools

Questionnaire of

A Framework for e-Learning Acceptance

A Case Study of the Palestinian Universities

Dear Dr.

This research aims to investigate the critical factors influencing lecturers' satisfaction for adopting e-Learning in Palestinian universities, and then introduce a framework for acceptance of E-learning that may lead Palestinian universities to formulate new strategies to adopt e-Learning, in coordination with the relevant institutions, in order to achieve the desired success based on the proposed framework.

e-Learning: Is broadly inclusive of all forms of learning and teaching supported electronically, which employs electronic media that deliver (text, audio, images, animation, and streaming video, and includes technology applications and processes such as audio or video tape, satellite TV, CD-ROM, and computer-based learning, as well as local intranet/extranet and web-based learning), and information and communication technologies (ICT) in education.

We believe that you are the best source provides us with the necessary information to achieve the objectives of this research, thus contributing to the development of our educational institutions. We all hope to find more cooperation from you through filling this questionnaire. We pledge not to brief identity of the participants to a third party, as well as not use these information in any field except scientific research.

Best Regards,

Researcher: Fareed Al-Sayyid

Part One: Personal Information:

Gender: ☐ Male ☐ Female

Age: ☐ 21-30 ☐ 31-40 ☐ 41-50 ☐ over 51

Your University: ………………….

Your Faculty/Centre: ……………………..

Teaching Experience in the university:

☐ 1-5 ☐ 6-10 ☐ 11-15 ☐ more than 16

Academic Rank:

☐ Instructor ☐ Lecturer ☐ Assistant Professor

☐ Associate Professor ☐ Full Professor

Part Two: Technology Usage:

How many hours are you using Internet per day: ………….

Internet speed used:

☐ 1M or less ☐ 2M ☐ 4M ☐ 8M or more

How many hours per day using a computer at work: ………………

Do you use e-Learning voluntary at your university: ☐ Yes ☐ No

There are lectures conducted in Holidays (eg: Friday, etc): ☐Yes ☐No

Part Three: Please select the appropriate choice that best describe your perception of e-Learning

Factor	Questions	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Usefulness	Using e-Learning makes my lifestyle easier					
	Using e-Learning improves my performance in my job					
	I believe e-Learning is a useful learning tool					
Ease to Use	My interaction with e-Learning system is clear and understandable					
	Interacting with the e-Learning system does not require a lot of my mental effort					
	I find e-Learning system easy to use					
Intention	Assuming I had access to the e-Learning system, I intend to use it.					
	If significant barriers did not exist, I would use e-Learning system					
	I'm willing to go voluntarily to expertise e-Learning technology					
Subjective Norm	People who are important to me think that I should use the e-Learning system					
	My decision to adopt e-Learning technology influenced by my friends					
	My decision to adopt e-Learning system influenced by the viewpoint of students to this system					
	My colleagues who influence my behavior think that I should use the e-Learning system					
Image	Lecturers in my university who use the E-learning system have more prestige than those who do not					
	Lecturers in my university who use the e-Learning system have a high profile that influence their promotion					
	Lecturers obtain a financial incentives when they use e-Learning system					
Job Relevance	In my job, usage of the e-Learning system is important					
	The use of the e-Learning system is pertinent to my various job-related tasks					
Factor	Questions	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Output Quality	The quality of the output I get from the e-Learning system is high					
	I expect the quality of future e-Learning system to be high					
Result Demonstrability	I believe I could communicate to others the consequences of using e-Learning system					
	The results of using the e-Learning system are apparent to me					
Computer Self-efficacy	I feel confident finding information in the e-Learning system					
	I have the necessary skills for using an e-Learning system					
	I could complete the job using E-Leaning's applications, if someone showed me how to do it first					
External	I have control over using the E-Leaning system					

