

School of Sustainable Development and Society

Master Thesis (EIK034): IT management

**Barriers to the implementation of E-learning system with focus on
organizational culture**

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Abstract

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Title: *Barriers to the implementation of E-learning system with focus on organizational culture*

Introduction:

Nowadays, Information Technology has become a necessity for businesses not only to gain competitive advantage but also to survive. Strategic use of new educational technologies can enhance learning and teaching process. In order to stay viable in this intense competitive environment, providers of education and trainings have developed efficient and effective learning environment, called E-learning. However with the success there also exist barriers containing the cultural aspects of the organizations throughout the implementation process.

Purpose: The purpose of this research is to describe and analyze critical factors which may affect the implementation of E-learning system with a special focus on organizational culture.

Research Question:

What are the critical barriers of implementing E-learning system and what is the role of organizational culture in successful implementation of E-learning system?

Research design:

This research is based on a qualitative approach and based on secondary data collection method. The required literature has been obtained by searching Mälardalen University's library. Furthermore, authors have used online library (ebrary) as well as other libraries' databases such as Elin, Emerald, Eric and EBSCO. Reference books from university library were also used in the course of the research. The data has been extracted from articles which are title base keywords search criteria were used for searching articles. Our research is exploratory and based on the Interactive model which consists of three activities which are data reduction, data display, and conclusion. Research analysis emphasizes more on comparing various authors' view to analyze and describe the critical barriers and role of organizational culture to successfully employ E-learning system in organizations.

Target audience: This research provides a general guidance to the readers and organizations interested in E-learning initiative and for those who have already implemented E-learning.

Conclusion: This research elicited and examined a number of various points of views about the barriers of implementing E-learning system in organizations. Within organization, bridging education is challenging if the organizational culture is unwilling to accept an E-learning initiative. Finally it was suggested that by behavioral change and by motivating the employees can new vitality and momentum can be brought for implementation success. Organization should underpin their implementation strategy of E-learning system proactively to reap the maximum benefits.

Keywords: E-learning system, Critical barriers for Implementing, Organizational culture

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1.0 General Introduction/Background

This chapter deals with general introduction and the background of the research area. It also contains the problem statement, objectives/purpose, research question, and the structure of the thesis.

In today's world of globalization, knowledge and learning is considered a vital element for acquiring competitive advantage (Longworth and Davies, 1996; Lee, 2006). For gaining competitive advantage firms and institutions are becoming more knowledge intensive, therefore they concentrate more on managing and sharing knowledge to gain significant advantage (Hertog and Sluijs, 1995; Wilds et al., 2002).

On the other hand, in today's IT based environment, it is necessary for many firms and institutions to keep up with the new technologies in order to maintain their position and acquire a strong hold in the market (Günes, 2008). With the use of internet technologies, firms and institutions have outstanding opportunities to deliver education and different training techniques through strategic use of Information Technology (Lee, 2006). The use of Internet technologies combined with suitable learning strategies assisted to provide flexible, open and dynamic learning environment (Khan, 2005, p.3). This advent in Internet technologies forced creative thinkers to make changes and new developments to traditional education system. Consequently, E-learning and virtual learning educational approach emerged as a new and modern educational approach (Günes, 2008). And today, many corporations, government agencies and academic institutions worldwide have increased the use of Internet and educational technologies to deliver instructions and provide training through E-learning system (Khan, 2005, p. 418).

In E-learning system, contents are delivered through electronic means. So viewing educational videos, editing photos/videos, embedding sounds for presentations and using of interactive whiteboard are all considered as implementations of E-learning system (Gulatee and Combes, 2007). These opportunities have been recognized by emerging technologies to create a quality and new learning environment for distance learners (Werry, 2002; Gulatee and Combes, 2007). Hence, during the late 1990s and early 2000s many online universities were established and more universities were offering online courses, but mixed results of E-learning systems were encountered (Gulatee and Combes, 2007). Research has pointed out many problems or barriers that lead the implementation process of E-learning system to

failure. Some of these critical barriers mentioned in the literature are Technological infrastructure, Course, Economic/Finance, Computer Literacy, Course Contents, Staff training, Management Support, Culture Resistance or organizational culture (Romiszowski, 2003; Childs et al., 2005; Muilenburg and Berge, 2005).

