



## **The Impact of Physical Evidences' Quality on E-Learning**

### **Efficiency in Private Schools in Amman**

**أثر جودة الشواهد المادية في كفاءة التعليم الإلكتروني في المدارس الخاصة في عمان**

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*Sincerely Yours,*

*Nawal Al-Husseini*

## **Dedication**

*To my Compassionate and Beloved Father*

*To my Gorgeous and Sacrificing Mother*

*To my Blessed Sisters... Lama & Reema*

*To my Dearest Brother... Musa*

*To my unique principal... Lilia Al-Nimri*

*To all my Friends...*

## Table of contents

<i>Subject</i>	<i>Page</i>
<b>Authorization</b>	<b>II</b>
<b>Discussion Committee Decision</b>	<b>III</b>
<b>Acknowledgment</b>	<b>IV</b>
<b>Dedication</b>	<b>V</b>
<b>Table of Contents</b>	<b>VI</b>
<b>List of Tables</b>	<b>VIII</b>
<b>List of Figures</b>	<b>XI</b>
<b>Appendices</b>	<b>XII</b>
<b>Abstract</b>	<b>XIII</b>
<b>Chapter One</b>	
<b>General Framework</b>	<b>1</b>
<b>(1-1) Introduction</b>	<b>2</b>
<b>(1-2) Study Problem and Questions</b>	<b>4</b>
<b>(1-3) Study Significance</b>	<b>5</b>
<b>(1-4) Study Objectives</b>	<b>6</b>
<b>(1-5) Study Model and Hypotheses</b>	<b>7</b>
<b>(1-6) Study Limitations</b>	<b>8</b>
<b>(1-7) Study Delimitations</b>	<b>10</b>
<b>(1-8) Study Terminologies</b>	<b>10</b>
<b>Chapter Two</b>	
<b>Theoretical Framework and Previous Studies</b>	<b>12</b>
<b>(2-1) Introduction</b>	<b>13</b>
<b>(2-2) Ambient Conditions</b>	<b>14</b>
<b>(2-3) Interface Design</b>	<b>22</b>

<b>(2-4) Ease of Use</b>	<b>26</b>
<b>(2-5) Responsiveness</b>	<b>30</b>
<b>(2-6) E-Learning Efficiency</b>	<b>34</b>
<b>(2-7) Previous Studies</b>	<b>38</b>
<b>(2-8) Study Contribution</b>	<b>47</b>
<b>Chapter Three</b> <b>Method and Procedures</b>	<b>49</b>
<b>(3-1) Introduction</b>	<b>50</b>
<b>(3-2) Study Methodology</b>	<b>50</b>
<b>(3-3) Study Population and Sample</b>	<b>50</b>
<b>(3-4) Demographic Variables</b>	<b>53</b>
<b>(3-5) Study Tools and Data Collection</b>	<b>54</b>
<b>(3-6) Statistic Treatment</b>	<b>55</b>
<b>(3-7) Validity and Reliability</b>	<b>56</b>
<b>Chapter Four</b> <b>Analysis Results and Hypotheses Test</b>	<b>58</b>
<b>(4-1) Introduction</b>	<b>59</b>
<b>(4-2) Descriptive Analysis of Study Variables</b>	<b>59</b>
<b>(4-3) Study Hypotheses Test</b>	<b>66</b>
<b>Chapter Five</b> <b>Results &amp; Conclusion, Recommendations</b>	<b>71</b>
<b>(5-1) Results &amp; Conclusion</b>	<b>72</b>
<b>(5-2) Recommendations</b>	<b>75</b>
<b>References</b>	<b>78</b>
<b>Appendices</b>	<b>83</b>

## List of Tables

<i>No</i>	<i>Subject</i>	<i>Page</i>
<b>(2-1)</b>	Operational Definitions of User Criteria for Site Design Source	<b>28</b>
<b>(3-1)</b>	The Names of the Private Schools of the Study Sample	<b>51</b>
<b>(3-2)</b>	Descriptive sample of the demographic variables of the study	<b>53</b>
<b>(3-3)</b>	Reliability of Questionnaire Dimensions	<b>57</b>
<b>(4-1)</b>	Arithmetic mean, SD, item importance and importance level of Ambient Conditions	<b>59</b>
<b>(4-2)</b>	Arithmetic Mean, SD, Item Importance and Importance Level of Ease of Use	<b>60</b>
<b>(4-3)</b>	Arithmetic Mean, SD, Item Importance and Importance Level of Interface Design	<b>61</b>
<b>(4-4)</b>	Arithmetic Mean, SD, Item Importance and Importance Level of Responsiveness	<b>62</b>
<b>(4-5)</b>	Arithmetic Mean, SD, Item Importance and Importance Level of Extend and Refine Knowledge	<b>63</b>
<b>(4-6)</b>	Arithmetic Mean, SD, Item Importance and Importance Level of Using Knowledge Meaningfully	<b>64</b>
<b>(4-7)</b>	Arithmetic Mean, SD, Item Importance and Importance Level of Attitudes and Perceptions	<b>65</b>
<b>(4-8)</b>	Multiple Regression Test to identify the impact of the Physical Evidence components (Ambient Conditions, Ease of Use, Interface Design and Responsiveness on E-learning Efficiency	<b>66</b>
<b>(4-9)</b>	Stepwise Multiple Regression test to identify the effect of the Physical Evidence components on E-Learning Efficiency	<b>67</b>
<b>(4-10)</b>	Simple regression analysis test results of the impact of Ambient Conditions on E-learning Efficiency in Private Schools in Amman	<b>67</b>



<b>(4-11)</b>	Simple regression analysis test results of the impact of Ease of Use on E-Learning Efficiency in Private Schools in Amman	<b>68</b>
<b>(4-12)</b>	Simple regression analysis test results of the impact of Interface Design on E-Learning Efficiency in Private Schools in Amman	<b>69</b>
<b>(4-13)</b>	Simple regression analysis test results of the impact of Responsiveness on E-Learning Efficiency in Private Schools in Amman	<b>70</b>

## List of Figures

<i>No</i>	<i>Subject</i>	<i>Page</i>
<b>(1-1)</b>	The Study Model	<b>7</b>
<b>(2-1)</b>	A framework for understanding environment-User relationships in Service Organization	<b>15</b>
<b>(2-2)</b>	A framework for understanding four environmental dimensions of the servicescape	<b>16</b>

## Appendices

<i>No</i>	<i>Subject</i>	<i>Page</i>
<b>1</b>	Names of arbitrators	<b>83</b>
<b>2</b>	Study Questionnaire	<b>84</b>

## **Abstract**

### **The Impact of Physical Evidences' Quality on E-Learning Efficiency** **“An applied study in Private Schools in Amman”**

**Prepared by**  
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The current study aims to explore the impact of Physical Evidences' Quality on E-Learning Efficiency in private schools in Amman.

This study was applied on Private sector of schools in the Capital Amman, where a random sample was taken. In order to achieve the objectives of the study, the researcher designed a questionnaire consisting of (31) paragraphs. They were distributed among the teachers who use technological equipments through the educational process to gather the primary information from the study sample. The Statistical Package for Social Sciences (SPSS) program was used to examine the hypotheses.

The study resulted in high level of importance for the study variables, and presented significant direct impact of each of the variants (*Ambient Conditions, Ease of Use, Interface Design and Responsiveness* on *E-Learning Efficiency*.)

Finally, the study set the following recommendations:

1. Private Schools in Amman have to integrate the Ambient Conditions and the characteristics of the software they use in order to improve the E-Learning Efficiency.
2. Private Schools in Amman have to make sure that the atmosphere of the classroom (*light, cleanliness, odor, and temperature*) is suitable according to the educational environment because of the important role it plays in satisfying both, teachers and students.
3. Private Schools in Amman have to possess a good Information Technology Infrastructure consists of Computers, Internet, Projectors... etc. to improve the E-Learning Efficiency.
4. Private Schools in Amman have to pay attention toward the characteristics of the educational software they use. They have to make sure that:
  - The software owns a friendly User Interface Design.
  - It is easy to use the software and search for the information.
  - The feedback of the advantages and disadvantages of the software, answering the questions of the users and getting in contact with the supporting staff is one of the high priorities of the software's success.

# **Chapter One**

## **General Framework**

- 1.1 Introduction**
- 1.2 Study Problem and Questions**
- 1.3 Study Significance**
- 1.4 Study Objectives**
- 1.5 Study Model & Hypotheses**
- 1.6 Study Limitations**
- 1.7 Study Delimitations**
- 1.8 Study Terminologies**

## 1.1 Introduction

Service is a varied term of different definitions and surrounds us in various terms. Service here means the method followed to pass on an informative topic of specific product to the public or consumer. If one looks deeply to life's mode it becomes evident that service penetrates in every place and time. Service is in a way not a tangible sense of touch; the result will only be shown when the customer reacts with service presented to him. It must comply for experimentation by the customer before it is evaluated.

Prior to presenting the elements that service depends on, one must clarify the connotation of service marketing. The service marketing focuses on the distinctive characteristics of services and how they affect both customer behavior and marketing strategy (*Lovelock & Wirtz 2011*). It relies on seven key dimensions of which relate to the product and to the service.

The product is specialized in all the standards it contains and is it fulfills the customer's satisfaction or not. As for the price, the pricing determination must depend on many factors such as if the price is going to affect negatively or positively on inducing the customers, and to review the price based on the study of the present market position.

The promotion is the most important of these dimensions that culminates the desired profit of the product. The promotion process can be presented through product advertisement offered visually on televisions or by auditory means on radios, or by signboards erected to the public, etc. The last dimension depends on the place where the product is distributed whether from direct sales channels or through sales via telephone or television or through retailers and distributors (*Kotler & Keller, 2012*).

As for the other dimensions regarding the specialization of factors relative to the service namely physical evidence, people and the process.

This analytical research will be concentrated on the physical evidence being the most important of the three dimensions and the most reliant and effective on the customer opinions and their contentment to obtain the service. One must be advised here that highly qualified persons must be attained in order to provide a suitable environment when presenting this product or service to the customers. As for the last dimension where the process in the specialty we mean all the stages that the product passes through from the starting productive point to its final packing stage involving the mentioned levels above until it arrives to the client or customer. (*Kotler & Keller, 2012*)

The physical evidence deals with all the surrounding facilities of the service, the human factor or the tangible financing. The human factor means the specialization of habits and attitudes that persons have when presenting this service. On the other hand the financial side has also an effective and direct clear influence in presenting the service as there are contributive factors that we will look into with details mainly the general atmosphere weather-wise (i.e. the suitable temperature during the year's seasons, decors (furniture) and paint fixtures, tableau and others), the aromatic fragrances which point to the cleanliness degree of the place, and other environmental factors (*Bitner, 1992*).

The general atmosphere relies on the nature of the presented service. The individual and their personalities though varied dimensions capable of dealing with all society levels with the goal of promotion and developing of the service and increase its positiveness and this cannot be achieved without education. From here the idea came to prepare this research to acknowledge the



effect of the physical evidence on the educational service from one end and on the nature of the used software from the other end.

Technology in our modern times has become an irreplaceable part of the operational and educational life, and hardly any society misses the services of technology in all its means and avenues. It has become a reality and of basic needs indispensable to every society.

Nowadays, the educational establishments and organizations have increased their interest in developing the followed means and procedures in applying the educational curriculum through the usage of computers, modern programs and equipment of high technology that relishes synthetic intelligence based on written programs in an advance language that works on execution of human orders in a fast and punctual electronic manner.

## **1.2 Study Problem and Questions**

Many educational institutions do not understand the main impact of the physical evidence on the psychological factor of the individuals but simply its presence in schools.

It is important to identify the major impact of the physical evidence and the design layout of the E-Learning process on the E-Learning efficiency, because this may provide opportunities for the learners to develop sustainable advantage to reach to point of success. In addition, the previous researches did not consider the relationship between the physical evidence factor of the learning environment and the nature of the used software, and how both of them affect the E-Learning efficiency.

Accordingly the researcher can present the study question as follows:-

**Question One: To what extent do the Ambient Conditions (Light, Odor, Colors, Paint, Music...etc) affect E-Learning Efficiency?**

**Question Two: How Important is the effect of Interface Design (Layout Design, Structure) on E-Learning Efficiency?**

**Question Three: Is there a positive direct impact of Ease of Use (Navigation, Search and Linkage) on E-Learning Efficiency?**

**Question Four: To what extent does the Responsiveness (Getting feedback, Contact supporting staff and customer satisfaction) affect E-Learning Efficiency?**

### **1.3 Study Significance**

E-Learning is a process of using the technology in order to deliver the information in an easier way so that it could be found anywhere and anytime related to the objectives, aspirations and wishes of individuals. For that, E-learning efficiency requires studying the dimensions of the E-learning and what are the factors that characterize it.

E-learning helps to maximize the individual's skills in an educational environment, including the functions which the software consist of and their impact on the individuals.

Therefore, a successful E-learning process must be prepared to deal with the educational environment, if expected in order to prevent the failure or the low efficiency of the E-learning process.

The significance of the study lies in developing and guiding the success of the E-Learning through the software which is used to build an ease of use of educational system taking into account the elements of the physical evidence as they may play a role in affecting the

desires of the individuals and insinuate on the attraction to receive the educational service in the full course. This study is preliminary step to encourage researchers to undertake future studies, which show the importance of the physical evidence and the design layout of the E-Learning process on the E-Learning efficiency.

The result of the current study will hopefully lead to emerge more subsequent studies useful to develop E-Learning efficiency success and to focus on the role of which the physical evidence plays after the image will be well demonstrated.

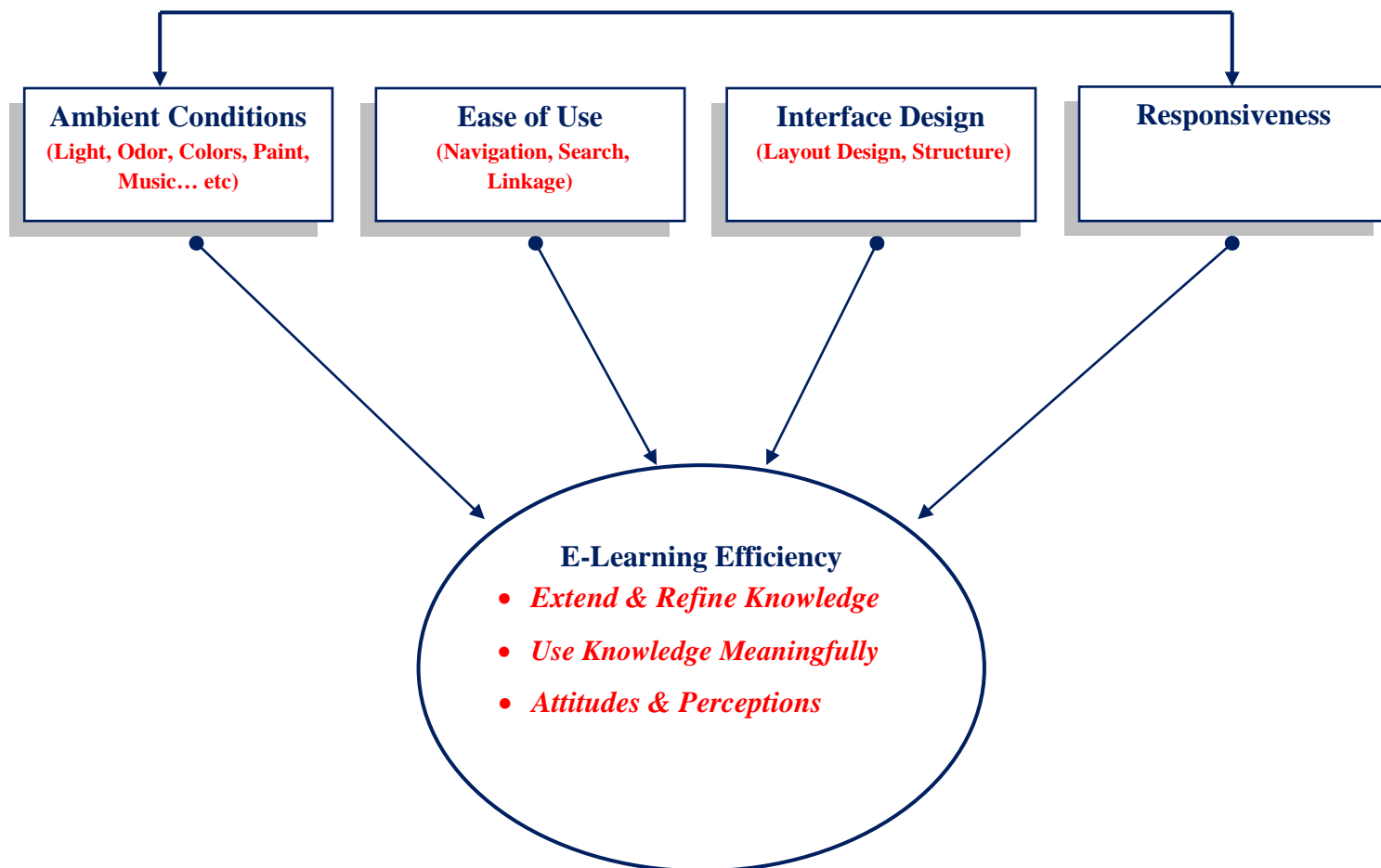
## **1.4 Study Objectives**

This study seeks to achieve the following objectives:

- 1.** Identify the extent that Ambient Conditions (*Light, Odor, Colors, Paint, Music...etc*) is committed to E-Learning efficiency in private schools in Amman.
- 2.** Determine the impact of Interface Design (*Layout design, Structure*) on E-Learning efficiency in private schools in Amman.
- 3.** Represent the importance level of Ease of Use (*Navigation, Search, and Linkage*) on E-Learning efficiency in private schools in Amman.
- 4.** Explore the effect of Responsiveness (*Getting feedback, contact the supporting staff and customer satisfaction*) on E-learning efficiency in private schools in Amman.