Control	I have the resources, opportunities and knowledge necessary to use e-Learning					
	The E-Leaning system is compatible with other systems I use					
Computer Anxiety	Computers do not scare me at all					
	Working with a computer not makes me nervous					
	I haven't avoided computers because they are not intimidating to me					
	I feel computers are necessary tools in both educational and work settings					
Computer Playfulness	I would be creative when using a computer					
	I wouldn't be bored when using a computer					
	I would be playful when using a computer					
	I would be flexible when using a computer					
Enjoyment	I find using E-Leaning system to be enjoyable					
	The actual process of using multimedia in E-Leaning system is pleasant					
	I have fun using the E-Leaning system					
Objective Usability	I can get the task done as scheduled when using e-Learning system					
	The tasks not require more effort to be accomplished when using e-Learning system					
Management Support	managerial support is more effective for e-Learning system implementation					
	Direct management support are important in creating favorable perceptions toward e-Learning system					
	The university established a senior position or positions specifically for e-Learning management					
	The university have appropriate policies outlining the intellectual property of course material					
	Most of our e-Learning technology services are supported through a centralized system					
Factor	Questions	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Design Characteristics	The design characteristics of e-Learning system remain stable throughout the implementations process					
	e-Learning applications and elaborations are not difficult to understand and use					
Organizational support	The University provides telecommunications equipment and computer resources to use e-Learning					
	The University support and encourage staff to use e-Learning system					
	Help is available from the university when I have a problem in using e-Learning system					
	the University provides educational seminars and interviews that help to using e-Learning system					
Training	The kind of training in using of e-Learning system that provided to me was complete					
	My level of understanding e-Learning system was substantially improved after going through the training program					
	The training gave me confidence in the e-Learning system					
	The trainers aided me in my understanding of e-					

	Learning system					
System Quality	I am satisfied with e-Learning functions					
	I am satisfied with e-Learning content					
	I am satisfied with e-Learning interaction					
Interactive Learning Activities	I would like to share my e-Learning experience					
	I believe e-Learning can assist teacher-learner interaction					
	I believe e-Learning can assist learner-learner interaction					
Effectiveness	I believe e-Learning can assist learning efficiency					
	I believe e-Learning can assist learning performance					
	I believe e-Learning can assist learning motivation					
Multimedia instruction	I like to use voice media instruction					
	I like to use video media instruction					
	I like to use multimedia instruction					
Satisfaction	I am satisfied with using e-Learning as a learning assisted tool					
	I am satisfied with using e-Learning functions					
	I am satisfied with e-Learning contents					
	I am satisfied with multimedia instruction					

Other Notes: ....

Hanks

استبانة حول إطار عمل لتقبل التعلم الإلكتروني

حالة دراسية للجامعات الفلسطينية

عزيزي الدكتور/ تحية طيبة وبعد:

يسعى الباحث في هذه الاستبانة الى دراسة العوامل المؤثرة في تحقيق رضا المحاضرين في الجامعات الفلسطينية حيال تبني التعلم الإلكتروني، ومن ثم الوصول الى نطاق عمل يقود الجامعات الفلسطينية الى صياغة استراتيجيات تساعد في تبني وتقبل تكنولوجيا التعلم الإلكتروني، وذلك بالتنسيق مع المؤسسات ذات الصلة ، بهدف تحقيق النجاح المنشود على أساس نطاق العمل المقترح.

ويقصد بالتعلم الإلكتروني في مفهومه الشامل: كل أشكال التعلم والتعليم المدعومة إلكترونيا، والذي يوظف الوسائط الإلكترونية المتعددة من (نصوص، وصوت، وصور، ورسوم متحركة، ولقطات فيديو) وكذلك تشمل تطبيقات وعمليات تكنولوجية مثل : (أشرطة الصوت أو الفيديو، الأقمار الصناعية، أقراص الليزر CD، التعليم باستخدام الحاسوب، التعليم عن طريق شبكات النت المحلية، سواء الانترانت الداخلية أو الإكسترانت، التعليم عن طريق صفحات الانترنت) **إضافة الى كونها توظف تكنولوجيا المعلومات والاتصالات (ICT) في التعليم.**

ونحن نعتقد أنكم أفضل مصدر يوفر لنا المعلومات اللازمة لتحقيق أهداف هذا البحث، مما يسهم في تطوير مؤسساتنا التعليمية، لذلك كلنا أمل أن نجد تعاونا منكم في تعبئة هذه الاستبانة. ونتعهد لكم بالمحافظة على عدم إظهار هوية المشاركين في هذه الاستبانة الى أي طرف ثالث، وكذلك إلى عدم استخدام هذه المعلومات في أي مجال عدا البحث العلمي.