Organizational culture can be defined as the “set of shared attitudes, goals, values and practices that characterizes a company or corporation” McIntosh (2006), shared practices and norms are based in the work spaces which are practiced within the boundaries of an organization. Cultural resistance or check resistance from potential users negatively affects the implementation process. Unwillingness of the employees and avoiding of the use of required procedures and use can create major problems for the managers and can ultimately leads the system to failure (Morakul and Wu, 2001 p. 22). It is necessary to create a change in the employee’s attitude to reap full benefits of the new system (Yates, 1997, p. 164; Morakul and Wu, 2001). Even Cultural differences among peers, learners and instructors could also create many problems in the implementation of E-learning system. Therefore, if cultural issues are overlooked during implementation process they could arise as a big barrier in the success of E-learning implementation (Gujar and Sonone, 2004; AL-Hunaiyyan et al., 2008).

1.1 Problem statement

Many articles and books mention that organizations are moving towards E- learning system to take competitive and strategic advantage. Meanwhile, much of the literature has cited about various influential barriers that lead to the failure of E-learning system implementation process in organizations. Literature has mentioned a wide range of influential barriers but quite a number of author’s claim that organizational culture could be a big barrier if not considered in E-learning implementation process. However, there is no organized work to characterize collective group of most influential issues, which could be seen as barriers (Masoumi, 2006; Wong; 2007). (Morakul and Wu, 2001) states that the resistance from employees and avoiding of the use of required procedures and rules could lead the system to failure even if it has been developed with utmost perfection.

To successfully and efficiently implement E-learning a strategic and proactive approach is essential by taking under considerable critical barriers of implementation. The basis of our thesis is to find out and describe and analyze significant barriers for the implementation of E-learning system, as well as the role of organizational culture towards E-learning implementation process.

1.2 Research question

What are the critical barriers of implementing E-learning system and what is the role of organizational culture in successful implementation of E-learning system?

1.3 Objectives and Purpose of the Research

The purpose of this research is to describe and analyze the critical factors which may affect the implementation of E-learning system. Investigating the barriers of E-learning system's implementation would help to lower down the barriers in future implementation. Moreover, examining the cultural influence of an organization towards E-learning system's implementation process and identify a complete outline for organizations to deal with the barriers for E-learning system implementation process and hence to make the E-learning system work efficiently and successfully.

1.4 Target audience

This study is helpful for organizations that are interesting in E-learning initiative. They can find out the tips and methods for implementation of E-learning in their organizations. This study could be interesting for those organizations that have already implemented E-learning system. Furthermore, this research provides a general guidance for those who are interested in Information System particularly E-learning system.

1.5 Thesis design

The structure of the thesis is principally focused on six chapters mentioned below;

Chapter 1: Introduction/Background

The Introduction gives brief overview of the research topic, including the purpose and objectives, problems and research question.

Chapter 2: Literature review

This chapter discusses relevant theories to give the reader an understanding of the barriers which come across E-learning system's implementation processes cited by different authors.

Chapter 3: Research Design/Methods

This chapter deals with the choice of the topic, data collection, validity and reliability, method critic and research process which represents how the data is collected and analyzed.

Chapter 4: Analysis

This chapter provides an overview of the frequency of the various critical barriers for successful E-learning system implementation with focus on organizational culture towards implementation process mentioned in the literature.

Chapter 5: Conclusions

This chapter concludes the findings and the analysis based on the objective and purpose of the study in order to give answer to the research question.

Chapter 6: Future Research

This chapter deals with the suggestion for future research work related to the study topic which could be useful for various organizations.

2.0 Literature review

This chapter discusses the theoretical framework of E-learning implementation process and different critical barriers and sub-barriers cited by different authors to E-learning implementation.

2.1 E-learning

E-learning can be simply defined as learning and communication exercises across computers and networks or for that matter any other electronic sources. (Roffe, 2002; Schank, 2002; Sambrook, 2003; Wong, 2007). Fry (2000) and Wild et al. (2002) define E-learning as “delivery of training and education via networked interactivity and distribution technologies.”