## 1.5 Study Model & Hypotheses

### *Physical Evidence Components*



*Figure (1-1) The Model of the Study*

In measuring *Ambient Conditions* the researcher relied on the suggested measurement by (*Bitner, 1992*). In the measurement of *Ease of Use* the researcher relied on (*Jessica Santos, 2003*). In the measurement of *Interface Design* the researcher relied on (*Cheul Rhee et al., 2006*). In the measurement of *Responsiveness* the researcher relied on (*Dina Ribbink et al., 2004*). Finally, in the measurement of *E-learning Efficiency* the researcher relied on (*Falconer, 2006*).

Based on the study problem and the literature review, the following research hypotheses will be examined:

**H01: There is no significant positive effect of Physical Evidence Components (Ambient Conditions, Ease of Use, Interface Design and Responsiveness) on E-Learning efficiency in Private Schools in Amman at level ( $\alpha \leq 0.05$ ).**

**H0<sub>1-1</sub> There is no significant positive effect of Ambient Conditions (Light, Odor, Colors, Paint, Music... etc) on E-Learning Efficiency in private schools in Amman at level ( $\alpha \leq 0.05$ ).**

**H0<sub>1-2</sub> There is no significant positive effect of Ease of Use (Navigation, Search and Linkage) on E-Learning Efficiency in private schools in Amman at level ( $\alpha \leq 0.05$ ).**

**H0<sub>1-3</sub> There is no significant positive effect of the Interface Design (Layout design, Structure) on E-Learning Efficiency in private schools in Amman at level ( $\alpha \leq 0.05$ ).**

**H0<sub>1-4</sub> There is no significant positive effect of Responsiveness on E-Learning Efficiency in private schools in Amman at level ( $\alpha \leq 0.05$ ).**

## 1.6 Study Limitations

The scope of study deals with the following dimensions:

- **Human Limitations:** The current study will deal with the IT teachers and those who use educational software or equipments to teach their students.
- **Place Limitations:** Private schools in Amman, Jordan.
- **Time Limitations:** The time period for study accomplishment is from September to December 2012.

- **Scientific Limitations:** In measuring *Ambient Conditions* the researcher relies on the suggested dimensions of the model of the study of *Bitner's* study (**Servicescapes: The Impact of Physical Surroundings on Customers and Employees**).

In the measurement of **Ease of Use** the researcher relies on *Jessica's* study (**E-service quality: a model of virtual service quality dimensions**). According to the dimensions of the conceptual model which has discussed the E-service Quality components, it has been found that the ease of use is one of the dimensions which will play a major role in affecting the E-Learning efficiency whereas the E-Learning is an example of E-services. The study proposed that E-service quality consists of an incubative dimension and an active dimension using time before and after a website is launched- as the criterion for separating the dimensions. The incubative dimensions include (Ease of Use, appearance, linkage, structure and layout, and content).

In the measurement of *Interface Design* the researcher relies on *Cheul's et al.* study (**Web Interface Consistency in E-Learning**) as the goal of this study was to examine how the interface consistency of the e-learning system influences students' learning processes. Skilled students are generally more sensitive to interface consistency but on the other hand the interface consistency alone does not guarantee the best web-based E-Learning system; it is an aspect of interactivity and usability.

In the measurement of *Responsiveness* the researcher relies on *Dina's et al.* study (**Comfort your online customer: quality, trust and loyalty**) According to the dimensions of the conceptual model which has discussed the E-quality, it has been found that the Responsiveness is one of the dimensions which will play a major role in affecting the E-Learning efficiency whereas the E-Learning process has to consider the aspects of the E-quality. According to Dina's study the E-quality dimensions which have been taken

in the study were (ease of use, website design, customization, responsiveness and assurance) in addition to the result of the hypotheses test found that service quality dimensions such as e-scape, ease of use, customization and responsiveness influence e-loyalty mainly indirectly, via satisfaction.

Finally, in the measurement of *E-learning Efficiency* the researcher relies on *Falconer's* study (**Organizational learning, tacit information, and e-learning: a review**) where it was taking into account the dimensions of the model of the study and redrafted in line with our study model. This paper has established the proposition that IT and E-Learning techniques offer significant potential to transform and communicate tacit knowledge. The importance of collaboration in learning has been demonstrated as being some of the most synergistic.

## 1.7 Study Delimitations

1. The study was not implemented on Public schools in Amman.
2. The study is limited on schools that rely on the use of technology such as (Computers, Internet, educational software... etc) that assist in the rehabilitation of children and develop their abilities through the use of technology.

## 1.8 Study Terminologies

1. **Ambient Conditions:** the tangible and non-tangible conditions that surround the physical environment such as the furniture, lightening, odor, paint, graphics etc. which have an effect on the individual responses toward the service they are planning to get. (*Bitner, 1992*)

2. **Ease of Use:** is the degree to which users are able to use the system with the skills, knowledge, stereotypes and experience they can bring to bear. (*Eason, 1988*)
  
3. **Interface Design:** aims to enhance the visual, usability and technological qualities of an interface. It adds to the satisfaction of the person using a product or a service. It has to be useful, learnable, effective, easy to memorize, reliable and user friendly. (*Kelley, 2001*)
  
4. **Responsiveness:** is the ability of business processes and systems to respond to changing conditions and customer interactions as they occur, enabling business leaders to capitalize on opportunities, drive greater efficiencies, and reduce risk. (*Fulton, 2009*)
  
5. **E-Learning:** is the use of electronic media for a variety of learning purposes that range from add-on functions in conventional classrooms to full substitution for the face-to-face meetings by online encounters. (*Guri-Rosenblit, 2005*)



## **Chapter Two**

### **Theoretical Framework and Previous Studies**

- 2.1 Introduction**
- 2.2 Ambient Conditions**
- 2.3 Interface Design**
- 2.4 Ease of Use**
- 2.5 Responsiveness**
- 2.6 E-Learning Efficiency**
- 2.7 Previous Studies**
- 2.8 Study Contribution**

## 2.1 Introduction

Everyone knows that the essence of knowledge is the result of life's educational means as well as the experience and the perception of life whether educational or operational, and life itself in its experiences is responsible for the education of the individual and his aspirations. It should be noted that the education attained by the individual through customary means is not a persistent one in relation to education that is earned by commercial means and getting involved through operational acknowledgements.

The prevalence of the phenomenon of using the computers and networks has led to the development of E-Learning. Understanding the factors which the individuals are involved to decide whether the E-Learning process is successful in every sense with it or not depends on the environment surrounding the process of E-Learning on the one hand, and the requirements of the system used in the application of E-Learning process on the other hand.

The primary focus of E-Learning is on the development of technologies and architectures that enable the layout of the website to link between the user and the software he/she is using (*Webb & Webb, 2004*). What ensures the quality of the website is the responds which will be taken according to each time the software will be used. From this point, the importance of the evaluation of the software comes.

According to various authors, the Internet provides opportunities in both teaching and learning and that the students are very eager to use the Internet for entertainment purposes primarily and for source of data secondarily. Although students are familiar in using the Internet

but some researchers found that these students often lack the skills that they must have in order to deal with using the Internet for educational purposes. (*Falconer, 2006*)

This chapter is divided into three sections. The first section deals with the study variables (Dependent and Independent Variables) E-Learning Efficiency, Ambient Conditions, Ease of Use, Interface Design and Responsiveness. The second section is assigned to previous studies; and finally the third section highlights the study contribution to knowledge.

## **2.2 Ambient Conditions**

In relation to “Expanded Servicescape Perspective”, a framework shows that it comprises physical, social, socially symbolic, and natural environmental dimensions which all influence customer approach/ avoidance decisions and social interaction behaviors. (*Bitner, 1992*) and (*Zeithami et al., 2009*) referred to “Servicescape” to denote a physical setting in which a marketplace exchange is performed, delivered, and consumed within a service organization and conceptualized the existence of objective, physical, and measurable stimuli that constitute a servicescape. *Figure (2-1)* shows the relationship between the user and the environment in a service organization.

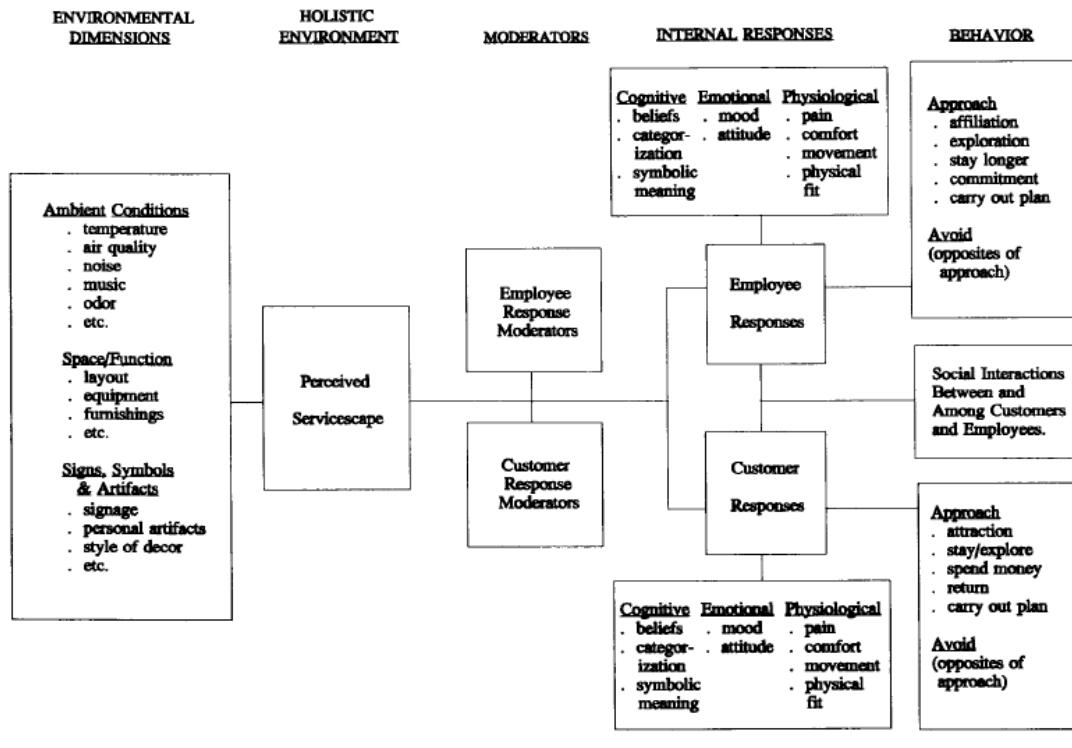


Figure (2-1): A framework for understanding environment-User relationships in Service Organization

These stimuli are organizationally controllable which are able to enhance or constrain employee and customer approach and/or avoidance decisions that facilitate or hinder employee/customer social interaction (Parish et al., 2008). Bitner's (1992) three defined dimensions (1) Ambient Conditions (2) Spatial Layout and Functionality (3) Signs, Symbols, and Artifacts remain invaluable to marketers.

Although service settings such as Cyberscapes, Shippscapes, Sportscapes, and experience rooms influence consumers in a collective way, they are subjective, difficult to measure objectively, and managerially uncontrollable and that influence consumers and employee approach and social interaction decisions in different ways (Edvardsson et al., 2010).

(Bitner, 1992) assumed that dimensions of the organization's physical surroundings influence important customer and employee behaviors, and she noted that a customer's favorable

response to a servicescape's natural dimension would enhance his or her response to a locale's physical dimension. These theories were left to future researchers to explore deeply the impact of social and natural stimuli within servicescapes. The following diagram is a framework for understanding four environmental dimensions of the servicescape from the point of view from (Zeithaml et al., 2009).

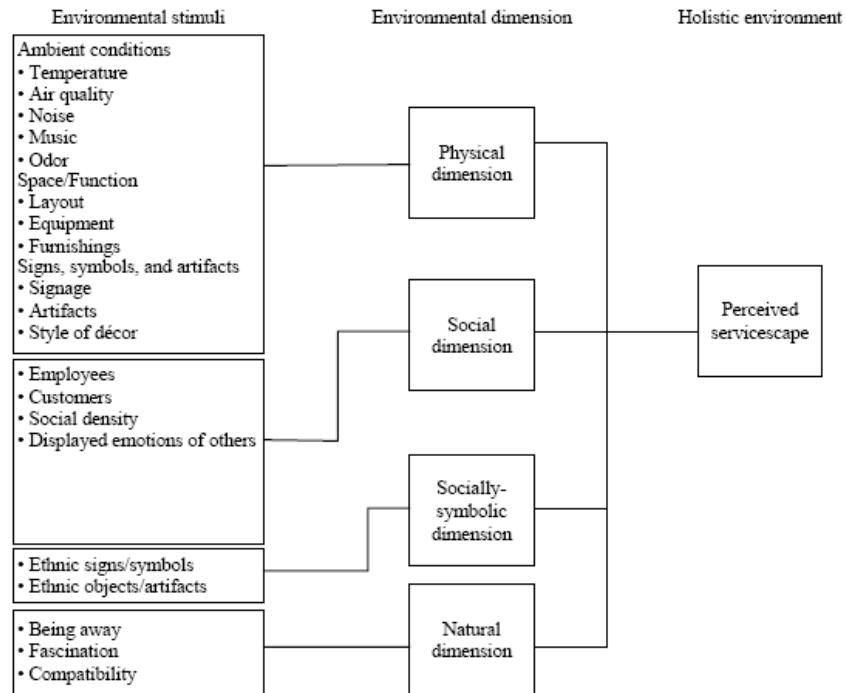


Figure (2-2): A framework for understanding four environmental dimensions of the servicescape

Regarding the physical dimension (Zeithaml et al., 2009) stresses that ambient conditions are easy for managers to comprehend because they encompass manufactured, observable, or measurable stimuli that are controllable by the firm to enhance or constrain employee and customer actions. Ambient conditions represent background environmental stimuli or atmospherics that affect human sensations (Grayson & Mcneil, 2009). Lighting, colors, brightness, shapes (Visual stimuli) scent, air quality, fragrance (Aesthetic cleanliness, olfactory), ambient (e.g. temperature), and music, noises (Auditory) are all elements referred to by many authors. Space refers to the manner in which physical machinery, equipment, technology, furnishings

arrangement, comfort layout and accessibility for lesser observable furnishings influence consumer approach/avoidance decisions (*Edvardsson et al., 2010*). As for functionality it denotes the ability of all these physical items to facilitate the service exchange process, improves and innovates consumer support in an ergonomic manner. When viewed as a dimension, both space and function can be considered a designscape that include both realistic (e.g. manufactured) and abstract (e.g. subjective) meanings (*Julier, 2005*). That is, consumers evaluate a designscape to understand a locale's place meaning or identity in order to answer such questions as "What is this place?" and "Will I be able to fulfill my goals in this locale?".

To facilitate a customer's movement through a servicescape managers employ physical signals to communicate general meaning about the place to consumers. Generic signs demarcating departments (e.g. shoes, children's), directions (e.g. Enter/Exit), rest rooms, caution (e.g. Wet floors), and rules of behavior (e.g. no smoking) are such examples. Symbols such as national flags, artifacts create aesthetic impressions to enhance customers' feelings of entering an Italian restaurant or a Hawaiian resort and cultural practice or a French cuisine or any imaginary cultural practice to help guests escape reality and enter an ersatz world of pleasure (*Zeithami et al., 2009*). The social dimension plays another vital role in perceived servicescape in which consumers fulfill not only their utilitarian needs but also their social and psychological needs. The customer placement, customer involvement, and interaction with employees are social elements defined by (*Edvardsson et al., 2010*). They define a servicescape's social dimension as containing stimuli: employees, customers, social density, and displayed emotions of others.