ولكم جزيل الشكر والعرفان

الباحث: فريد سمير السيد

جامعة النجاح الوطنية – ماجستير إدارة هندسية

الجزء الأول: المعلومات الشخصية:

الجنس: ☐ ذكر ☐ أنثى

العمر: ☐ من 24-29 ☐ من 30-39 ☐ من 40-49 ☐ 50 فأكثر

الجامعة التي تحاضر فيها: ....

الكلية التي تحاضر فيها: ....

سنوات العمل في الجامعة:

☐ 5 سنوات فأقل ☐ من 6-10 ☐ من 11-15 ☐ 16 سنة فأكثر

الرتبة العلمية: ☐ مدرس ☐ محاضر ☐ أستاذ مساعد

☐ أستاذ مشارك ☐ أستاذ

الجزء الثاني: استخدام التكنولوجيا:

كم ساعة تستخدم الانترنت يوميا: (.................) ساعة

سرعة الانترنت المستخدمة: ☐ 1M فأقل ☐ 2M ☐ 4M ☐ 8M فأكثر

عدد ساعات استخدامك للحاسوب في العمل يوميا: (.................) ساعة

استخدامك للتعلم الإلكتروني في جامعتك أمر طوعي "باختيارك": ☐ نعم ☐ لا

يتم إلقاء محاضرات التعلم الإلكتروني في أيام العطل (جمعة وسبت والعطل الرسمية): ☐ نعم ☐ لا

الجزء الثالث: أرجو اختيار الدرجة التي تتناسب مع تصوراتك لنظام التعلم الإلكتروني في الجامعة:

المتغير	السؤال	أوافق بشدة	أوافق	محايد	لا أوافق	لا أوافق بشدة
الفائدة	استخدام نظام التعلم الإلكتروني يجعل نمط حياتي أسهل					
	يتحسن أدائي في العمل باستخدامي نظام التعلم الإلكتروني					
	أعتقد أن التعلم الإلكتروني أداة تعلم مفيدة					
سهولة الاستخدام	تفاعلي مع نظام التعلم الإلكتروني واضح ومفهوم					
	التفاعل مع التعلم الإلكتروني لا يتطلب الكثير من الجهد العقلي					

	أجد نظام التعلم الإلكتروني سهل الاستخدام					
النية	أعتزم استخدام التعلم الإلكتروني إذا كان النظام متاحاً					
	أنوي استخدام التعلم الإلكتروني إذا لم تكن هنالك عقبات يصعب تجاوزها					
	أنا على استعداد لخوض تجربة التعليم الإلكتروني طوعا					
معيار ذاتي	يعتقد الأشخاص المقربين لي أن استخدامي لنظام التعلم الإلكتروني مفيد جداً					
	يتأثر قراري بتبني التعلم الإلكتروني برأي أصدقائي					
	يتأثر قراري بتبني نظام التعلم الإلكتروني بنظرة الطلاب لهذا النظام					
	يعتقد زملائي بالعمل الذين أتأثر برأيهم بوجوب استخدامي لنظام التعلم الإلكتروني					
تصور	يتبوأ المحاضرون الذين يستخدمون نظام التعلم الإلكتروني مكانة (لديهم برستيج) أكثر من الذين لا يستخدمونه					
	يتمتع المحاضرون الذين يستخدمون التعلم الإلكتروني بسجل شخصي ذي حفاوة وله أثر على ترقيتهم					
	يحصل المحاضرون على حوافز مادية عند استخدام نظام التعلم الإلكتروني					
الصلة بالعمل	استخدامي لنظام التعلم الإلكتروني في عملي مهم					
	يتصل نظام التعلم الإلكتروني بالمهام المختلفة المتعلقة بالعمل بشكل وثيق					
جودة المخرجات	أحصل على جودة مخرجات عالية من نظام التعلم الإلكتروني					
	أتوقع أن تصبح جودة مخرجات التعلم الإلكتروني عالية في المستقبل					