Therefore, E-learning has been described in various ways as learning using a number of different technologies and methods for delivery e.g. Computer Based Training (CBT), Internet-based training (IBT), Web-based instruction (WBI), advanced distributed learning (ADL), distributed learning (DL), distance learning, online learning (OL), mobile learning (or m-learning) or remote learning and learning management systems (LMS) (Khan, 2005, p. 3). Managing of learning environment like, registration of learners, scheduling learning resources, controlling and guidance of learning processes and analyzing learners' performances are all accomplished in Learning Management System (LMS) (Brown, 2006; Gulatee and Combes, 2007).

In 1970s and 1980s distance learning became popular and was done via mail until the rise of Internet usage. In late 1990s the digital learning environment was enhanced and World Wide Web started as a distributed learning mechanism to support on campus student and distance learners. With the use of this delivery technology learners can get a range of resources like discussion forums, multimedia, chat, video conferencing and electronic black boards (Kazmer and Haythornthwaite, 2005, p. 7; Gulatee and Combes, 2007).

While, In an E-learning system, students are able to interact anytime from anywhere with different instructional material (text, sound, pictures, video and so on) through Internet. Furthermore, learners can communicate with teachers and classmates both individually and as

a group discussion with the use of message boards, instant message exchanges and video conferencing. (Lee, 2006; Al-Ammari and Hamad, 2008; Andersson, 2008).

According to Khan (2005, p. 3), E-learning system is used for an open, flexible, and diverse E-learning environment, moreover “E-learning system can be analyzed as an inventive approach for delivering, learner-centered, interactive, and facilitated learning environment to anyplace, anyone, anytime by utilizing the features and resources of different digital technologies along with other types of learning materials suited for an open, distributed, and flexible learning environment” (Khan 2005, p. 3)

2.2 Implementation of E-learning System

In implementation of E-learning one of the following approach usually takes place by the organizations, to strengthen the traditional face-to-face courses with support of new communication technology, enhancement of experience with in traditional courses by integration of online activities (Uhomoi bhi, 2006). E-learning system implementation is dependent on the level of availability of some influential factors like budgeting, infrastructure planning, human resource development and learners skills and attitude towards the technology (Khan, 2005, p. 24; Uhomoi bhi, 2006).

In E-learning system implementation, it is necessary for institutes to use adoption, diffusion and implementation strategies. A systematic process of planning, designing, development and evaluation helps to lower down the barriers to successful implementation and creates such an online environment where learners can actively learn and obtain support (Khan 2005, p. 28; Uhomoi bhi, 2006). An E-learning system can only be successful if it is significant to all stakeholders e.g. support services staff, instructors, learners and the institutions itself.

In order for learners to become quickly accustomed to E-learning, it must be made sure that it is easily accessible, efficient, contains a well designed course, affordable, and has a facilitated learning environment. Instructors must feel a sense of accomplishment when learners meet the goals and objectives of the course in a successful way. Technical support staff feels happy when learners receive reliable services without interruptions. One of the most important factors for institutions is the profit they earn as well as the satisfaction of the learner and a low rate of dropouts (Khan 2005, p. 13).

A strong foundation is required in order to have an effective implementation of E-learning while, aligning between all stockholders and strong communication are two important factors for a strong foundation of successful implementation of E-learning (Brodsky, 2006). It is

necessary to make sure that the communication is in order and involves all key stakeholders at the decision making stage or any other early process (Brodsky, 2006). There should be consistent scheduled meetings with all involved individuals to discuss the newly arising issues in the project to come up with a solution. (Brodsky, 2006). Most of the pitfalls of E-learning are tied to technological issues so it is important to involve IT experts throughout the project to mitigate the problems in implementation process (Brodsky, 2006). Creation of helpdesk for reporting of IT related issues is more important. Selecting the vendors is a crucial step in implementation process; during vendor selection it is necessary to make sure that the vendors have an outstanding and proven record (Brodsky, 2006). Strong communication and feedback from vendors is also very important for successful implementation (Brodsky, 2006).

Be Prepared: The Action Plan

Central to an effective e-learning implementation is to develop a detailed action plan that includes three main areas: elements to consider before, during and after the e-learning training.

To help guide the development of your action plan, consider these questions provided by e-learning instructional design and project planning expert Jane Johnson, Ph.D., president of By Design, Inc., an Arvada, Colorado company. If you can answer "yes" to each of the questions, you are well on your way to an effective e-learning implementation.

Before training...