Several studies have recognized the physical environment on frameworks of service experiences. (*Kotler; 1973*) looked into the “Atmospherics” of the physical environment, as perceived through the customer’s five senses (Visual, Aural, Olfactory, Tactile, and Gustatory). (*Baker, 1986*) included further the “Design” factors (Aesthetic and functional aspects of furnishings and layout) as well as the employees and customers “Social” factors. (*Bitner, 1992*) diverted to analyze the sensory and tangible elements (i.e. Intangible and tangible elements). Layout, equipment, furniture, signs, décor are such samples. Further studies showed that it’s not the service firm who makes the ultimate decisions about how the physical environment should be shaped and experienced; rather it is the customers who interact with the environment and by so doing create their own meaning (*Venkatraman & Nelson, 2008*). Hence, the customer is an active creator of the physical environment and is evoked by its elements. One can clearly conclude that the customer is an active contributor in these interactions thus leading to customer experiences and customer value. Customer value thus emerges through the customer experience.

(*Edvardsson et al., 2010*) developed the concept of the “experience room”. He described the customer’s anticipated experience of the co-creation of services before this actually occurs. The “experience room” consisted of six dimensions as follows:-

- Physical artifacts necessary to create the physical attributes of the experience room and sensory elements.
- Intangible artifacts that make up the non-physical infrastructure.
- The technical equipment with which the customers interact passively or actively.
- The customer placement as a precondition for social interactions.
- Customer involvement for activity in services and situations.
- Interaction with employees (i.e. interaction between customers and employees

Service research suggested the physical environment also influences service satisfaction whereas customers rely upon physical environments for cues in evaluating service satisfaction (*Bitner, 1992*). Customers respond emotionally to a variety of physical environments which include both design and ambient factors (Nonvisual, background conditions such as air, lighting, music, and scent and visual such as layout, facilities and color) (*Burns & Neisner, 2006*). In other words, physical environments trigger affective reactions in customers. Ambient cues can create a sense of harmony with décor and make the experience more pleasant with positive emotion (*Liu & Jang, 2009*) that reduces pressure (being pleased or excited). Therefore, and as many authors stipulated in their analysis, ambient factors as well as design factors are positively related to customer positive emotion and satisfaction.

The capacity of environmental elements to create and communicate corporate image is well recognized, especially for service organizations, while physical setting can also influence employees' satisfaction, productivity, and motivation, and physical environment is considered as the packaging of services and has three components: ambient conditions, spatial layout, and décor and orientation signals (*Bitner, 1992*). For example, when a client visits his/her communication consulting firm for the first time, the office décor and furniture quality may be indicators of the firm's success or its service changes. The physiological reaction is a result of ambient conditions of the setting that may cause comfort or discomfort during the service encounter which in turn encourages the client to pursue or interrupt the service consumption; and, consequently, may have an influence on his/her attitudes and behaviors toward to the service provider. Finally, the physical environment may elicit the client's emotional reaction, which also affects his/her attitudes and behavior. In other words, it is a chain reaction of cause and effect.



Looking further into the subject matter of ambient conditions one finds that music played in a servicescape is capable of not only stimulating emotions and mood states but has an impact on the purchasing behavior. It is a complex chemistry of controllable elements and a major component of consumer marketing, both at the point of purchase and in advertising (*Mattila & Wirtz, 2001*), the greater customers' perception of music appropriateness, the greater the intentions of customers to be loyal. Aroma on the other hand has a pleasant effect on servicescape. The environmental fragrance is now becoming a common practice in retailing, restaurants and other service-oriented businesses helping and encouraging customers to spend more time in the servicescape (The scent of fresh food and pastries in bakeries, the great aroma of coffee at Starbucks, the exuberant smell of fresh flowers and greeneries in flower shops and landscapes of restaurants, and so forth). Cleanliness in leisure activities is a must to meet customers' loyalty (*Marinucci, 2002*). Hence, the greater customers' appreciation of servicescape aroma and cleanliness, the higher the intentions of customers to be loyal.

In addition, one must not forget that design factors also play a major role in customers' loyalty. Décor, being a visual symbol, is used to create an appropriate atmosphere within the servicescape. It is a psychological element that has profound effects on human behavior. The social settings of restaurants can help the customer evaluate the trustworthiness and affordability and successfulness of a place or otherwise. The comfort of furnishing and the spaciousness are elements that directly affect both customers and employees in the servicescape (*Bitner, 1992*). Hence, customers' loyalty is a unique and ever-demanding element that is reflected in the saying "one cannot please everybody all the time" due to the so many and vast tastes of customers, but one can work out on the loyalty of customers by keeping track of changes in locations and atmospheres to at least draw the attention to win the customer and his or her loyalty to the place.

Moving on from servicescape model of Bitner to a well researched “cyberscape” (*Williams & Dargel, 2004*) based on Bitner’s well-known “servicescape” model that stressed on service settings because of the unique characteristics of services, particularly their intangibility and perishability, the inseparability of production and consumption, and heterogeneity in delivery quality as E-business, whether offering products or services, ultimately share many service characteristics. The benefits consumed are often not solely in the products purchased but rather in the intangible benefits of interaction with the website, i.e. saved time, convenience, and a reduced risk of dissatisfaction with an enhanced availability of information.

I strongly agree that environmental dimensions such as ambient conditions, spatial layout and functionality as well as signs, symbols and artifacts play a vital role to marketers if laid out proportionally and in accordance to specific conditions and needs, taking in consideration cost for the service organization and psychological response of the user. Well-known researchers starting with *Bitner, Williams & Dargel, and Grayson & McNeil* presented to the readers existing problems and tackled them through an educational perspective relying on a specific study made to create a framework for understanding environment-user relationships in service organization and set up different hypothesis in relation to the findings of each.

## 2.3 Interface Design

The users' discussion of desired content largely structures content development of the test site. The featured site category was directly suggested by users' decision of the value of discovery of novel information resources. Initially the information sources provided are constrained to content provided by existing sites with value added largely by annotation, organization, and linkage. However, mechanisms are incorporated into the test site for users to suggest needed content.

The website should and can be personalized to the user's needs a challenging task because of the lack of human touch (*Rust & Kannan, 2002*). E-Tailers should strive to customize their services to users' individual needs based on past purchases and other information provided by customers (*Srinivasan et al., 2002*). Loyal customers can be a valuable source for service improvements but companies often ignore such information. As for the website design and aesthetic elements, these dimensions cover the richness of the representation of the website environment associated with its formal characteristics such as graphics, colors, images, icons, animated sequences, videos and pop-ups. These elements contribute to the atmosphere of the website and are important in evaluating the website experience (*Cristobal et al., 2007*).

In content, useful and current information, concise non-repetitive information is not easily or readily found in library collections, moreover, the absence of superficial and repetitious information and uninformative content, advertisements, coring text and lack of currency.

As in appearance, the site is visually attractive on-screen while graphics are not essential to site use. If graphics are turned off or a text-only client is used, the site remains fully functional and pages result in attractive printouts without large dark areas. As appearance is the proper use

of color, graphics, images, and animations, together with the appropriate size of the web pages it is usually the first determinant observed by web users. However, there was considerable variation in attitudes to appearance. This is clearly a personal and subjective determinant, with one color appealing to one participant but being regarded as unacceptable by another. Similarly, although the use of a company logo color to design web pages was generally agreed to be an attractive strategy, not all logos were considered suitable for this purpose (*Abels et al., 1999*). In terms of graphics and images, the provision of good-quality graphics, pictures, images, animation, Java Applets, moving objects, and zooming effects were all considered positive elements in a lack of animation, and small text and image were not popular among respondents. The size of a web page is an important factor in appearance. Focus group participants repeatedly emphasized their preferences for web pages that can fit into one screen. They also approved of plenty of white space to facilitate reading.

Oversized pages and graphics, or having to scroll around to view the whole page, were not appealing to web users, while (*Szmanski & Hise, 2000*) confirm that appearance as an important feature of website satisfaction. Regard appearance as merely a cosmetic element by some researchers. However good appearance can certainly attract web surfers for initial and repeat visits, whether the actual product is appealing or not.

In the Interface Design, the structure criterion suggests that arrangement of site content should not be incidental or arbitrary as users expect not just a clear structure, but also one which makes sense. Users prefer content to be broken into small chunks. This suggests that multiple short pages are easier to manipulate and comprehend than long pages requiring scrolling. Chunks of text could be organized in a variety of ways including linear structures, hierarchal, or

networks. The concern for intelligibility indicates that labeling must be sensible, consistent, unambiguous, and Jargon-free (*Williams & Dargel, 2004*). The categories are distinct from one another and are set off from supporting elements such as logos, revision dates, and access to evaluation forms. Content is organized at subsidiary levels in the hierarchy as well. For instance, academic business listserv lists are grouped by subject while publications are organized by format. As more information is added to the website, the structure may need to expand to accommodate the new information, perhaps by adding a new level to the hierarchy.

The layout or the scope of appearance is another factor in the user-based criteria and their relationships. (*Ambler, 2007*) has highlighted tips and techniques to the user interface design, here are some of them:

- **Consistency:** The software's user interface must work consistently. For example, functions such as double click, single click must lead to the same result for all the contents. The position of the buttons must be placed consistently on the screen and so on.
- **Word your messages and labels effectively:** The main part of the screen will be labeled by information which users will search for when they navigate through it. If the text is displayed improperly then it will be annoying for the user.
- **Set color appropriately:** Colors should be used in moderation. When we use colors in the interface design we have to be careful of not using the colors which may not be visible for the color blind users. The colors must be soft and stay away from annoying.
- **Follow the contrast rule:** If you are going to use color in your application, you need to ensure that the text is still readable. Follow the contrast rules such as: Use dark text on light backgrounds and light text on dark backgrounds.

- **Don't create busy user interfaces:** try to create the user interface with less crowded screens contents so that they are easy to understand.

The website design, in my opinion, plays a vital role to attract loyal customers who in turn can be a valuable source for service improvements provided that it is enriched with aesthetic elements is such as graphics, colors, images, icons, animated sequences, videos and pop-ups. I agree that these elements if well- set-up and carefully chosen do contribute to the atmosphere of the website and are important in evaluating the website experience.

The structure criterion must make sense to the user and short pages are easier to manipulate and comprehend than long pages requiring scrolling. The site should be structured in a way to meet future expansion of new information. The layout or the scope of appearance must have consistency in software's user interface, and screen labeled effectively to display properly the text to avoid annoyance for the user, while color to be set appropriately especially for color blind users. Moreover, one must follow the contrast rule in color application and not to create busy user interfaces. Although these factors are necessary for a sound interface design I recommend that interface design should be variable to cultural backgrounds and levels of human hierarchy. Present interface designs are based on a highly sophisticated western culture and language as a reference criterion and I believe it is biased in this respect. The website interface design should be global and variable to all cultures and languages with restrictions or restraints to access at different age levels.

Tables create an attractive layout of page elements and impose uniformity of appearance on pages. A few small graphics enhance consistency of appearance between pages. A white

background was used to improve readability. In some instances, the evaluation stage may also include testing. Usability testing may be appropriate in those cases where specific design features are used to accomplish particular tasks. All in all the layout or appearance is a prime factor in determining the user's satisfaction or interest when using the website.

## **2.4 Ease of Use**

The E-service quality dimensions which aid in the comfort of the online customer for quality; trust and loyalty were briefly discussed by many scholars, and many others explaining the E-quality dimensions as follows: Ease of Use, Website Design, Customization, Responsiveness and Assurance.

Some researchers believe that the ease of use category is an essential element of consumer usage of computer technologies while others believe it is a determinant of service quality and is decisive for customer satisfaction, since it enhances the efficiency of using the service (*Xue & Harker, 2002*). In E-tailing context the ease of use includes aspects such as functionality, accessibility of information, and ease of ordering and navigation. The transactions via Internet appear complex and as such can intimidate many consumers. The ease of use of the software is thus an important factor in electronic service quality (*Collier & Bienstock, 2006*), while usability in the physical world refers to the layout of the shop and the ease of making one's way around it. It is for software refers to how the user perceives and interacts with the site. The site must be easy to use and an overview of the site and appropriate navigation structures are available. The ease of use is defined as how easy the software is for customers to conduct external search within the software. The use of set-up links with major search engines and concise URL addresses are options that help to attain this objective.

However, participants often complained that “one just can’t find some websites unless you know the exact addresses”. Respondents agreed that sometimes they need to guess the website address or find one by word-of-mouth recommendations. Solution is “Users favored”, “Quick finders” and “User Guidelines”. Moreover, some websites offer the option of internal search which allows customers to search within the site by product, feature, or keyword. This attribute was highly rated by the participants (*Dabholkar, 2000*). Hence, the ease of use is continuously looking forward to attain utmost satisfaction of the users, participants, customers and originators of the website for knowledge preferences.

The ease of use stresses clearly that structure is related to ease of use. Links and buttons facilitate navigation in a web environment. Overviews make a site easier to understand and easier to use. Top-down navigation is easily facilitated by making subsection names into links connecting an overview to the subsections. Many sites use button bars effectively to provide a summary of the site organization and link subsections to each other and to overviews. Small page size can also facilitate rapid navigation by reducing the need for scrolling (*Al-Tarawneh, 2012*). Tables are used to facilitate page organization and minimize white space and consequently the need for scrolling. Shortcuts to popular subsections are provided by listing two hierarchical levels for many of the main organizing categories.

Another relative feature of website ease of use showed that tourists from individualist cultures believe that success is the result of personal effort and that they do not require help from third parties to achieve their aims- hence greater ease of use implies greater speed and usefulness when navigating websites. Therefore it is possible that in more collectivist cultures, ease of use does not carry the same importance as in individualist cultures. The most collectivist cultures



even consider that undertaking an activity such as online shopping may be regarded as doing damage to their image (Slyke *et al.*, 2005). In such cultures the use of communication media that do not allow “face to face” interaction also makes it difficult for people to perceive the actions and behaviors that create social situations.

As in linkage pages provide links that integrate relevant information at the site and at other sites. Links provide access to related topics allowing serendipitous discovery of information. All links function; broken and under construction links are avoided. **Table (2-1)** displays the operational definitions of user criteria for site design. The criteria are arranged in ranked order of importance starting with the use and followed in order by content, structure, linkage, search and finally appearance.

<b>Use</b>	The site is easy to use. An overview of the site and appropriate navigation structures are available.
<b>Content</b>	Useful information. Current information. Concise non-repetitive information. Information not easily or readily found in library collections. Absence of the following: superficial and repetitious information; uninformative content, advertisements, boring text, lack of currency.
<b>Structure</b>	The site displays an intelligible straightforward organizing scheme. Text is broken into appropriate, well-labeled subsections. Large blocks of text are minimized.
<b>Linkage</b>	Pages provide links that integrate relevant information at the site and at other sites. Links provide access to related topics allowing serendipitous discovery of information. All links function; broken and under construction links are avoided.
<b>Search</b>	Search support for page and site searching are provided. Searching produces a precise list of helpful sites or pages with a minimum of processing time.
<b>Appearance</b>	The site is visually attractive on-screen. Any given page contains few graphics and these are appropriate to page content. Graphics are not essential to site use. If graphics are turned off or a text-only client is used, the site remains fully functional. Pages result in attractive printouts without large dark areas.

**Table (2-1): Operational Definitions of User Criteria for Site Design Source: Abels *et al.* (1999)**

The navigation criteria focus on the linkage and search categories. Although linkage relates to structure and organization, it emphasizes the need for integration of information between and within sites. Links should pull together related information to allow the users to explore and discover information serendipitously. Notices of most recent update or verification provide users with some assurance that links are reasonably current. Internal links provide access

to information justifying decisions about the inclusion of content as well as access to opportunities to evaluate the site or suggest content while on the other hand; external links are the main value added by the service.

A variety of business sources are brought together and integrated by content, format, and publisher. Search capabilities should perhaps be an obvious part of site design (*Falconer, 2006*). However, its implementation is rare since the development of separate search module is requested for site searching users want responsive, effective searching, and this area presents the greatest challenge to current designers, particularly those with limited resources. Currently the test site does not support a site search capability. Sadly, non-functional search features or search features that function quite poorly are common among websites. This functionality is high on the priority list for future enhancements on the test site.

I believe that this is the vast and the important criterion for the success and satisfaction of E-Learning. This compresses the belief that the ease of use is an essential element of consumer usage of computer technologies as well as a determinant of service quality which is decisive for customer satisfaction and enhances efficiency. They are inseparable and complementary to each other. The ease of use of the software is in fact an important factor in electronic service quality where customers can conduct external search within the software means to find sites exact addresses through “Users Favored”, “Quick Finders”, and “User guidelines” techniques asserts how the ease of use is very important for utmost satisfaction by the user. The varied benefits of the ease of use between individualist and collectivist cultures affirm that it is a flexible criterion to meet various needs and satisfaction. In summary, the ease of use along with careful and useful information using a sound structure of the site along with linkage facilities for search

support with a visually attractive on-screen creates a pyramid for E-Learning efficiency to any research analysis.