المتغير	السؤال	أوافق بشدة	أوافق	محايد	لا أوافق	لا أوافق بشدة
نتائج مثبته	أعتقد أنه بإمكاني توصيل نتائج وفوائد استخدام نظام التعلم الإلكتروني للآخرين					
	نتائج استخدام نظام التعليم الإلكتروني واضحة بالنسبة لي					
الكفاءة الذاتية الحاسوب	أنا واثق من العثور على المعلومات في نظام التعلم الإلكتروني					
	أمتلك المهارات اللازمة لاستخدام نظام التعلم الإلكتروني					
	أتمكن من إتمام العمل باستخدام تطبيقات التعليم الإلكتروني، إذا عرض لي أحدهم كيفية عمل ذلك مسبقا					
التحكم الخارجي	أستطيع التحكم في استخدام نظام التعلم الإلكتروني					
	أمتلك المصادر والفرص والمعرفة اللازمة لاستخدام التعلم الإلكتروني					
	يتوافق نظام التعلم الإلكتروني مع الأنظمة الأخرى التي أستخدمها					
القلق من الحاسوب	لا أخشى التعامل مع جهاز الحاسوب					
	العمل بالحاسوب لا يجعلني عصبيا					
	لا أتجنب استخدام الحاسوب لأنه لا يشكل رهبة لي					

	أشعر بأن الحواسيب أدوات ضرورية في بيئات التعليم والعمل					
التسلية في الحاسوب	أكون خلاقا عند استخدامي للحاسوب					
	لا أكون ضجرا عند استخدامي للحاسوب					
	أكون مرحا عند استخدامي للحاسوب					
	أتمتع بالمرونة عند استخدامي للحاسوب					
المتعة	أجد استخدام نظام التعلم الإلكتروني ممتعا					
	عملية استخدام الوسائط المتعددة في التعلم الإلكتروني تجعلني مسرورا					
	ينتابني المرح عند استخدامي لنظام التعلم الإلكتروني					
القابلية للاستخدام الهادف	يمكنني انجاز المهمة كما هو مخطط لها عند استخدامي لنظام التعلم الإلكتروني					
	لا تتطلب المهام مزيدا من الجهد والوقت لإنجازها في حال استخدام نظام التعلم الإلكتروني					
الدعم الإداري	الدعم الإداري يزيد فعالية تطبيق نظام التعلم الإلكتروني					
	تقديم الدعم الإداري المباشر مهم في خلق تصورات إيجابية نحو نظام التعلم الإلكتروني					
	أنشأت الجامعة مواقع متخصصة وبارزة لإدارة التعلم الإلكتروني					
	تحدد الجامعة سياسات تحفظ حقوق الملكية الفكرية للمواد الدراسية					
	ترتبط معظم خدمات تكنولوجيا التعلم الإلكتروني بنظام مركزي في الجامعة					
خصائص التصميم	لا تتغير خصائص التصميم لنظام التعلم الإلكتروني في مرحلة التنفيذ					
	لا توجد صعوبة في فهم واستخدام تطبيقات وتوضيحات التعلم الإلكتروني					
المتغير	السؤال	أوافق بشدة	أوافق	محايد	لا أوافق	لا أوافق بشدة
الدعم التنظيمي	توفر الجامعة أجهزة اتصالات وكمبيوترات لاستخدام نظام التعلم الإلكتروني					
	تدعم وتشجع الجامعة طواقمها على استخدام نظام التعلم الإلكتروني					
	توفر لي الجامعة مساعدة وتعليمات في حال واجهتني مشكلة عند استخدامي لنظام التعلم الإلكتروني					
	تعقد الجامعة ندوات ومقابلات تعليمية تساعد في استخدام التعلم الإلكتروني					
التدريب	نوع التدريب الذي تلقيته في استخدام نظام التعلم الإلكتروني مكتمل					
	تم تحسين مستواي في فهم نظام التعلم الإلكتروني بشكل كبير بعد انخراطي في برنامج التدريب					
	أعطاني التدريب ثقة في نظام التعلم الإلكتروني					
	ساعدني المدرب في فهم نظام التعلم الإلكتروني					
جودة	أنا راض عن وظائف نظام التعلم الإلكتروني					