- Has the training program been selected to address the most critical needs of the company?
- Does the training focus on performance objectives that clearly develop the actual tasks that employees must accomplish in the workplace?
- Are employees clear about the goals of the training and their own development objectives?
- Do learners have the computer skills they need to successfully take an e-learning program?
- Have pre- and post-testing or other measurement systems been put in place to enable evaluation of the training program upon completion?
- Is there an administrative system to assist with tasks such as registration and tracking?
- Have learners' special needs, such as reading problems and physical or mental handicaps, been addressed through the choice of media or supplemental assistance?
- What are the incentives and rewards for taking the e-learning?

During the training...

- Are support systems available if learners have questions or something is not working?
- Are supervisors trained to be coaches?
- Is there a place learners can go to take the e-learning course that is free from distractions and interruptions?
- Are supervisors willing to give learners time to take the e-learning during the workday?
- Does the company culture support continuous learning?
- Will internal marketing systems be used to promote the e-learning initiative?

After the training...

- Will the learning be evaluated on an individual level?
- Will the training's impact on the bottom-line be assessed?
- Is there a mechanism in place to reinforce the learning once the training is over?

Figure 1: The action plan

2.3 Organizational Culture

(Schein, 1988) defines a culture, assumptions that arise or have been developed which end up being the common core of the culture itself. These ideas and changes that have shaped cultures from time to time arise from problems. These problems that people or cultures sometimes face, solutions and answers are found or created which are to be a part of that culture and begin being taught to the new generation. This new generation then begins to

absorb and implement these new discoveries when faced with the problems for which they were invented.

Originations as well as top management try to develop a culture of innovation and creativity especially, when they come to the changing technologies and other changes. (Martins and Treblanche, 2003). Organizational culture includes the behavior of its inhabitants, their philosophy and values, and the rules which are created to be followed (Martins and Treblanche, 2003). An Organizational culture plays the role of the main root in the functioning of an organization to its full efficiency. Strong organizational cultures provide a track and ensure that all its members walk on the same path and right direction towards the same goals. (Robbins, 1996 ; Martins and F.Terblenche, 2003)

Without a strong organizational culture being valued highly a company or a business cannot run successfully because it won't share among its employees the same level of standard nor a vision. The business will not be able to keep up with the tides of technological changes that are necessary to keep up with the industries performance. It has been proven over time as we can use the examples of many large corporations that hierarchical structures and communication between management teams plays an important role within a company that cultural compatibility has forefront importance for organizations and emphasis that particular focus should be put on this issue (Cartwright and Cooper, 1992).

2.4 Role of organizational culture and implementation of E-learning system

“Implementation of E-learning involve change of paradigm to some degree, a change in how to transaction with information and knowledge in organization” (Khan 2005, p. 29). Kearsley and Marquardt (2001) emphasize that to turn into E-learning, organizations and institutions may need to change the way their organizations are structured or they need some changes in their organizational culture. (Schein, 1996) says, “organizations will not learn effectively until they recognize and confront the implications of their different cultures” According to (Schein, 1996) Organizational culture revolves around people and change and that is what E-learning is basically all about. Implementation of E-learning system conventionally focuses on technical and implementation related issues. However people remain the most significant factor of any E-learning technology undertaking. Whereas technical aspects can always be replaced or upgraded, changing individual's attitudes and perceptions requires most divine involvement. These are the issues of people in the form of participation, communication,

information and training as well as the involvement of all stakeholders when they are engaging in such type of learning initiatives Khan (2005).

It is necessary to provide opportunities to all these participants to know that what they are going to do and to move forward to successful implementation (McPherson and Nunes, 2006). Insufficient understanding about organizational structure, process and culture could lead the acceptance of E-learning to failure (Sutton, 2003). Initially, during designing and implementing of the E-learning solution, it is more important to be familiar with organizational culture, structure, corresponding and other potentially conflicting strategies (McPherson and Nunes, 2006). A strong collaboration is required in technologists, educationalists and subject matter experts during instructional design process. Educationalists and subject experts are involved in the concerns like curriculum design while technologists are involved in technical development which is an actual application. Organizational culture must support a strong communications between all these agents (McPherson and Nunes, 2006).