## 2.5 Responsiveness

Customer responsiveness is another major point of study, and it is of importance to examine the relationships pertaining to customer responsiveness of the industrial firm, with competition, market growth and performance (*Pehrsson, 2008*). The relationship between the firm's customer responsiveness attention and its financial performance is positively reinforced if the firm operates in a growing market. The firm strategy comprises major initiatives to enhance competitiveness in the firm's market (*Nag et al., 2007*). Customer responsiveness is the action taken in response to market intelligence concerning individual needs of target customers. The contingency approach to business strategy (*Peteraf & Reed, 2007*) suggests a fit between customer responsiveness and the market context, other reports showed mixed findings on performance effects of customer orientation and moderating effects of customer orientation (*Kirca et al., 2005*). Firms in growing markets have to face general environmental uncertainty of how does market growth affect relationships between perceived competition and customer responsiveness of industrial firms, and how does market growth affect relationships and firm performance.

If customer responsiveness is emphasized the industrial firm may achieve a competitive advantage and high performance levels owing to its greater knowledge of customer needs and to the reputation it builds. Managers do not pay attention to all competitors but focus on key referents due to individuals' limited capacities for paying attention and processing information. Therefore, responsiveness must be influenced by competition (*Pegels et al., 2000*).

A growing market tends to have less established competition standards than a mature market causing uncertainty. Adoptive imitation of the key referent's strategy, whether as a whole or in parts is particularly important when the firm perceives high levels of general environmental uncertainty since it allows for strategy development with less risk and effort than development a strategy from the beginning. For a mature market, there is generally less uncertainty but the main competitor's customer responsiveness may still affect the firm's responsiveness positively (*Soberman & Gatignon, 2005*). On the other hand, the relationship between the attentions paid to customer responsiveness by the industrial firm is a growing market. This is when a volume strategy of the main competitor would be associated with individual attributes of the industrial firm's customer responsiveness. As one alternative, the firm may differentiate from the referent's volume strategy in order to become less vulnerable to price competition (*Matthyssens & Vandenbempt, 2008*).

Theoretically speaking, an industrial firm that operates in a growing market accompanied by less established competition standards and great general uncertainty pays extensive attention to customer access obstacles that may be caused by early efforts of competitors to establish customer loyalties that may become sustainable barriers to competition (*Pehrsson, 2008*). Firms that establish themselves early generally have extensive opportunities to access potential customers, develop relationships with them and meet their product adaptation requirements originating from competition standards. It is generally easier and less costly to expand and acquire customers without much competition and rigid competition in a growing market (*Sorensen, 2009*). All in all the relationship between the industrial firm's attention to customer responsiveness and the firm's financial performance is positively reinforced if it operates in a growing market.

The information accessibility to customer responsiveness and enhanced performance introduced the changes in customers' operating systems, in the forces shaping competition, and in customer and supplier demands all of which increase the necessity for companies to work more closely with their customers. Many firms have worked to create more responsive, adaptable organizations that are essential to supporting today's closer buyer/seller relationships and providing high levels of customer service. Firms must also work to develop a competitive edge that can attract new customers (*Wolfenbarger & Gilly, 2003*). Emphasizing responsiveness may well be the key to retaining current customers as well as adding new ones. Responsiveness involves reacting to or even anticipating what customers want unless firms learn to be responsive, long-term survival is doubtful.

Information is one of the most effective means of achieving enhanced customer responsiveness. Using external sources can yield improvements in a firm's ability to be responsive and an increased flexibility to respond to changing market needs (*Cohen et al., 2003*). A strategy of sub-contracting to secure the required product or service can provide the most rapid form of response. Information sharing is critical to create responsiveness and to make a firm more responsive to customer requests and to build greater customer loyalty and better customer-firm relations (*Pehrsson, 2008*). Because of this, many firms are entering into "infopartnership" to improve customer service that result in higher sales, better control of inventories, substantial logistics savings, and greater financial flexibility. Responsiveness can lead to performance improvements that build and sustain alliances of bolstered by a frank exchange of information.

(*Chai, 2004*) defined the factors that drive a system to be responsive, these factors are (1) stimuli (2) capabilities and (3) goals. There are three methods of creating responsiveness

responding by production plan adjustment to customer; responding by production plan adjustment to raw material available level; and responding by providing raw material. The research also implied that nature of industry types to stimuli and raw materials significantly influence the areas for creating ability to respond. Predicting market responses is essential in consumer industry. The normal customer expectation is that demand will be met quickly when needed.

On the other hand, responsiveness has a positive influence on E-satisfaction. (*Zeithaml et al., 2000*) ascertained that responsiveness may impact quality receptions negatively if customers feel that they are bombarded with company e-mails. With respect to internal links within website, a setup “**Home**” link on each page is advisable. Moreover, links with parent companies, supplementary services (for example, airline associate with hotel or car-rental services), and links that have world-wide accessibility were all considered to be positive attributes. Simple, clear, and consistent layout, good use of frame, and provision of a site map that allows users to skip sections that are of no interest, a clear listed menu, and the company logo being present on each page (Thus enhancing branding) were recommended as E-service quality factors favored by focus group participants and resulting in positive responsiveness (*Han et al., 2001*). One of the important factors of the Internet is that it offers an interactive function with its customers to attain a good E-service quality.

## 2.6 E-Learning Efficiency

Now, what about E-learning replacing the traditional lecture? As E-learning and information technology is going on a fast and tremendous pace in usage by higher education it seems that we are going pretty soon to replace the traditional “Chalk and talk” lecture and seminar that have been used for ages. However, researches at present showed that the new generation would like to see some concrete benefits of technology before they decide to skip the traditional lecture as new technologies will only pay a bit part and can help free up time in order to engage and support students in new and interesting ways. The Internet offers unique opportunities in both teaching and learning applications (*Owens & Floyd, 2007*), students are very keen on using the Internet for entertainment, peer communication, and for secondary sources of data, and in some researched topics students assume that the information does not exist if it is not available on the Internet.

By leveraging IT, the teacher can choose to deliver part of the course content online, and students can communicate with peers and the teacher online at any time outside the classroom. It is a big task confronting researchers as to how to tackle E-learning in classrooms and outside classrooms. The classrooms give the essence of materials and then the students have to apply E-learning on day to day faced problems. The use of E-learning that cooperates with and expands the class is a useful means to improve the traditional class. Reading class content on the web increases opportunities to review, prepare and enhance settlement of the contents to learn many times until a learner is convinced even if he or she is absent from a class because the class content can be reviewed at his or her convenience (*Isao Miyaji, 2009*).

E-learning is being introduced into university classes with the population of the Internet. One of the methods used is educating under the repeated cycle of preparation between the class and the review. This was effective to acquire the ability to think logically and the result was a higher learning progress ratio than that of analyzing information in the class alone. It is necessary to support students to prepare and review materials anytime and anywhere as support of a lecture (*Miyaji & Yoshida, 2005*). Hence, the E-learning can be used to support the students' activities and also to prepare and review before and after a class respectively.

The implementation of E-learning relies on teacher competence, computer provision and access. Technology is becoming more accessible, more flexible, more mobile and more pervasive than before (*Deni, 2002*). People are now more aware of how digital technology changes the way learning takes place and how it transforms the way in which education is conducted as a public service making it a force for improved equality of educational opportunity and equity of entitlement, greater diversity of education, and greater effectiveness and higher standards. The primary color, E-learning has implications for leaders and teachers as well as for parents and pupils. The success has been attributed to the partnership of educational organizations and the private sector working willingly together with the commitment and efforts of teachers in developing competence in using information technology effectively. Moving on, four key priorities have been identified to accomplish such a framework for action: (1) enhancing practice for learners, (2) Enhancing professional practice for teachers and leaders, (3) Enhancing professional support services for schools and (4) Innovating with the infrastructure, the connectivity of the school estate (*Balenskat, 2004*).



E-learning is another way of teaching and learning as it comprise instructions delivered through all electronic media including the Internet, Intranets, Extranets, Satellite Broadcasts, Audio/Video Tapes, Interactive TV and CD-ROMs (*Govindasamy, 2002*). There are distinct parameters affecting the successful implementation of E-learning summarized as follows: institutional support, course development, teaching and learning, course structure, student support, faculty support and evaluation and assessment. Success of the E-learning depends on the interrelationship of these parameters. It is a chain reaction where one faulty ring of the chain may weaken the entire course event of the chain and collapse the E-learning application. Furthermore, anything has advantages and disadvantages even in E-learning, but the advantages must always outweigh its disadvantages for its implementation to be worthwhile. According to (*Kirsh, 2002*), the E-learning advantages are considered as self-paced, provides consistent content, faster, works anywhere and anytime for learners, improves retention, provide immediate feedback, allows learners to customize learning materials to meet their individual needs, and risk-free simulation environments for acquisition of skills. On the other hand, the disadvantages are considered as it may cost more to develop, requires new skills for the production of content, technology might be intimidating, sometimes confusing, frustrating and costly and finally requires more responsibility and self-discipline on learners.

According to (*Prensky, 2001*), student behaviors have changed during the past decade, and thus the existing educational system and learning planning methodologies have to change accordingly in order to produce the expected outcomes. A variety of factors influences the outcomes of E-learning and are classified into four categories: Administration, Functionality, Instruction, and Interaction (*Chen et al., 2008*) while past research indicates the factors influencing the outcomes of E-learning include learner characteristics, learning strategy, learning motivation,

effective or appropriate E-learning environment, technology acceptance, and others. (*Tan, 2003*) identified four key elements of success of E-learning (1) Time management (2) Commitment and Disciplines (3) Motivation and Pro-Activeness and (4) Positive Attitudes.

In relation to learning outcomes, past research indicates that certain online behaviors determine the outcomes of the student achievement (*Sulcic & Lesjak, 2009*). In addition, (*Konings et al., 2005*) found that learners' perceptions of a learning environment influence their subsequent learning outcomes, which consequently affect the quality of their learning achievements; while (*Whisler, 2005*) states that the online interaction is a critical component of learner satisfaction inclusive instructor-to-learner, learner-to-learner, learner-to-content, and learner-to-learning interface. In fact, how learners learn to use technology (i.e. be familiarized with the learning environment) is also crucial to their learning outcomes.

In conclusion, some authors argued that E-Learning may replace the traditional lecture in the coming generations due to the constant efficiency through concrete and beneficial technology. Although this is a valid fact I believe that the human factor will still be present no matter what the consequences may be but at a lesser extent to technological advancement. Higher education must push forth the concept of E-Learning efficiency to gain momentum and support students for what is the use of E-Learning from the start if the student shows noninterest or dissatisfaction of even higher cost barriers!!

The Internet is one gigantic step to E-Learning efficiency but it must convince the new generation of students in seeing the concrete benefits of technology usage and implementation. I strongly recommend the adoption of E-Learning in child education to develop 21<sup>th</sup> century skills for "Knowledge is Power". Moreover I strongly back the four key priorities presented by

*Balenskat* for enhancing practice for learners, professional practice for the teachers and leaders, professional services for schools, and innovating with the infrastructure, the connectivity of the school estate.

In summary, I believe that E-Learning is like an Egyptian pyramid where each stone should be carefully connected to the other in perfect geometrical shape free of imperfections in order to reach the summit of the pyramid (i.e. Errorless efficiency). It is a long and difficult task for E-Learning to be of “Utopian” efficiency but it is worth conquering by future generations with the aid of unique teachers, authors and researchers who strive for such a goal.

## **2.7 Previous Studies**

*Mary Jo Bitner (1992)* under title “*Servicescapes: the impact of physical surroundings on customers and employees*”. A typology of service organizations is presented and a conceptual framework is advanced for exploring the impact of physical surroundings on the behaviors of both customer and employees. The ability of the physical surroundings to facilitate achievement of organizational as well as marketing goals is explored. Literature from diverse disciplines provides theoretical grounding for the framework, which serves as a base for focused propositions. By examining the multiple strategic roles that physical surroundings can exert in service organizations, the author highlights key managerial and research implications.

*Jean Hough & Dave Ellis (1997)* under title *“Acquiring skills for tomorrow today: Cyberspace learning for kids”*. This study considers the development of an on-line electronic learning network, “Cyberspace learning for kids” (CL4K), for children aged 5-16 across Europe examines the impact of information technology (IT) in relation to various learning environments, focuses particular attention on schools, the incorporation of IT into the National Curriculum and the impact this has on teaching, presents findings from an analysis of the project’s user needs, that is, those of teachers, children and parents. The main issue expressed by teachers was the lack of training received in IT skills and lack of funds available to purchase equipment necessary to be able to use IT in the classroom. A decline in general levels of communication in the classroom, at home and between pupils was another issue of concern among teachers and parents. Overall, all users perceived “Cyberspace learning for kids” to be exciting and saw the development of IT skills as an essential asset when seeking employment. The children found the use of the Internet to be a fun way of finding out information and would enjoy using it if such a resource was available in the classroom, etc. With commitment to funding for resources and training CL4K has the potential to offer a fun and stimulating means of gaining information and educating children for the future.

*Martin Graff (2003)* under title *“Cognitive Style and Attitudes towards Using Online Learning and Assessment Methods”*. The studies described in this paper sought to investigate several forms of online learning and assessment methods in terms their efficacy in facilitating student learning. The studies also sought to investigate how participants rated each method. Attitudes toward computer-assisted learning were not related to performance on each of the online methods employed, whereas some relationships were noted between cognitive styles and online learning and assessment. Finally, evaluation feedback from participants indicated that each

online task was rated positively. Implications of the findings for further implementation of online instructional methods are discussed. This study looked at three different areas of online delivery and methods of assessment, which were online searches, an online discussion and an online assessment system. These methods were chosen as being the types of task with which learners would typically engage throughout higher education. In terms of individual differences in the efficacy of such methods the results may be summarized as follows. Few differences were found on each of the three tasks between individuals with differing attitudes towards computers. However, some differences were found between individuals identified with different cognitive styles. Evaluation of the methods used from the participants in this study was generally positive.

*Russell Williams & Miriam Dargel (2004)* under title *“From servicescape to Cyberscape”*. Following Bitner’s well-known “servicescape” model, the propensity of physical surroundings to facilitate organizational as well as marketing goals is now well researched. Their importance is, in general, more important in service settings because of the unique characteristics of services, particularly their intangibility and perishability, the inseparability of production and consumption, and heterogeneity in delivery quality. E-businesses, whether offering products or services, ultimately share many service characteristics. For example, the benefits consumed are often not solely in the products purchased, which could have been purchased elsewhere, but rather in the intangible benefits of interaction with the website, i.e. saved time, convenience, and a reduced risk of dissatisfaction with an enhanced availability of information. This paper adapts Bitner’s model to encounter in “cyberspace”, where the key characteristics of the service “product” are still present, with the result that, just as in the physical setting, stimuli may be planned and designed to engender approach behavior. In so doing, it borrows from the motivational psychology construct of “flow”, a metaphor for optimal experiences.

*Harold W. Webb & Linda A. Webb (2004)* under title “*SiteQual: an integrated measure of Website quality*”. The development and testing of an instrument for obtaining user feedback on the overall quality of B2C electronic commerce Websites, SITEQUAL, were discussed. Using previous research in information quality and service quality as a springboard, a conceptual model and an instrument to measure Website quality were developed. A factor analysis was conducted which suggested that four minimum Website quality factors and seven desired Website quality factors are important to consumers in the retail music industry. The use of Website quality factors for measurement of consumer expectations and perceptions, determining Website requirements, and guiding the testing process were suggested.

*Cheul Rhee, Junghoon Moon, & Youngchan Choe (2005)* under title “*Web interface consistency in e-learning*”. The purpose of this research is to examine the effects of interface consistency on the learning performance of skilled and novice computer users who are studying with web-based e-learning systems. A literature review was conducted, and an experiment was set up to collect data on learning performance with respect to interface consistency and E-Learning systems. Statistical methods were applied. Skilled students made more errors than novices when using a physically inconsistent e-learning system. The learning satisfaction level of those skilled with computers was lower than that of novices using such a system. Conceptually consistent systems facilitated skilled students’ learning satisfaction. Communicationally consistent systems closed the achievement gap within the novice student group. However, the effect of communicational consistency on skilled students was contradictory. Implications include suggestions for designing web-based interfaces of e-learning systems and library websites.

*Lloyd C. Harris & Chris Ezeh (2007)* under title *“Servicescape and loyalty intentions: an empirical investigation”*. This paper seeks better to conceptualize, operationalize and subsequently to test a multi-dimensional and more social view of servicescape and the direct and moderated linkages with loyalty intentions. A survey research method was used to study servicescapes in the context of UK restaurants. In furtherance of conceptualization efforts, a model is developed to evaluate the linear influences of nine servicescape variables on customers’ loyalty intentions. Additionally, the model appraises the impact of personal and environmental factors which moderate the servicescape-loyalty intentions relationship. Analysis of survey responses finds a number of significant associations with loyalty intentions. The results of the study indicate that practitioners should reflect carefully on a range of servicescape variables and judiciously manage such factors to improve the extent to which consumers are likely to foster positive intentions to be loyal. The paper contributes a multi-dimensional and more social framework of servicescape that is subsequently operationalized and tested. It also supplies a measure of servicescape that future researchers may find useful.