النظام	أنا راض عن محتوى نظام التعلم الإلكتروني المصمم					
	أنا راض عن مستوى التفاعل في نظام التعلم الإلكتروني					
أنشطة التعليم التفاعلية	أود مشاركة الآخرين خبرتي في التعلم الإلكتروني					
	التعلم الإلكتروني يساعد في تفاعل المحاضر والطالب					
	التعلم الإلكتروني يساعد في تفاعل الطالب مع الطالب					
الفعالية	التعلم الإلكتروني يساعد في كفاءة العملية التعليمية					
	التعلم الإلكتروني يحسن أداء العملية التعليمية					
	التعلم الإلكتروني يساعد في تحفيز التعلم					
تعليمات الوسائط المتعددة	أود استخدام تعليمات وسائط الصوت					
	أرغب في استخدام تعليمات وسائط الفيديو					
	أرغب في استخدام تعليمات الوسائط المتعددة "النص والصوت والرسومات والصور المتحركة والفيديو"					
الرضا	أنا راض عن استخدام التعلم الإلكتروني كأداة تعليمية مساعدة					
	أنا راض عن استخدام وظائف التعلم الإلكتروني					
	أنا راض عن محتويات التعلم الإلكتروني					
	أنا راض عن تعليمات الوسائط المتعددة					

ملاحظات أخرى: ....

أشكر لكم حسن تعاونكم

An-Najah National University- Nablus

Faculty of Graduates Studies

Engineering Management Program

Thesis Title

A Framework for e-Learning Acceptance

A Case Study of the Palestinian Universities

Student Name

Fareed Sameer Al-Sayyid

This interview is part of the requirements needed to prepare master's thesis - Master of Engineering Management program, at An-Najah National University, Nablus – Palestine.

The University: ……………………………………

This interview aims to answer the following questions:

The First Part: Infrastructure, Tools and Applications Used:

- What are the tools and applications that used in the e-Learning approach in the university? (Table to answer) Facility

Category	No.	Tool	Example	What Used in University
Synchronous	1	Chat	- Facebook - Second Life	
	2	Audio Conference	- Skype - Google Talk	
	3	Video Conference	- iVisit - iChat - IDL REACT	
	4	Web Conference video/audio conferencing	- Webex - Breeze - Netviewer/GoToMeeting - Skype	
	5	White Board	- Blackboard Collaborate - PowerPoint - Interactive whiteboard	
	6	Satellite Programs	- television broadcasting - mobile communication - ITV	
Asynchronous	1	E-mail	- Gmail - Outlook	
	2	World Wide Web	- Google Chrome - Wiki	
	3	Web-Based Learning	- Moodle	
	4	Mailing List	- LISTSERV - Google Groups	
	5	Discussion Groups	- Forum - Blogs - Google Groups - Smartlist	
	6	File Exchange	- Dropbox	
	7	Interactive Vide	- YouTube - Khan Academy - wireWAX	
	8	CD	- CD-Rom - DVD	

- Are there a need for the development of information and communication technology (ICT) tools in Palestine to promote e-Learning in the universities?

- Are the infrastructure ready for the success of e-Learning experience in the university?

- What is the definition of e-Learning as applied within the university?

The Second Part: The Obstacles and the Perceptions of Lecturers:

- What are the perceptions of lecturers about e-Learning system in the university?
- What are the external factors that significantly affecting the lecturers to use or not use the e-Learning system in the university?
- What are the obstacles and challenges that facing the implementation of e-Learning system in the university?

The Third Part: Administrative Support and University Interventions:

- Are there is a model being applied at the university to promote a culture of change, and to accept this system? What are the factors that are the focus in this model?
- Are there a commitment from senior management in the adoption and implementation of e-Learning system in the university?
- In your view, is there enough support from the university administration for users of e-Learning? What are the forms of this support?

- Does the University provide adequate financial support for the implementation of e-Learning system in the various departments of the University?