*Isao MIYAJI (2009)* under title *“Comparison between Blended Classes Which Incorporate E-learning Inside and Outside the Classroom”*. In cases where e-learning is used mainly outside the class, a lecture is given by lecture slide and a small test is given at the end of the class. Students filled out a question from a structured notebook by viewing lecture slide materials in the e-learning after a lecture. Students planned study support systems at the end of the course. Students submitted reports and evaluated them mutually. In cases where e-learning is used during school hours, the outline of class on each day is explained for about 20 minutes using slides. Students then filled out a question from a structured notebook for about 60 minutes while viewing lecture slide materials in the e-learning. Significant differences between the two

methods were observed for the average score of the small test. The useful activities for improving students' attitude were found. No significant differences between the two methods were observed for the knowledge degree of technical terms and the students' attitude. By comparing the outside the classroom blended class with the inside the classroom blended class, it can be seen that there was no significant difference between the methods. This suggests that one of both blended classes could be used according to which effects of activities a teacher wants to increase. We hope to study the role of respective media forms and the artifice of appropriate instructional design by changing the media which will be used for blended classes in the future.

*Li-An Ho, Tsung-Hsien Kuo, and Binshan Lin (2009)* under title *“Influence of online learning skills in cyberspace”*. This study aims to propose a conceptual structural equation model to investigate the relationships among e-learning system quality, e-learning readiness, e-learners' competency as well as learning outcomes, and to demonstrate the direct and indirect effect of e-learning system quality and e-learning readiness on learning outcomes from the perspectives of e-learners' competency. A questionnaire was distributed to 379 full-time employees from ten technological companies in Taiwan who have had e-learning experience ( $n = \frac{1}{4} 379$ ). Data were analyzed by employing structural equation modeling. Results reveal that both e-learning system quality and e-learning readiness have a direct and significant impact on e-learners' competency. However, e-learning system quality and e-learning readiness influence learning outcomes indirectly through e-learners' competency. In addition, e-learners' competency has direct and positive significant influence on learning outcomes. Practical Based on these findings, organizations in Taiwan that would like to implement e-learning with their employees should focus on improving individuals' online learning skills such as self-direction, meta-cognitive, and collaborative skills. The findings created an understanding of what attributes



of external and internal factors influence the outcome of e-learning in high tech companies. In terms of research contributions, the study extends previous researches by identifying the mediating effect of e-learning competency on the relationship between e-learning system quality, e-learning readiness and learning outcome. Organizations that would like to adopt e-learning to improve employees' knowledge and skills will be able to apply strategies based on the findings from the research.

*Bhavani Sridharan, Hupu Deng and Brian Corbitt (2010)* under title *“Critical success factors in e-learning ecosystems: a qualitative study”*. The purpose of this paper is to evaluate the critical success factors for sustainable e-learning in an e-learning ecosystem framework. Three critical components of the e-learning ecosystem including principles and methods, processes and systems, and substance and content are considered based on a comprehensive review of the relevant literature in e-learning. Systematic interviews are conducted with experts in e-learning for identifying the critical success factors to sustain E-Learning within an e-learning ecosystem framework. This leads to the development of an e-learning success model that describes the underlying relationship between and among the identified critical success factors. A comprehensive analysis of the interview results shows that there are several barriers to the effective adoption of the proposed e-learning success model for improving the effectiveness of e-learning. These barriers include a lack of understanding of the technologies behind various pedagogies, insufficiencies of the popular learning management systems, and the sustainability of the learning objects repositories. The paper highlights the criticality of synergizing the three components of e-learning ecosystems namely pedagogies, technologies and management of learning resources for achieving a sustainable e-learning success. A better understanding of these barriers would help e-learning stakeholders develop appropriate strategies and policies for the

implementation of the proposed e-learning success model towards creating a sustainable e-learning environment. Specific contributions of this research to the entire e-learning community are discussed with recommendations for concerted policy measures to eliminate the identified barriers in the process of adopting the developed e-learning success model.

*Jonathan D. Owens and Liz Price (2010)* under title *“Is e-learning replacing the traditional lecture?”* The purpose of this paper is to review some of the learning technologies associated with teaching and learning in higher education (HE). It looks at e-learning and information technology (IT) as tools for replacing the traditional learning experience in HE, i.e. the “chalk and talk” lecture and seminar. HE is on the threshold of being transformed through the application of learning technologies. Are we on the brink of a new way of learning in HE after a tried and tested formula over 800 years? Adopting a case based approach, the fieldwork for this research took place at two UK Higher Education Institutes (HEIs). A number of units that included IT-based learning were identified. All units included a website that was aimed at supporting students’ learning. The data were collected through unstructured discussion with the lecturer and a questionnaire to students. This paper considers and highlights the key findings from the sample linking them to the literature with the purpose of testing the aim/title of this paper. Evidence suggested the implications for HEIs as they cannot assume that presenting new technologies automatically makes their institutions “youth friendly”; this new generation would like to see some concrete benefits of technology. From this small-scale investigation this paper attempts to investigate in which direction HE might go. Does this generation want a step change? Evidence from this research suggests not – new technologies will only play a bit part. They can help free up time in order to engage and support students in new and interesting ways.

*Mark S. Rosenbaum & Carolyn Massiah (2011)* under title *“An expanded servicescape Perspective”*. The purpose of this paper is to put forth an expanded servicescape framework that shows that a perceived servicescape comprises physical, social, socially symbolic, and natural environmental dimensions. This conceptual paper offers an in-depth literature review on servicescape topics from a variety of disciplines, both inside and outside marketing, to advance a logical framework built on Bitner’s seminal article (1992). A servicescape comprises not only objective, measureable, and managerially controllable stimuli but also subjective, immeasurable, and often managerially uncontrollable social, symbolic, and natural stimuli, which all influence customer approach/avoidance decisions and social interaction behaviors. Furthermore, customer responses to social, symbolic, and natural stimuli are often the drivers of profound person-place attachments. The framework supports a servicescape paradigm that links marketing, environmental/natural psychology, humanistic geography, and sociology. Although managers can easily control a service firm’s physical stimuli, they need to understand how other critical environmental stimuli influence consumer behavior and which stimuli might outweigh a customer’s response to a firm’s physical dimensions. The paper shows how a servicescape’s naturally restorative dimension can promote relief from mental fatigue and improve customer health and well-being. Thus, government institutions (e.g. schools, hospitals) can improve people’s lives by creating natural servicescapes that have restorative potential. The framework organizes more than 25 years of servicescape research in a cogent framework that has cross-disciplinary implications.

*Ute Walter & Bo Edvardsson (2012)* under title *“The physical environment as a driver of customers’ service experiences at restaurants”*. The purpose of this study is to analyze and describe the drivers in the physical environment that help to form customers’ service experiences

at restaurants, as described by customers in their own words. A critical incident study was conducted through 122 interviews resulting in a total of 195 favorable and unfavorable customer service experiences in restaurants. Data were analyzed inductively in accordance with the principles of constant comparison and the results were interpreted by regarding customers as creators of their own meaning. The physical environment has both a functional and a social dimension and it is an important driver of customer service experiences in restaurants. Customers interact with these drivers individually and create their own meanings and value expressed as feelings, thoughts, imagination and behavior. The results develop the tenets of service-dominant logic by offering some insight into customers' own logic in value creation and the design of the physical restaurant environment. Customers actively construct their own individual meanings from the physical environment, throughout the whole service process, indicating that the customer service experience is not controlled solely by restaurant management. As some drivers are only experienced in their absence or when they are noticeably disturbing or pleasing, it is important for managers to understand these dimensions in order to treat them appropriately.

## **2.8 Study Contribution**

To clarify what distinguishes the current study from previous studies, some comparisons have been made, which are presented as follows:

1. Studies referred to in this thesis were conducted in American, European and Asian countries. In contrast, my current study was carried out in Jordan, an Arab country.
2. While previous studies aimed to clarify the effect of ambient conditions and the effect of E-learning dimensions were discussed separately, this current study is concerned to verify the relationship between both of them and their impact on E-learning efficiency.

This study consists of two variables:

**1. Independent variables:** Physical Evidence Components (Ambient Conditions, Ease of Use, Interface Design and Responsiveness).

**2. Dependent variable:** E-Learning Efficiency (Extend and Refine Knowledge, Using Knowledge Meaningfully, and Attitudes & Perceptions)

## **Chapter Three**

### **Method and Procedures**

- 3.1 Introduction**
- 3.2 Study Methodology**
- 3.3 Study Population and Sample**
- 3.4 Demographic Variables**
- 3.5 Study Tools and Data Collection**
- 3.6 Statistic Treatment**
- 3.7 Validity and Reliability**

### **3.1 Introduction**

In this chapter the researcher will describe in detail the methodology used in this study, the study population and its sample. Next, the researcher explains the study tools and the way of data collections. After that, the researcher will discuss the statistical treatment that is used to analyze the collected data. In the final section the validation of the questionnaire and the reliability analysis that is applied will be clearly stated.

### **3.2 Study Methodology**

The current study adopted the descriptive approach involving collecting data in order to test hypotheses or to answer questions concerned with the current status of the subject of the study. Typical descriptive studies are concerned with the assessment of attitudes, opinions, demographic information, conditions, and procedures. The research design chosen for the study is the survey presented. The survey is an attempt to collect data from members of a population in order to determine the current status of that population with respect to one or more variables. The survey research of knowledge at its best can provide very valuable data. The researcher designed a survey instrument that could be administrated to selected subjects. The purpose of the survey instrument was to collect data about the respondents on Physical Evidence Quality.

### **3.3 Study Population and Sample**

To increase credibility, it is important to choose the sample that will represent the population under investigation. The population of the study consists of all the Private Schools in the Capital Amman which is **(459)** based on the website of the ministry of education (<http://www.moe.gov.jo>) where the number of employees is ten at least. On the other hand, the

researcher divided the random sample into two parts; (1) consisting of (50) schools which represent (11%) of the study population, *Table (3-1)* shows the names of the Private Schools in the Capital Amman which have been taken as a sample, and (2) relative to teachers who use the technology equipments in schools, where (230) questionnaires were distributed to them. After retrieving the questionnaires, 30 of them were excluded because of the lack of its suitability for the purposes of statistical analysis. The final sample was (200) questionnaires representing a rate (87%) of the main study sample.

اسم المدرسة	مديرية التربية	المواء	القرية و التجمع	اعداد الطلبة تكون	اعداد الطلبة الطليبة	مجموع الطلاب	مجموع الكادر
الخمائل	التعليم الخاص	وادي السير	وادي السير	307	925	1232	97
الراهبات الفرنسية/ماريوسف	التعليم الخاص	وادي السير	وادي السير	332	315	647	46
عبد الحميد شرف	التعليم الخاص	وادي السير	الذير	253	188	441	53
المعارف / ذكور	التعليم الخاص	الجامعة	تلاخ العلي وخدا أم سماق	347	88	435	50
الانجليزية الحديثة	التعليم الخاص	الجامعة	الجيبية	602	407	1009	139
الأمريكية الحديثة	التعليم الخاص	وادي السير	وادي السير	507	326	833	81
اكاديمية العادة الدولية	التعليم الخاص	الغويسمة	ام قصرين و المعقلين	605	396	1001	114
اكسفورد	التعليم الخاص	الجامعة	الجيبية	781	511	1292	152
العمرية / ذكور	التعليم الخاص	الجامعة	تلاخ العلي وخدا أم سماق	1578	0	1578	113
العمرية / انات	التعليم الخاص	الجامعة	تلاخ العلي وخدا أم سماق	459	1448	1907	138
الدر المنقور	التعليم الخاص	الجامعة	تلاخ العلي وخدا أم سماق	371	2113	2484	127
المعمدانية	التعليم الخاص	الجامعة	تلاخ العلي وخدا أم سماق	536	430	966	89
المطران	التعليم الخاص	قصبية عمان	منطقة زهران	377	0	377	57
الكلية العلمية الإسلامية/ذكور/جبل عمان	التعليم الخاص	قصبية عمان	منطقة زهران	1078	0	1078	98
الإهلية للبنات	التعليم الخاص	قصبية عمان	منطقة زهران	0	1065	1065	142
الاتحاد / انات / طارق	التعليم الخاص	الجامعة	اسكان ابو نصير	338	1318	1656	128
الكلية العلمية الإسلامية/انات/جبل عمان	التعليم الخاص	قصبية عمان	منطقة زهران	0	683	683	71
الوطنية الأرتوذكسية / الشميساني	التعليم الخاص	قصبية عمان	منطقة الجبدلي	1147	839	1986	185
الأمير حمزة بن الحسين	التعليم الخاص	وادي السير	وادي السير	429	354	783	53
الرائد العربي	التعليم الخاص	قصبية عمان	منطقة الجبدلي	483	249	732	88
البكالوريا الدولية	التعليم الخاص	الجامعة	صويلح	494	439	933	85
المعارف / انات	التعليم الخاص	الجامعة	تلاخ العلي وخدا أم سماق	0	141	141	19
المشرق الدولية	التعليم الخاص	الجامعة	تلاخ العلي وخدا أم سماق	535	364	899	86
اكاديمية عمان	التعليم الخاص	الجامعة	تلاخ العلي وخدا أم سماق	680	491	1171	101



46	360	163	197	الجببية	الجامعة	التعليم الخاص	الاتحاد / ذكور/ المدينة الرياضية
83	783	387	396	وادي السير	وادي السير	التعليم الخاص	فيلادلفيا الوطنية / اناث
55	623	223	400	وادي السير	وادي السير	التعليم الخاص	اليون الخاصة
139	1784	1295	489	ام قصرين و المقابلين	الغويصة	التعليم الخاص	الحصاد التربوي / اناث
123	1079	412	667	تلاع العلي وخذدا أم سماق	الجامعة	التعليم الخاص	العصرية
55	836	358	478	ام قصرين و المقابلين	الغويصة	التعليم الخاص	المحور الدولية
21	218	0	218	وادي السير	وادي السير	التعليم الخاص	فيلادلفيا الوطنية / ذكور
60	561	228	333	ام قصرين و المقابلين	الغويصة	التعليم الخاص	المستقلة الدولية
193	2506	1091	1415	تلاع العلي وخذدا أم سماق	الجامعة	التعليم الخاص	الرضوان
77	1033	444	589	الغويصة و الجويصة و ابو علندا و الرجيب	الغويصة	التعليم الخاص	التويغات الدولية
91	868	0	868	تلاع العلي وخذدا أم سماق	الجامعة	التعليم الخاص	اكاديمية ساندس الوطنية الاولى / ام السماق
187	1294	559	735	تلاع العلي وخذدا أم سماق	الجامعة	التعليم الخاص	المونتييسوري الحديثة
225	1956	1389	567	تلاع العلي وخذدا أم سماق	الجامعة	التعليم الخاص	اكاديمية ساندس الوطنية الثانية / تلاع العلي
87	1301	563	738	وادي السير	وادي السير	التعليم الخاص	القمة الاولى
130	1564	1497	67	منطقة الجبلي	قصبية عمان	التعليم الخاص	راهبات الوردية / الشميساني
94	1454	0	1454	ام قصرين و المقابلين	الغويصة	التعليم الخاص	الحصاد التربوي / ذكور
22	64	33	31	بدر الجديدة	وادي السير	التعليم الخاص	الحياة-الاردن
138	1301	489	812	وادي السير	وادي السير	التعليم الخاص	العالمية الثانية / طريق المطار
19	172	13	159	وادي السير	وادي السير	التعليم الخاص	اقرأ الدولية
37	389	229	160	منطقة رأس الحين	قصبية عمان	التعليم الخاص	راهبات الوردية / المصدر
69	935	0	935	تلاع العلي وخذدا أم سماق	الجامعة	التعليم الخاص	الجزيرة
46	719	317	402	منطقة المدينة	قصبية عمان	التعليم الخاص	راهبات الوردية / جبل عمان
103	938	504	434	وادي السير	وادي السير	التعليم الخاص	راهبات الوردية / مرج الحمام
41	660	545	115	تلاع العلي وخذدا أم سماق	الجامعة	التعليم الخاص	الجزيرة اناث
12	100	37	63	وادي السير	وادي السير	التعليم الخاص	العقيق العالمية
12	138	59	79	منطقة زهران	قصبية عمان	التعليم الخاص	اكاديمية المواهب

*Table (3-1) The Names of the Private Schools of the Study Sample*

### 3.4 Demographic Variables

*Table (3-2)* shows the demographic variables of the study sample (Age; Gender; Educational level; Experience).

<i>No</i>	<i>Variables</i>	<i>Categorization</i>	<i>Frequency</i>	<i>Percent</i>
<i>1</i>	<i>Age</i>	30 years or less	<i>109</i>	<i>54.5</i>
		31-40 years	<i>73</i>	<i>36.5</i>
		41-50 years	<i>16</i>	<i>8.0</i>
		51 years or more	<i>2</i>	<i>1.0</i>
<i>Total</i>			<i>200</i>	<i>100%</i>
<i>2</i>	<i>Gender</i>	Male	<i>48</i>	<i>24.0</i>
		Female	<i>152</i>	<i>76.0</i>
<i>Total</i>			<i>200</i>	<i>100%</i>
<i>3</i>	<i>Educational Level</i>	BSc	<i>168</i>	<i>84.0</i>
		Master or High	<i>26</i>	<i>13.0</i>
		Diploma	<i>3</i>	<i>1.5</i>
		PhD	<i>3</i>	<i>1.5</i>
<i>Total</i>			<i>200</i>	<i>100%</i>
<i>4</i>	<i>Experience</i>	5 Years or less	<i>110</i>	<i>55.0</i>
		6-10 Years	<i>67</i>	<i>33.5</i>
		11-15 years	<i>22</i>	<i>11.0</i>
		16 Years or more	<i>1</i>	<i>0.5</i>
<i>Total</i>			<i>200</i>	<i>100%</i>

*Table (3-2) Descriptive sample of the demographic variables of the study*

**Table (3-2)** shows that **(91%)** of the sample ranged below **(41)** years. This indicates that the focus will be on the element of youth. On the other hand, the **(76%)** of the study sample is female and **(24%)** is male, this refers that women have taken on roles which are more "nurturing", which are in line with their unique talents as women. A **2006** study by the *National Education Association* showed that preschool and elementary school children are taught by 75 percent more female than male teachers and this study concludes that women often teach in ways that may fit students better, such as sitting at desks and using worksheets for learning. More female teachers than male expect a quiet and orderly classroom, which students appreciate. The

educational level; all members of the study sample have a scientific qualification which is a good sign in adopting the high educational qualifications to accomplish the work in the Education Sector. As for the experience, Five years or less was (55%), from 6 -10 years (33.5%), from 11-15 years (11%), finally above 16 years (0.5%).

### 3.5 Study Tools and Data Collection

The current study consists of two aspects, theoretical and practical. In the theoretical aspect, the researcher relied on the scientific studies that are related to the current study. Whereas in the practical aspect, the researcher relied on descriptive and analytical methods using the practical manner to collect, analyze data and test hypotheses.

The data collection, manners of analysis and programs used in the current study are based on two sources:

1. **Secondary sources:** books, journals, and theses to write the theoretical framework of the study.
2. **Primary source:** a questionnaire that was designed to reflect the study objectives and questions.

In this study, both primary and secondary data were used. The data collected for the model was through questionnaire. After conducting a thorough review of the literature pertaining to Ambient Conditions, Ease of Use, Interface Design, Responsiveness and E-Learning Efficiency, the researcher formulated the questionnaire instrument for this study.

The questionnaire instrumental sections are as follows:

**Section One: Demographic variables.** The demographic information was collected with closed-ended questions, through (4) factors (Age; Gender; Educational level and Years of Experience)

**Section Two: Physical Evidence.** This section measured the Physical Evidence through (4) dimensions (Ambient Conditions was measured through (6) paragraphs, Ease of Use was measured through (4) paragraphs, Interface Design was measured through (6) paragraphs and Responsiveness was measured through (4) paragraphs on a Likert-type scale as follows:

<i>Strongly Agree</i>	<i>Agree</i>	<i>Neutral</i>	<i>Disagree</i>	<i>Strongly Disagree</i>
5	4	3	2	1

**Section Three: E-Learning Efficiency.** This section measured the E-Learning Efficiency through (3) dimensions (Extend and Refine Knowledge was measured through (5) paragraphs, Use Knowledge Meaningfully was measured through (3) paragraphs and Attitudes and Perceptions was measured through (3) paragraphs on a Likert-type scale as follows:

<i>Strongly Agree</i>	<i>Agree</i>	<i>Neutral</i>	<i>Disagree</i>	<i>Strongly Disagree</i>
5	4	3	2	1

### 3.6 Statistic Treatment

The data collected from the responses of the study questionnaire were used through Statistical Package for Social Sciences (SPSS). Finally, the researcher used the suitable statistical methods that consist of:

- Percentage and Frequency.

- Cronbach Alpha reliability ( $\alpha$ ) to measure strength of the correlation and coherence between questionnaire items.
- Arithmetic Mean to identify the level of response of study sample individuals to the study variables.
- Standard Deviation to Measure the responses spacing degree about Arithmetic Mean.
- Simple Regression analysis to Measure the impact of study variables on testing the direct effects.
- Relative importance, assigned due to:

$$\text{Class Interval} = \frac{\text{Maximum Class} - \text{Minimum Class}}{\text{Number of Level}}$$

$$\text{Class Interval} = \frac{5 - 1}{3} = \frac{4}{3} = 1.33$$

- *The Low degree from 1 – 2.32*
- *The Medium degree from 2.33 – 3.66*
- *The High degree from 3.67 and above.*

## 3.7 Validity and Reliability

### 3.7.1 Validation

To test the questionnaire for clarity and to provide a coherent research questionnaire, a macro review that covers all the research constructs was thoroughly performed by academic reviewers from Jordan Universities specialized in faculty and practitioners Business Administration, Marketing, and Management Information System. Some

items were added, while others were dropped based on their valuable recommendations. Some others were reformulated to become more accurate to enhance the research instrument. The academic reviewers are (5). (See appendix “2”).

### 3.7.2 Study Tool Reliability

To calculate the stability of an instrument study, the researcher used the equation of internal consistency using test Cronbach's alpha shown in *Table (3-3)* the test results where the values of Cronbach alpha for all variables of the study and identification of generally higher (60%) which is acceptable in the research and studies, which gives the questionnaire as a whole the reliability coefficient ranged between (73.1-90.8%), as shown in *Table (3-3)*.

<i>Variables</i>	<i>Cronbach Alpha</i>
<b><i>Physical Evidence</i></b>	<b>90.8</b>
Ambient Conditions	85.8
Ease of Use	73.1
Interface Design	84.2
Responsiveness	79.4
<b><i>E-Learning Efficiency</i></b>	<b>81.3</b>
Extend and Refine Knowledge	86.9
Use Knowledge Meaningfully	77.7
Attitudes and Perceptions	73.5
<b><i>All Questions</i></b>	<b>91.9</b>

*Table (3-3) Reliability of Questionnaire Dimensions*

## **Chapter four**

### **Analysis Results & Hypotheses Test**

#### **4.1 Introduction**

#### **4.2 Descriptive analysis of study variables**

#### **4.3 Study Hypotheses Test**

## 4.1 Introduction

According to the purpose of the research and the research framework presented in the previous chapter, this chapter describes the results of the statistical analysis for the data collected according to the research questions and research hypotheses. The data analysis includes a description of the Means and Standard Deviations for the questions of the study; Simple Regression analysis was used.

## 4.2 Descriptive Analysis of Study Variables

### 4.2.1 Physical Evidence (Ambient Conditions)

The researcher used the arithmetic mean, standard deviation, item importance and importance level as shown in *Table (4-1)*.

<i>No</i>	<i>Statements</i>	<i>Mean</i>	<i>Std. Deviation</i>	<i>Item Importance</i>	<i>Importance Level</i>
1	The organization is always careful about the classroom smell.	4.42	0.60	5	High
2	The organization has clean walkways, exits and classrooms.	4.45	0.57	4	High
3	Proper lighting is provided in classrooms.	4.50	0.55	2	High
4	The classroom temperature is appropriate according to the weather.	4.22	0.76	6	High
5	Signs, symbols and artifacts are used for communication.	4.48	0.63	3	High
6	The organization owns an IT infrastructure represented in (Computers, Projectors, and Internet).	4.57	0.57	1	High
<b><i>Total</i></b>		<b>4.44</b>	<b>0.62</b>		<b>High</b>

*Table (4-1) Arithmetic Mean, SD, Item Importance and Importance Level of Ambient Conditions*

It's clear from *Table (4-1)* that the mean of this axis (Ambient Conditions), ranged between (4.22 – 4.57), where the whole axis earned a total mean of (4.44), which is a level of



high. Paragraph (6) (The organization owns an IT infrastructure represented in (Computers, Projectors and internet)) earned the highest mean reaching (4.57), with standard deviation (0.57), which is a level of High, and paragraph (4) (The classroom temperature is appropriate according to the weather) came in last Place. It earned a mean of (4.22), and a standard deviation (0.76), which is a level of High.

*This explains that the perspective of the teachers about the Ambient Conditions in the Private Schools in Amman was in the High level.*

#### 4.2.2 Physical Evidence (Ease of Use)

The researcher used the arithmetic mean, standard deviation, item importance and importance level as shown in *Table (4-2)*.

<i>No</i>	<i>Statements</i>	<i>Mean</i>	<i>Std. Deviation</i>	<i>Item Importance</i>	<i>Importance Level</i>
1	It is easy to get access to the educational software.	4.50	0.60	3	High
2	The software components and screens are user friendly.	4.66	0.54	1	High
3	The search/Find mechanism is offered by the software to speed up the operation of information retrieval.	4.35	0.66	4	High
4	Navigation through the pages of the software pleasurable.	4.52	0.63	2	High
<b><i>Total</i></b>		<b>4.51</b>	<b>0.61</b>		<b>High</b>

*Table (4-2) Arithmetic Mean, SD, Item Importance and Importance Level of Ease of Use*

It's clear from *Table (4-2)* that the mean of this axis (Ease of Use), ranged between (4.35 – 4.66), where the whole axis earned a total mean of (4.51), which is a level of high. Paragraph (2) (The software components and screens are user friendly) earned the highest mean reaching (4.66), with standard deviation (0.54), which is a level of High, and paragraph (3) (The

Search/Find mechanism is offered by the software to speed up the operation of information retrieval) came in last Place. It earned a mean of (4.35), and a standard deviation (0.66), which is a level of High.

*This explains that the perspective of the teachers about the Ease of Use in the Private Schools in Amman was in the High level.*

### 4.2.3 Physical Evidence (Interface Design)

The researcher used the arithmetic mean, standard deviation, item importance and importance level as shown in *Table (4-3)*.

<i>No</i>	<i>Statements</i>	<i>Mean</i>	<i>Std. Deviation</i>	<i>Item Importance</i>	<i>Importance Level</i>
1	The information on the software pages is attractively displayed.	4.49	0.61	4	High
2	The software pages layout and colors are appealing.	4.60	0.57	1	High
3	The software provides information in an appropriate format (font style, font size, font type, ... etc)	4.48	0.62	5	High
4	By hovering the mouse over the icons a tooltip will pop up explaining the function.	4.46	0.72	6	High
5	There is a harmony of colors between the background of the screens and the used line color of the pages in the educational program.	4.52	0.65	2	High
6	Warning/exclamation messages appear during the application of the curriculum to introduce the student to certain things.	4.51	0.66	3	High
<b><i>Total</i></b>		<b>4.51</b>	<b>0.64</b>		<b>High</b>

*Table (4-3) Arithmetic Mean, SD, Item Importance and Importance Level of Interface Design*

It's clear from *Table (4-3)* that the mean of this axis (Interface Design), ranged between (4.46 – 4.60), where the whole axis earned a total mean of (4.51), which is a level of high.

Paragraph (2) (The software pages layout and colors are appealing) earned the highest mean reaching (4.60), with standard deviation (0.57), which is a level of High, and paragraph (4) (By hovering the mouse over the icons a tooltip will pop up explaining the function) came in last Place. It earned a mean of (4.46), and a standard deviation (0.72), which is a level of High too.

*This explains that the perspective of the teachers about the Interface Design in the Private Schools in Amman was in the High level.*

#### 4.2.4 Physical Evidence (Responsiveness)

The researcher used the arithmetic mean, standard deviation, item importance and importance level as shown in *Table (4-4)*.

<i>No</i>	<i>Statements</i>	<i>Mean</i>	<i>Std. Deviation</i>	<i>Item Importance</i>	<i>Importance Level</i>
1	It is easy to get in contact with software supporting staff.	4.05	0.66	4	High
2	It is easy to get the feedback from the users about the software.	4.14	0.74	3	High
3	The software quickly replies to the student requests -questions or inquiries	4.19	0.67	2	High
4	The software keeps the students up-to-date about the latest news.	4.20	0.69	1	High
<b><i>Total</i></b>		<b>4.14</b>	<b>0.69</b>		<b>High</b>

*Table (4-4) Arithmetic Mean, SD, Item Importance and Importance Level of Responsiveness*

It's clear from *Table (4-4)* that the mean of this axis (Responsiveness), ranged between (4.05 – 4.20), where the whole axis earned a total mean of (4.14), which is a level of high. Paragraph (4) (The software keeps the students up-to-date about the latest news) earned the highest mean reaching (4.20), with standard deviation (0.69), which is a level of High, and paragraph (1) (It is easy to get in contact with software supporting staff) came in last Place. It earned a mean of (4.05), and a standard deviation (0.66), which is a level of High too.

*This explains that the perspective of the teachers about the Responsiveness in the Private Schools in Amman was in the High level.*

#### 4.2.5 E-Learning Efficiency (Extend and Refine Knowledge)

The researcher used the arithmetic mean, standard deviation, item importance and importance level as shown in *Table (4-5)*.

<i>No</i>	<i>Statements</i>	<i>Mean</i>	<i>Std. Deviation</i>	<i>Item Importance</i>	<i>Importance Level</i>
1	The purpose of the E-learning is to get new or improve existing knowledge.	4.61	0.53	1	High
2	The purpose of the E-learning is to improve the existing skill.	4.54	0.54	3	High
3	Efficient instructions within the software lead to a better learning.	4.52	0.60	4	High
4	Efficient instructions within the software lead to a faster learning.	4.45	0.53	5	High
5	E-Learning Provides greater access to educational opportunities to students.	4.59	0.57	2	High
<b><i>Total</i></b>		<b>4.54</b>	<b>0.55</b>		<b>High</b>

*Table (4-5) Arithmetic Mean, SD, Item Importance and Importance Level of Extend and Refine Knowledge*

It's clear from *Table (4-5)* that the mean of this axis (Extend and Refine Knowledge), ranged between (4.45 – 4.61), where the whole axis earned a total mean of (4.54), which is a level of high. Paragraph (1) (The purpose of the E-learning is to get new or improve existing knowledge) earned the highest mean reaching (4.61), with standard deviation (0.53), which is a level of High, and paragraph (4) (Efficient instructions within the software lead to a faster learning) came in last Place. It earned a mean of (4.45), and a standard deviation (0.53), which is a level of High too.

*This explains that the perspective of the teachers about Extending and Refining Knowledge in the Private Schools in Amman was in the High level.*

#### 4.2.6 E-Learning Efficiency (Using Knowledge Meaningfully)

The researcher used the arithmetic mean, standard deviation, item importance and importance level as shown in *Table (4-6)*.

<i>No</i>	<i>Statements</i>	<i>Mean</i>	<i>Std. Deviation</i>	<i>Item Importance</i>	<i>Importance Level</i>
1	E-Learning increases the student's efficiency in applying the skills he has learnt.	4.60	0.53	1	High
2	E-Learning will bring new opportunities for organizing teaching and learning	4.57	0.61	2	High
3	E-Learning Provide easy access and encourage student to get the information.	4.56	0.55	3	High
<i>Total</i>		<b>4.58</b>	<b>0.57</b>		<b>High</b>

*Table (4-6) Arithmetic Mean, SD, Item Importance and Importance Level of Using Knowledge Meaningfully*

It's clear from *Table (4-6)* that the mean of this axis (Using Knowledge Meaningfully), ranged between (4.56 – 4.60), where the whole axis earned a total mean of (4.58), which is a level of high. Paragraph **(1)** (E-Learning increases the student's efficiency in applying the skills he has learnt) earned the highest mean reaching (4.60), with standard deviation (0.53), which is a level of High. Similarly, paragraph **(3)** (E-Learning provides easy access and encourage student to get the information) came in last Place. It earned a mean of (4.56), and a standard deviation (0.55), which is a level of High too.

*This explains that the perspective of the teachers about Using Knowledge Meaningfully in the Private Schools in Amman was in the High level.*

### 4.2.7 E-Learning Efficiency (Attitudes and Perceptions)

The researcher used the arithmetic mean, standard deviation, item importance and importance level as shown in *Table (4-7)*.

<i>No</i>	<i>Statements</i>	<i>Mean</i>	<i>Std. Deviation</i>	<i>Item Importance</i>	<i>Importance Level</i>
1	Use of IT, especially computers and Internet, makes it easy to act with E-Learning.	4.63	0.55	1	High
2	The E-learning save time and effort.	4.51	0.66	2	High
3	E-Learning solves educational problems.	3.61	1.22	3	Medium
<b><i>Total</i></b>		<b>4.25</b>	<b>0.81</b>		<b>High</b>

*Table (4-7) Arithmetic Mean, SD, Item Importance and Importance Level of Attitudes and Perceptions*

It's clear from *Table (4-7)* that the mean of this axis (Attitudes and Perceptions), ranged between (3.61 – 4.63), where the whole axis earned a total mean of (4.25), which is a level of high. Paragraph (1) (Use of IT, especially computers and Internet, makes it easy to act with E-Learning.) earned the highest mean reaching (4.63), with standard deviation (0.55), which is a level of High. Similarly, paragraph (3) (E-Learning solves educational problems) came in last place. It earned a mean of (3.61), and a standard deviation (1.22), which is a level of High too.