جامعة النجاح الوطنية – نابلس

كلية الدراسات العليا

برنامج ماجستير الإدارة الهندسية

عنوان الأطروحة

إطار عمل لتقبل التعلم الإلكتروني:

حالة دراسية للجامعات الفلسطينية

اسم الباحث

فريد سمير السيد

هذه المقابلة هي جزء من المتطلبات اللازمة للقيام بإعداد أطروحة الماجستير – برنامج ماجستير الإدارة الهندسية ، جامعة النجاح الوطنية – نابلس

الجامعة ....

تهدف هذه المقابلة إلى الإجابة عن الأسئلة التالية :

المحور الأول: البنية التحتية والأدوات والتطبيقات المستخدمة:

- ما هي الأدوات والتطبيقات المستخدمة في نهج التعلم الالكتروني في الجامعة؟ **(الجدول التالي للمساعدة)**

التصنيف	رقم	الأداة	أمثلة	ما يستخدمه محاضرو الجامعة
أدوات التعليم الإلكتروني المتزامن Synchronous	**1**	المحادثة (Chat)	**- Facebook** **- Second Life**	
	2	المؤتمرات الصوتية (Audio Conference)	**- Skype** **- Google Talk**	
	3	مؤتمرات الفيديو (Video Conference)	**- iVisit** **- iChat** **- IDL REACT**	
	4	مؤتمرات الويب (Web Conference) video/audio) (conferencing	**- Webex** **- Breeze** **- Netviewer/GoToMeeting** **- Skype**	
	5	اللوح الأبيض (White Board)	**- Blackboard Collaborate** **- PowerPoint** **- Interactive whiteboard**	
	6	برنامج القمر الصناعي (Satellite Programs)	**- television broadcasting** **- mobile communication** **- ITV**	
أدوات التعليم الإلكتروني غير المتزامن Asynchronous	**1**	البريد الإلكتروني (E-mail)	**- Gmail** **- Outlook**	
	2	الشبكة العنكبوتية (Word Wide Web)	**- Google Chrome** **- Wiki**	
	3	التعلم عن طريق الويب Learning) (Management System	**- Moodle**	
	4	القوائم البريدية (Mailing List)	**- LISTSERV** **- Google Groups**	
	5	مجموعات النقاش (Discussion Groups)	**- Forum** **- Blogs** **- Google Groups** **- Smartlist**	
	6	نقل الملفات (File Exchange)	**- Dropbox**	
	7	الفيديو التفاعلي (Interactive Video)	**- YouTube** **- Khan Academy** **- wireWAX**	
	8	الأقراص المدمجة (CD)	**- CD-Rom** **- DVD**	

- هل هنالك حاجة الى تطور أدوات تكنولوجيا المعلومات والاتصالات (ICT) في فلسطين لتعزيز التعلم الالكتروني في الجامعات؟

هل البنية التحتية مهيأة لنجاح تجربة التعلم الإلكتروني في الجامعة؟

- ما هو تعريف التعلم الالكتروني حسب ما هو مطبق داخل الجامعة؟

المحور الثاني: العقبات وانطباعات المحاضرين:

- ما هي تصورات المحاضرين حول نظام التعلم الالكتروني في الجامعة؟
- ما هي العوامل الخارجية المؤثرة بشكل كبير على المحاضرين في استخدامهم او عدم استخدامهم نظام التعلم الالكتروني في الجامعة؟
- ما هي العقبات والتحديات التي تواجه تطبيق نظام التعلم الالكتروني في الجامعة؟

المحور الثالث: الدعم الإداري وتدخلات الجامعة:

- هل هنالك نموذج يجري تطبيقه في الجامعة لتعزيز ثقافة التغيير، ولتقبل هذا النظام؟ وما هي العوامل التي يتم التركيز عليها في هذا النموذج؟
- هل هنالك التزام من الإدارة العليا في تبني وتطبيق التعلم الالكتروني في الجامعة؟
- بنظرك هل هنالك دعم كاف من قبل إدارة الجامعة لمستخدمي التعلم الالكتروني؟ وما هي أشكال هذا الدعم؟
- هل توفر الجامعة الدعم المالي الكافي لتطبيق نظام التعلم الالكتروني في مختلف أقسام الجامعة؟

جامعة النجاح الوطنية

كلية الدراسات العليا

إطار عمل لتقبل التعلم الإلكتروني:

حالة دراسية للجامعات الفلسطينية

إعداد

فريد سمير السيد

إشراف

د. بكر عبد الحق

قدمت هذه الأطروحة استكمالا لمتطلبات الحصول على درجة الماجستير في الإدارة الهندسية بكلية الدراسات العليا في جامعة النجاح الوطنية في نابلس– فلسطين.