*This explains that the perspective of the teachers about the Attitudes and Perceptions in the Private Schools in Amman was in the High level.*

### 4.3 Study Hypotheses Test

The researcher in this part tested the main hypothesis and studied sub hypotheses, through Multiple, Simple Linear Regression analysis with (F) test using ANOVA table as follows:

**H01: There is no significant positive effect of Physical Evidence Components (Ambient Conditions, Ease of Use, Interface Design and Responsiveness) on E-Learning efficiency in Private Schools in Amman at level ( $\alpha \leq 0.05$ ).**

To test this hypothesis the researcher uses the multiple regression analysis to ensure the impact of Physical Evidence components on E-Learning Efficiency in Private schools in Amman as shown in *Table (4-8)*.

<i>Physical Evidences Components</i>	<i>B</i>	<i>Std. Error</i>	<i>Beta</i>	<i>T Calculated</i>	<i>Sig</i>
<b>Ambient Conditions</b>	0.237	0.059	0.290	4.053	0.000
<b>Ease of Use</b>	0.127	0.064	0.148	1.976	0.050
<b>Interface Design</b>	0.189	0.068	0.234	2.765	0.006
<b>Responsiveness</b>	0.042	0.049	0.060	0.875	0.383

*Table (4-8) Multiple Regression Test to identify the impact of the Physical Evidence components (Ambient Conditions, Ease of Use, Interface Design and Responsiveness on E-learning Efficiency*

It is Clear from *table (4-8)* that the variables (*Ambient Conditions, Ease of Use, and Interface Design*) have an impact on E-learning Efficiency, reaching values (t) calculated (*4.053, 1.976, 2.765*), respectively, which values significant at the level of significance ( $\alpha \leq 0.05$ ), have not been shown any effect of (*Responsiveness*) on E-learning Efficiency, amounted (t) (*0.875*).

<i>Order of entry of independent elements in the equation to predict</i>	<i>R<sup>2</sup></i>	<i>(F) Value</i>	<i>T Calculated</i>	<i>Sig</i>
<b>Interface Design</b>	0.271	73.694	3.331	0.001
<b>Ambient Conditions</b>	0.346	52.064	4.173	0.000
<b>Ease of Use</b>	0.359	36.558	1.994	0.048

*Table (4-9) Stepwise Multiple Regression test to identify the effect of the Physical Evidence components on*

*E-Learning Efficiency*

When the study made a Stepwise Multiple Regression to determine the importance of each independent variable separately in contributing to the mathematical model that represents the impact of Physical Evidences (Ambient Conditions, Interface Design, Ease of Use and Responsiveness) on E-Learning Efficiency, *table (4-9)* shows that the order of entry independent variables in the regression equation, the variable Interface Design has occupied the first place with amount (27.1%), while the Ambient Conditions was (34.6%).

To ensure the impact of Physical Evidence components on E-Learning Efficiency in Private schools in Amman, the researcher divides the hypothesis into four-sub hypotheses, and uses the Simple Regression analysis to test each sub hypothesis as the following:

**H<sub>01-1</sub> There is no significant positive effect of Ambient Conditions (Light, Odor, Colors, Paint, Music... etc) on E-Learning Efficiency in Private Schools in Amman at level ( $\alpha \leq 0.05$ ).**

<i>R Regression</i>	<i>R<sup>2</sup> The Effect</i>	<i>(F) Calculated</i>	<i>(F) Tabulated</i>	<i>Beta Relationship</i>	<i>DF Degree of Freedom</i>	<i>Sig</i>
<b>0.519</b>	<b>0.269</b>	<b>72.999</b>	<b>1.96</b>	<b>0.519</b>	<b>199</b>	<b>0.000</b>

*Table (4-10) Simple regression analysis test results of the impact of Ambient Conditions on E-learning Efficiency in Private Schools in Amman*



From *table (4-10)* it is observed that there is a significant impact of Ambient Conditions on E-Learning Efficiency in Private Schools in Amman. The  $R$  was (0.519) at level ( $\alpha \leq 0.05$ ), whereas the  $R^2$  was (0.269). This means the (0.269) of E-Learning Efficiency changes resulting from the changes in Ambient Conditions. As  $\beta$  was (0.519) this means the increase of one unit in Ambient Conditions variables concerned will increase E-Learning Efficiency value (0.519). Assuring significant impact  $F_{Calculate}$  was (33.820) and is significant at level ( $\alpha \leq 0.05$ ) compared with  $F_{Tabulated}$  was (1.96), and that assures invalid first sub hypothesis. Unaccepted null Hypothesis and accepted alternative hypothesis:

*There is significant positive effect of Ambient Conditions on E-Learning Efficiency in Private Schools in Amman at level ( $\alpha \leq 0.05$ )*

**H<sub>01-2</sub> There is no significant positive effect of Ease of Use (Navigation, Search and Linkage) on E-Learning Efficiency in Private Schools in Amman at level ( $\alpha \leq 0.05$ ).**

<i>R Regression</i>	<i>R<sup>2</sup> The Effect</i>	<i>(F) Calculated</i>	<i>(F) Tabulated</i>	<i>Beta Relationship</i>	<i>DF Degree of Freedom</i>	<i>Sig</i>
<b>0.459</b>	<b>0.211</b>	<b>52.936</b>	<b>1.96</b>	<b>0.459</b>	<b>199</b>	<b>0.000</b>

*Table (4-11) Simple regression analysis test results of the impact of Ease of Use on E-learning Efficiency in Private Schools in Amman*

From *table (4-11)* it is observed that there is a significant impact of Ease of Use on E-Learning Efficiency in Private schools in Amman. The  $R$  was (0.459) at level ( $\alpha \leq 0.05$ ), whereas the  $R^2$  was (0.211). This means the (0.211) of E-Learning Efficiency changes resulting from the changes in Ease of Use. As  $\beta$  was (0.459) this means the increase of one unit in Ease of Use variables concerned will increase E-Learning Efficiency value (0.459). Assuring significant

impact  $F_{Calculate}$  was (52.936) and is significant at level ( $\alpha \leq 0.05$ ) compared with  $F_{Tabulated}$  was (1.96), and that assures invalid second sub hypothesis. Unaccepted null Hypothesis and accepted alternative hypothesis:

*There is significant positive effect of Ease of Use on E-Learning Efficiency in Private Schools in Amman at level ( $\alpha \leq 0.05$ )*

**H0<sub>1.3</sub> There is no significant positive effect of the Interface Design (Layout design, Structure) on E-Learning Efficiency in Private Schools in Amman at level ( $\alpha \leq 0.05$ ).**

<i>R Regression</i>	<i>R<sup>2</sup> The Effect</i>	<i>(F) Calculated</i>	<i>(F) Tabulated</i>	<i>Beta Relationship</i>	<i>DF Degree of Freedom</i>	<i>Sig</i>
<b>0.521</b>	<b>0.271</b>	<b>73.694</b>	<b>1.96</b>	<b>0.521</b>	<b>199</b>	<b>0.000</b>

*Table (4-12) Simple regression analysis test results of the impact of Interface Design on E-learning Efficiency in Private Schools in Amman*

From *table (4-12)* we observe that there is a significant impact of Interface Design on E-Learning Efficiency in Private Schools in Amman. The  $R$  was (0.521) at level ( $\alpha \leq 0.05$ ), whereas the  $R^2$  was (0.271). This means the (0.271) of E-Learning Efficiency changes resulting from the changes in Interface Design. As  $\beta$  was (0.521) this means the increase of one unit in Interface Design variables concerned will increase E-Learning Efficiency value (0.521). Assuring significant impact  $F_{Calculate}$  was (73.694) compared with  $F_{Tabulated}$  was (1.96) and that assures invalid third sub hypothesis. Unaccepted null Hypothesis and accepted alternative hypothesis:

*There is significant positive effect of Interface Design on E-Learning Efficiency in Private Schools in Amman at level ( $\alpha \leq 0.05$ )*

**H<sub>01.4</sub>** There is no significant positive effect of Responsiveness on E-Learning Efficiency in Private Schools in Amman at level ( $\alpha \leq 0.05$ ).

<i>R</i> <i>Regression</i>	<i>R</i> <sup>2</sup> <i>The Effect</i>	<i>(F)</i> <i>Calculated</i>	<i>(F)</i> <i>Tabulated</i>	<i>Beta</i> <i>Relationship</i>	<i>DF</i> <i>Degree of</i> <i>Freedom</i>	<i>Sig</i>
0.350	0.122	27.560	1.96	0.350	199	0.000

*Table (4-13) Simple regression analysis test results of the impact of Responsiveness on E-learning Efficiency in Private Schools in Amman*

From *table (4-13)* we observe that there is a significant impact of Responsiveness on E-Learning Efficiency in Private Schools in Amman. The **R** was (0.350) at level ( $\alpha \leq 0.05$ ), whereas the **R**<sup>2</sup> was (0.122). This means the (0.122) of E-Learning Efficiency changes resulting from the changes in Responsiveness. As  **$\beta$**  was (0.350) this means the increase of one unit in Responsiveness variables concerned will increase E-Learning Efficiency value (0.350). Assuring significant impact **F** *Calculate* was (27.560) compared with **F** *Tabulated* was (1.96) and that assures invalid fourth sub hypothesis. Unaccepted null Hypothesis and accepted alternative hypothesis:

*There is significant positive effect of Responsiveness on E-Learning Efficiency in Private Schools in Amman at level ( $\alpha \leq 0.05$ )*

## **Chapter Five**

### **Results & Conclusions, Recommendations**

#### **5.1 Results & Conclusion**

#### **5.2 Recommendations**

## 5.1 Results & Conclusion

The current study posed a set of questions, placing the hypotheses and their relation to the impact within the study variables. The study reached many results that contributed to solve the study problem described in chapters one, answering the questions and hypotheses of the study.

The main results are:

1. The importance level of *Ambient Conditions* (Light, Odor, Colors, Paint, Music...etc), *Ease of Use* (Layout design, Structure), *Interface Design* (Navigation, Search, and Linkage), *and Responsiveness* (Getting feedback, Contact the Supporting Staff and Customer Satisfaction) in Private Schools in Amman were fell in the category of **high**.
2. The importance of E-Learning Efficiency (*Extend and Refine Knowledge, Using Knowledge Meaningfully and Attitudes & Perceptions*) were fell in the category of **high**

According to the Multiple Regression Test:

3. Ambient Conditions, ease of use and interface design have an impact on E-Learning efficiency except the responsiveness variable did not show any effect on E-Learning efficiency and according to the stepwise multiple regression test, the Interface design has occupied the first place.

According to the Simple Regression Test:

4. There was a significant positive effect of Ambient Conditions on E-Learning Efficiency in all its aspects (*Extending and Refining Knowledge, Using Knowledge Meaningfully, Attitudes and Perceptions*) in Private Schools in Amman at level ( $\alpha \leq 0.05$ ).
5. There was a significant positive effect of Ease of Use on E-Learning Efficiency in all its aspects (*Extending and Refining Knowledge, Using Knowledge Meaningfully, Attitudes and Perceptions*) in Private Schools in Amman at level ( $\alpha \leq 0.05$ ).

6. There was a significant positive effect of Interface Design on E-Learning Efficiency in all its aspects (*Extending and Refining Knowledge, Using Knowledge Meaningfully, Attitudes and Perceptions*) on E-Learning Efficiency in Private Schools in Amman at level ( $\alpha \leq 0.05$ ).
7. There was a significant positive effect of Responsiveness on E-Learning Efficiency (*Extending and Refining Knowledge, Using Knowledge Meaningfully, Attitudes and Perceptions*) in Private Schools in Amman at level ( $\alpha \leq 0.05$ ).

Nothing read can be taken for granted as a successful and satisfying theory of one author might not be applicable in reversed studies by another. I find E-learning a challenging topic to introduce in researched university applications as it is a vast and never-ending channel of information and a guideline for future generations. That is why I have it as an interesting topic for my thesis presentation. I will always assert that the role of the teacher is very essential to the application and continued support for its implication if E-learning is to succeed and gain student momentum no matter what others may say or imply. Let mankind continue the path for knowledge to make this globe worth living in as almighty God hoped and blessed. On the other hand, customers do respond emotionally to a variety of physical environments inclusive design and ambient factors such as air, lighting, music, scent, layout, color, etc. Therefore, I concluded, and as many authors stipulated in their analysis, that ambient factors as well as design factors are indeed positively related to customer positive emotion and satisfaction.

In my opinion when video tapes replaced movie theatres attendance, when mobile telephones replaced the traditional home telephone apparatus, the Internet and website connections replacing the punched cards of the early computer era and the traditional attendance

of libraries or reference to printed encyclopedias, all these new technologies had a slow and gradual acceptance by the public as individuals looked to such factors as what benefits are obtained, is privacy affected, how about cost and availability, what about disturbances in communication lined and recharging of batteries, is the information concise for lack of spacing? Hence, it all goes back to the individual or student for acceptance of E-learning or its rejection, fully or partially. Its marketing is also difficult because E-learning is on a continuous change with the continuous and never-ending technological changes of mankind. A student has to keep up with the pace of E-learning as what he studies or research today may become abstract tomorrow. Besides, not everyone has an access to Internet usage due to many factors mentioned in my above research paper (Environment, Traditions, Language Barriers, Educational Backgrounds, Governmental Assistance, and so forth).

Technology is constantly changing in favor of mankind why don't we work on various decisions of the website suitable to each culture, religion, and nationality of the user and authentic background and history? It is not important what one wants us to see on the website that is important but rather what I need to see and benefit from the website. Here lies one of the factors of physical evidences' quality on E-Learning efficiency.

## 5.2 Recommendations

The information technology (**IT**) will always be an essential recipe ingredient for E-learning techniques and various opinions of many authors and researchers are just points of view that show strengths and weaknesses to be discussed and tackled by the reader or the student of the intellectual. This is primarily because its introduction is more than solely a teaching issue as it can affect the design of the unit and program, as well as having professional and organizational development implications.

The primary correlation of the impact of physical evidences' quality on E-Learning efficiency (The subject of my thesis) had to be deciphered from the vast and sound studies of these gigantic researchers. When reviewing the work of *Venkatraman & Nelson*, I strongly back up their finding that the customers are the ones who interact with the environment and by so doing create their own meaning and not the service firm who makes the ultimate decisions about how the physical environment should be shaped and experienced. In essence, all studies are made by distinct authors and research students to note what the customer wants to satisfy his or her needs.

The human factor remains the most important one (i.e. teachers, lectures, employers, librarians, authors, etc...), for who created technological progress except students who turned out to be leaders in their professions and were inspired by predecessors to reach the present E-learning scheme. The traditional lecture is always present in E-learning, as it is one behind the scenes in preparation than in face-to-face confrontation and presentation for students and learners alike. E-learning is like a newborn baby that you have to rise well to the age of being independent before you know what you harvested from what you planted.



One cannot satisfy everyone at all times and at all conditions and for all cultures, and one cannot stick to same information as the world is changing every minute and updates are continuous and never have an ending path, and one cannot accept a theory of one author against another as each has a point of view based on relevant information against a specific study and packed up by personal analysis that may be positive in one situation but negative in another.

It is interesting to know the sequence of time for different authors' notifications of topics discussed and figures related to, as well as researched analysis of each. The time factor, the market growth at that time, the technological advances from year to year, the change of cultures and traditions and environments of countries concerned, and others made each author assert his research on the time he presented his arguments and points of view. I believe it is hence a chain reaction of continuous and never-ending researches where the situation of one author is complimentary to another.

Based on the results, the researcher presents some of recommendations:

The Private Schools should take care of their Physical Evidence by developing both Ambient Conditions and the software characteristics they use in their educational process to make more effect on E-Learning Efficiency:

5. Private Schools in Amman have to integrate the Ambient Conditions and the software characteristics they use in order to improve the E-Learning Efficiency.
6. Private Schools in Amman have to make sure that the atmosphere of the classroom (*light, cleanliness, odor, and temperature*) is suitable according to the educational environment because of the important role it plays in satisfying both, teachers and students.
7. Private Schools in Amman have to own a good Information Technology Infrastructure consists of Computers, Internet, Projectors... etc. to improve the E-Learning Efficiency.

**8.** Private Schools in Amman have to pay attention toward the characteristics of the educational software they are using. They have to make sure that:

- The software owns a friendly User Interface Design.
- It is easy to use the software and search for the information.
- The feedback of the advantages and disadvantages of the software, answering the questions of the users and getting in contact with the supporting staff are of the high priorities of the software's success.