2015

إطار عمل لتقبل التعلم الإلكتروني: حالة دراسية للجامعات الفلسطينية

إعداد

فريد سمير السيد

إشراف

د. بكر عبد الحق

الملخص

تهدف هذه الدراسة إلى تحديد الفرص والتحديات التي تواجه التعلم الإلكتروني في الجامعات الفلسطينية من وجهة نظر المتخصصين في هذا المجال، و تقديم إطار عمل شامل لتقبل التعلم الإلكتروني بعد التحقيق من العوامل التي تؤثر على تقبل هذه التكنولوجيا من قبل المحاضرين في الجامعات الفلسطينية.

تم وضع تصور لإطار العمل المتعلق بهذا البحث عن طريق مراجعة الأدب والاستعانة بآراء الخبراء في عملية التصميم. ويركز نطاق العمل الخاص بهذا البحث على عوامل هامة مستمدة من نموذج تقبل التكنولوجيا الثالث (TAM3)، بالإضافة إلى عوامل البيئة المحيطة وعوامل التدخلات الجامعية والتي شكلت امتداد لنموذج (TAM3).

استخدم الباحث المنهج الكمي ووالوصفي في الإجابة على أسئلة البحث واختبار الفرضيات. البيانات الكمية التي تتعلق بالعوامل المؤثرة على تقبل التعلم الإلكتروني تم جمعها عن طريق توزيع استبانة على عينة عشوائية (ن = 352) من المحاضرين في الجامعات الفلسطينية. أما البيانات الوصفية التي تتعلق باستكشاف واقع التعلم الإلكتروني في فلسطين فقد تم جمعها من خلال إجراء مقابلات معمقة مع المتخصصين في إدارة التعلم الإلكتروني أو تكنولوجيا المعلومات في تلك الجامعات.

نتائج تحليل الاستبانة تظهر قبول جميع فرضيات الدراسة باستثناء الفرضيات المتعلقة بعاملي (الطوعية والخبرة) كعوامل وسيطة، علاوة على ذلك فإن النتائج تشير الى أن العوامل التالية: الفائدة، وسهولة الإستخدام، والرضا، تشكل أهم العوامل المؤثرة في نية الفرد لاستخدام التعلم

الإلكتروني، بينما العوامل التالية: الكفاءة الذاتية في استخدام الحاسوب، والقلق من الحاسوب، والمتعة في استخدام التكولوجيا، والصلة بالعمل، وتعليمات الوسائط المتعددة، تشكل أهم العوامل المؤثرة بشكل غير مباشر في نية الفرد لاستخدام التعلم الإلكتروني.

من جهة أخرى فإن نتائج المقابلة تظهر أن غالبية إدارات الجامعات الفلسطينية ملتزمة بدعم اعتماد وتطبيق التعلم الإلكتروني. وتظهر نتائج هذه الأداة أيضا أن أدوات التعلم الإلكتروني غير المتزامنة هي الأكثر استخداما على نطاق واسع في الجامعات الفلسطينية.

وبناء على نتائج البحث فإنه يتوجب على الجامعات الفلسطينية العمل على تعزيز تبني وتقبل التعلم الإلكتروني، وتطوير البنية التحتية للتعلم الإلكتروني، وتقديم خدمات تعلم إلكتروني ذات جودة عالية، والتنسيق مع كيانات أخرى مثل الحكومة، وشركات تكنولوجيا المعلومات والاتصالات، ومكاتب نقل البرمجيات إلى الجانب العملي والتطبيقي . وذلك وفقا لاستراتيجيات جديدة يتم تشكيلها لتحقيق هذه الأهداف.