## References

- Abels, E.G., White M.D. and Hahn, K. (1999), “A user-based design process for Websites”, OCLC Systems and Services, Vol. 15 No. 1, pp. 35-44.
- Baker, J. (1986), “The role of the environment in marketing services: the consumer perspective”, in Czepiel, J.A., Congran, C.A. and Shanahan, J. (Eds), The Fifth Annual Services Marketing Conference, American Marketing Association, Boston, MA.
- Balenskat, A. (2004), “UK Northern Ireland – Empowering Schools Strategy, Observatory for New Technologies and Education”.
- Bitner, Mary Jo (1992) “Servicescapes: The Impact of Physical Surroundings on Customers and Employees” *Journal of Marketing*; Apr 1992; 56, 2; ABI/INFORM Global pg. 57.
- Burns, D.J., & Neisner, I. (2006). “Customer satisfaction in a retail setting: The contribution of emotion”. *International Journal of Retail & Distribution Management*, 34(1), 49-66.
- Chen, N., Lin, K. and Kinshuk, P.Y. (2008), “Analysing users’ satisfaction with e-learning using a negative critical incidents approach”, *Innovations in Education and Teaching International*, Vol. 45 No. 2, pp. 115-26.
- Cheul Rhee, Junghoon Moon, Youngchan Choe, (2006), “Web interface consistency in e-learning”, *Online Information Review*, Vol. 30 Iss: 1 pp. 53 – 69.
- Cohen, J., Cohen, P., West, S.G. and Aiken, L.S. (2003), *Applied Multiple Regression/Correlation Analysis for Behavioural Sciences*, 3rd ed., Erlbaum, Mahwah, NJ.
- Collier, J.E. and Bienstock, C.C. (2006), “Measuring service quality in e-retailing”, *Journal of Service Research*, Vol. 8 No. 3, pp. 260-75.
- Cristobal, E., Flavian, C. and Guinaliu, M. (2007), “Perceived e-service quality (PeSQ); measurement validation and effects on consumer satisfaction and Website loyalty”, *Managing Service Quality*, Vol. 17 No. 3, pp. 317-40.
- Dabholkar, P.A. (2000), “Technology in service delivery: implications for self-service and service support”, in Swartz, T.A. and Iacobucci, D. (Eds), *Handbook of Services Marketing*, Sage, New York, NY, pp. 103-10.

- DENI (2002), “*Education Technology Strategy Management Group, Education Technology Strategy Review Report*”, 23 September, Department of Education for Northern Ireland, Bangor.
- Dina Ribbink, Allard C.R. van Riel, Veronica Liljander, Sandra Streukens, (2004), “*Comfort your online customer: quality, trust and loyalty on the internet*”, *Managing Service Quality*, Vol. 14 Iss: 6 pp. 446 – 456.
- Edvardsson, B., Enquist, B. and Johnston, R. (2010), “*Design dimensions of experience rooms for service test drives: case studies in several service contexts*”, *Managing Service Quality*, Vol. 20 No. 4, pp. 312-27.
- Falconer, L. (2006), “*Organizational learning, tacit information and e-learning: a review*”, *The Learning Organization*, Vol. 13 No. 2, pp. 140-51.
- Govindasamy, T. (2002), “*Successful implementation of e-learning pedagogical considerations*”, *Internet and Higher Education*, Vol. 4 No. 3, pp. 287-99.
- Grayson, R.A.S. and McNeil, L.S. (2009), “*Using atmospheric elements in service retailing: understanding the bar environment*”, *Journal of Services Marketing*, Vol. 23 No. 7, pp. 517-27.
- Harold W. Webb, Linda A. Webb, (2004), “*SiteQual: an integrated measure of Website quality*”, *Journal of Enterprise Information Management*, Vol. 17 Iss: 6 pp. 430 – 440.
- Isao MIYAJI (2009), “*Comparison between Blended Classes Which Incorporate E-learning Inside an Outside the Classroom*”, Faculty of Informatics, Okayama University of Science, Japan.
- Jessica Santos, (2003), “*E-service quality: a model of virtual service quality dimensions*”, *Managing Service Quality*, Vol. 13 Iss: 3 pp. 233 - 246
- Jonathan D. Owens, Liz Price, (2010), “*Is e-learning replacing the traditional lecture?*”, *Education + Training*, Vol. 52 Iss: 2 pp. 128 – 139.
- Julier, G. (2005), “*Urban designsapes and the production of aesthetic consent*”, *Urban Studies*, Vol. 42 Nos 5/6, pp. 869-97.
- Khaled Atallah Al-Tarawneh (2012) “*Measuring E-Service Quality from the Customers' Perspective: An Empirical Study on Banking Services*”, *International Research Journal of Finance and Economics* ISSN 1450-2887, Issue 91

- Kirca, A.H., Jayachandran, S. and Bearden, W.O. (2005), "*Market orientation: a meta-analytic review and assessment of its antecedents and impact on performance*", Journal of Marketing, Vol. 69 No. 2, pp. 24-41.
- Kirsh, D. (2002), "*E-learning, metacognition and visual design*", paper presented at the International Conference on Advances in Infrastructure for e-Business, e-Education, e-Science, and e-Medicine on the internet, L'Aquila, Italy, 29 July-4 August.
- Kotler, P. (1973), "*Atmospherics as a marketing tool*", Journal of Retailing, Vol. 49 No. 4, pp. 48-64.
- Kotler, Philip and Keller, Kevin (2012) "*Marketing Management 14/E*", Prentice Hall, pp 816.
- Liu, Y., & Jang, S. (2009). "*Perceptions of Chinese restaurants in the U.S.: What affects customer satisfaction and behavioral intentions?*" International Journal of Hospitality Management, 28(3), 338-348.
- Lovelock, Christopher and Wirtz, Jochen (2011), "*Services Marketing: People, Technology, Strategy*", Upper Saddle River, New Jersey: Prentice Hall.
- Marc Prensky (2001), "*The Digital Game-Based Learning Revolution*", McGraw Hill.
- Marinucci, D. (2002), "*Cleanliness: a key part of service*", Tire Business, Vol. 19 No. 20, p.7
- Matthyssens, P. and Vandenbempt, K. (2008), "*Moving from basic offerings to value-added solutions: strategies, barriers and alignment*", Industrial Marketing Management, Vol. 37, pp. 316-28.
- Mattila, A.S. and Wirtz, J. (2001), "*Congruency of scent and music as a driver of in-store evaluations and behavior*", Journal of Retailing, Vol. 77 No. 2, pp. 273-89.
- Miyaji, I. & Yoshida, K. (2005). "*The practice and learning effect of education by blending of lecture and e-learning*", Transactions of Japanese Society for Information and Systems in Education, 22(4), 230-239.
- Nag, R., Hambrick, D.C. and Chen, M.J. (2007), "*What is strategic management really? Inductive derivation of a consensus definition of the field*", Strategic Management Journal, Vol. 28, pp. 935-55.
- Owens, J.D. and Floyd, D. (2007), "*E-learning as a tool for knowledge transfer through traditional and independent study at two UK Higher Educational Institutes: a case study*", E-Learning Journal, Vol. 4 No. 2.

- Parish, J., Berry, L. and Lam, S. (2008), "*The effect of the servicescape on service workers*", Journal of Service Research, Vol. 10 No. 3, pp. 220-38.
- Pegels, C.C., Song, Y.I. and Yang, B. (2000), "*Management heterogeneity, competitive interaction groups, and firm performance*", Strategic Management Journal, Vol. 21, pp. 911-23.
- Pehrsson, A. (2008), "*Customer access and competitive certainty: performance effects in Swedish foreign subsidiaries*", Strategic Change, Vol. 17 Nos 5/6, pp. 179-92.
- Peteraf, M. and Reed, R. (2007), "*Managerial discretion and internal alignment under regulatory constraints and change*", Strategic Management Journal, Vol. 28 No. 11, pp. 1089-112.
- Rust, R.T. and Kannan, P.K. (2002), "*The era of e-service*", in Kannan, P.K. (Ed.), e-Service. New Directions in Theory and Practice, M.E. Sharpe, New York, NY.
- Scott W. Ambler (2007), "*User Interface Design Tips, Techniques, and Principles*", The world of software development, Ambysoft.
- Soberman, D. and Gatignon, H. (2005), "*Research issues at the boundary of competitive dynamics and market evolution*", Marketing Science, Vol. 24 No. 1, pp. 165-74.
- Sorensen, H.E. (2009), "*Why competitors matter for market orientation*", European Journal of Marketing, Vol. 43 Nos 5/6, pp. 735-61.
- Srinivasan, S.S., Anderson, R.E. and Ponnayolu, K. (2002), "*Customer loyalty in e-commerce: an exploration of its antecedents and consequences*", Journal of Retailing, Vol. 78 No. 1, pp. 41-51.
- Szmanski, D.M. and Hise, R.T. (2000), "*E-satisfaction: an initial examination*", Journal of Retailing, Vol.76 No. 3, pp. 309-22.
- Tan, A. (2003), "*What makes a good e-learner?*", available at: [www.purpletrain.com/news/20031217\\_01.htm](http://www.purpletrain.com/news/20031217_01.htm) (accessed 21 June 2009).
- Van Slyke, C., Be' langer, F. and Sridhar, V. (2005), "*A comparison of American and Indian consumers' perceptions of electronic commerce*", Information Resources Management Journal, Vol. 18 No. 2, pp. 24-40.
- Venkatraman, M. and Nelson, T. (2008), "*From servicescape to consumptionscape: a photoelicitation study of Starbucks in the New China*", Journal of International Business Studies, Vol. 39, pp. 1010-26.

- Williams, R. and Dargel, M. (2004), “*From servicescape to ‘cyberscape’*”, *Marketing Intelligence & Planning*, Vol. 22 Nos 2/3, pp. 310-20.
- Wolfenbarger, M. and Gilly, M.C. (2003), “*eTailQ: dimensionalizing, measuring and predicting Etail quality’*”, *Journal of Retailing*, Vol. 79 No. 3, pp. 183-98.
- Xue, M. and Harker, P.T. (2002), “*Customer efficiency: concept and its impact on e-business management’*”, *Journal of Service Research*, Vol. 4 No. 4, pp. 253-67.
- Zeithaml, V.A., Bitner, M.J. and Gremler, D.D. (2009), “*Services Marketing: Integrating Customer Focus across the Firm’*”, McGraw-Hill/Irwin, Boston, MA.

## Appendices

### Appendix (1)

#### Names of Arbitrators

<i>No</i>	<i>Name</i>	<i>Work Place</i>
<b>1</b>	Dr. Laith AL-Rubaiee	Middle East University
<b>2</b>	Dr. Faisal Abu AlRub	Petra University
<b>3</b>	Dr. Mohammad Noor Burhan	Petra University
<b>4</b>	Dr. Yousef Akel	Petra University
<b>5</b>	Dr. Mohammad Al-Tamimi	Al-Zaytoonah University



**Appendix (2)**  
**Questionnaire of the Study**

*Mr/Mrs ..... Greeting*

The title of the researcher's thesis is: *The Impact of Physical Evidence Quality on E-Learning Efficiency* “an applied study on Private Schools in Amman”.

This Questionnaire is designed to collect information about your organization. I would be very grateful if you answer ALL questions as completely and accurately as possible.

Thanks for answering all the items in the Questionnaire

*Nawal Hashem Al-Husseini*

**(1) Age:**

30 Years or Less	<input type="checkbox"/>	31– 40 Years	<input type="checkbox"/>
41– 50 Years	<input type="checkbox"/>	51 Years or More	<input type="checkbox"/>

**(2) Gender:**

Male	<input type="checkbox"/>	Female	<input type="checkbox"/>
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**(3) Educational Level:**

BSc	<input type="checkbox"/>	Master or High	<input type="checkbox"/>
Diploma	<input type="checkbox"/>	PhD	<input type="checkbox"/>

**(4) Experience:**

5 Years or Less	<input type="checkbox"/>	6 – 10 Years	<input type="checkbox"/>
11 – 15 Years	<input type="checkbox"/>	16 Years or More	<input type="checkbox"/>

No	Item	بدائل الاجابة Answer Alternatives					الفقرة	الرقم
		لا اوافق إطلاقاً Strongly Disagree	لا اوافق Disagree	محايد Neutral	أوافق Agree	أوافق بشدة Strongly Agree		
<b>Ambient Conditions</b>								
1	The organization is always careful about the classroom smell.						1	تحرص المنظمة دوماً على رائحة الغرفة الصفية.
2	The organization has clean walkways, exits and classrooms.						2	تمتلك المنظمة ممرات ومخارج وفصول دراسية نظيفة.
3	Proper lighting is provided in classrooms.						3	يتم توفير الإضاءة المناسبة في الصفوف.
4	The classroom temperature is appropriate according to the weather.						4	تتناسب درجة حرارة الغرفة الصفية بناءً لحالة الطقس في الخارج.
5	Signs, symbols and artifacts are used for communication.						5	يتم استخدام الإشارات والرموز والصور التوضيحية في الإتصال مع الطالب.
6	The organization owns an IT infrastructure represented in (Computers, Projectors and Internet).						6	تمتلك المنظمة بنية تحتية لتكنولوجيا المعلومات والتي تتمثل ب (أجهزة الحاسوب، شاشات العرض والانترنت).
<b>Ease of Use</b>								
7	It is easy to get access to the educational software.						7	من السهل الدخول والتعامل مع البرنامج التعليمي.
8	The software components and screens are user friendly						8	شاشات البرنامج وأجزائه تعتبر سهلة الإستخدام.
9	The search/Find mechanism is offered by the software to speed up the operation of information retrieval.						9	الية البحث متوفرة في البرنامج بهدف تسريع عملية استرجاع المعلومات.
10	Navigation through the pages of the software pleasurable.						10	تعتبر عملية التصفح خلال صفحات البرنامج ممتعة.
<b>Interface Design</b>								
11	The information on the software pages is attractively displayed.						11	يتم عرض المعلومات بشكل جذاب على صفحات البرنامج.
12	The software pages layout and colors are appealing.						12	يعتبر تصميم صفحات البرنامج مناسب ويمتلك ألوان جذابة.
13	The software provides information in an appropriate format (font style, font size, font type, ... etc)						13	يقدم البرنامج المعلومات بشكل مناسب من حيث نمط الخط، حجم الخط، نوع الخط، ... الخ)
14	By hovering the mouse over the icons a tooltip will pop up explaining the function.						14	عند تحريك الماوس فوق الأيقونات الغير معروفة سوف تظهر رسالة تقوم بشرح وظيفة كل منها.
15	There is a harmony of colors between the background of the screens and the used line color of the pages in the educational program.						15	هنالك انسجام بين ألوان خلفية الشاشات ولون الخط المستخدم في صفحات البرنامج التعليمي.
16	Warning/exclamation messages appear during the application of the curriculum to introduce the student to certain things.						16	تظهر رسائل تحذيرية أو تعجبية أثناء تطبيق المنهج الدراسي لتعريف الطالب بأمر معينة.

<b>Responsiveness</b>						
17	It is easy to get in contact with software supporting staff.				من السهل الإتصال مع موظفي الدعم للبرنامج المستخدم.	17
18	It is easy to get the feedback from the users about the software.				من السهل الحصول على التغذية الراجعة من المستخدمين حول البرنامج المستخدم.	18
19	The software quickly replies to the student requests -questions or inquiries				يتميز البرنامج بسرعة الرد على طلبات الطلاب (أسئلة أم استفسارات).	19
20	The software keeps the students up-to-date about the latest news.				يعمل البرنامج على تزويد الطلاب بأخر المستجدات.	20
<b>E-Learning Efficiency (Extend and Refine Knowledge)</b>						
21	The purpose of the E-learning is to get new or improve existing knowledge.				الغاية من التعليم الإلكتروني هو الحصول على معرفة جديدة أو تحسين المعرفة القائمة.	21
22	The purpose of the E-learning is to improve the existing skill.				الغاية من التعليم الإلكتروني هو تحسين مستوى المهارة عند الطالب.	22
23	Efficient instructions within the software lead to a better learning.				كفاءة التعليمات المطروحة ضمن البرنامج تؤدي إلى تعليم أفضل.	23
24	Efficient instructions within the software lead to a faster learning.				كفاءة التعليمات المطروحة ضمن البرنامج تؤدي إلى تعليم أسرع.	24
25	E-Learning Provides greater access to educational opportunities to students.				يزيد التعليم الإلكتروني من قدرة الطالب في الحصول على فرص تعليمية أكثر.	25
<b>E-Learning Efficiency (Use Knowledge Meaningfully)</b>						
26	E-Learning increases the student's efficiency in applying the skills he has learnt.				التعليم الإلكتروني يزيد من كفاءة الطالب في تطبيق المهارات التي يكتسبها.	26
27	E-Learning will bring new opportunities for organizing teaching and learning				التعليم الإلكتروني يتيح فرصا جديدة لتنظيم عملية التعليم والتعلم.	27
28	E-Learning Provide easy access and encourage student to get the information.				يوفر التعليم الإلكتروني سهولة وصول الطالب إلى المعلومات ويشجعهم على الحصول عليها.	28
<b>E-Learning Efficiency (Attitudes and Perceptions)</b>						
29	Use of IT, especially computers and Internet, makes it easy to act with E-Learning.				استخدام تكنولوجيا المعلومات خاصة أجهزة الحاسوب والإنترنت، يسهل من التعامل مع التعليم الإلكتروني.	29
30	The E-learning save time and effort.				التعليم الإلكتروني يوفر الوقت والجهد.	30
31	E-Learning solve educational problems.				التعليم الإلكتروني يحل المشاكل التربوية.	31