2.5 Learning in organizational context

Instructors, learners and learning contents are strongly related to each others in learning process and are considered as an interaction system among these groups. There is a need of coordination among all these groups to create an effective learning environment within an organization. An organizational culture, always exists in organizations plays a significant role in creating an effective learning environment. An environment plays an important role in effecting the thinking and behavior of organizational members (Ruohonen, n.d, p.233).

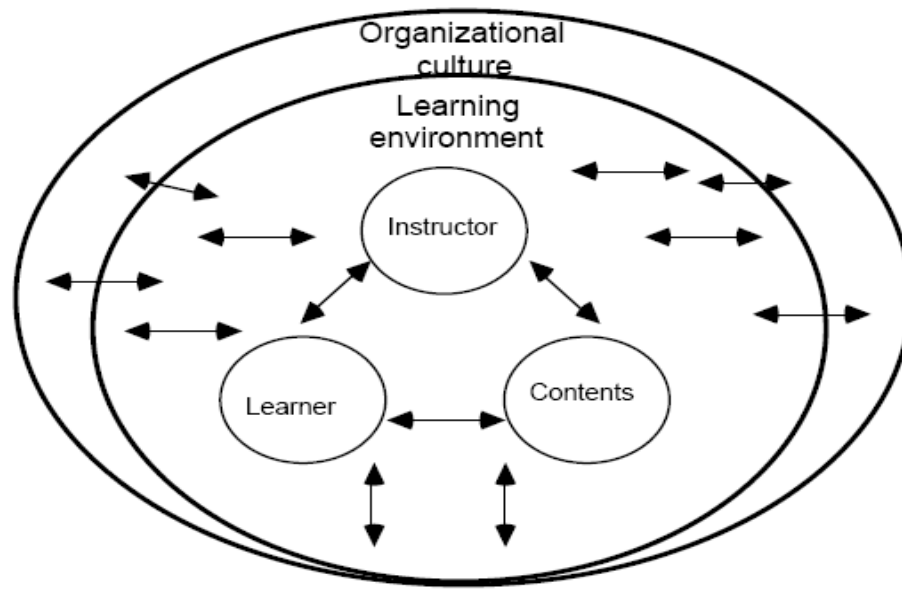


Figure 2: The Extended system of learning in the organizational context

Source: Ruohonen, n.d, p.233

Organizational learning and instructional processes within an open system, is based on four constituents e.g. instructors, learners, contents of learning and a learning environment. All these four components are interacting with each other in an environment and that is called an organizational culture. Information system should be exploited in the way to develop communication, enhance conversation in job learning, and provide network to the people thought access accordingly, Information system development is considered an effective tool for organizational change and learning. (Ruohonen, n.d, p.233-236)

2.6 An overview of the critical barriers in E-learning implementation

Worldwide, E-learning is arising as a new paradigm of advanced education with a growing rate of 36.5 percent in the market, but still failures exist (Sun et al., 2008). As many companies are moving very fast to the adoption of E-learning in order to reap its benefits but they are facing significant barriers in its implementation and adoption, which leads them to implementation failure (Mungania, 2003). Hence, to mitigate this failure there is a need to investigate key factors that encompass different dimensions of an open, flexible and advanced distributed learning environment for diverse learners (Khan 2005, p.3). Literature mentions a wide range of factors that can influence the successful implementation of E-learning e.g. some concern pedagogical issues, faculty issues and organizational issues while some concern

personal issues, cultural issues and some other issues (Packham et al., 2004). Wong (2007) categorizes E-learning limitations in three main areas in his approach; technological limitations, personal issues and other limitations. The lack of hardware, limited Internet coverage and low bandwidth are all considered as technological barriers in implementation of E-learning (Hiltz, 1997; Kathawala et al., 2003; Wong, 2007).

Kember et al., (2001) and Dearnley (2003) states that personal issues are mostly related to learners and teachers. Teachers should give a complete guidance to the learners about this new and non-traditional system to psychologically prepare new learners (Kember et al., 2001; Dearnley, 2003; Wong, 2007). For learners the use of new technologies could be a disadvantage or barrier in E-learning. So the lack of information, communication and technological skills might be barriers to E-learning because learners could get frustrated from this unconventional learning environment. (Carr, 1999; Hamid, 2002; Angelina, 2002a, p.12; Wong, 2007)

The freedom provided by E-learning system could be a disadvantage for the learners as internal motivation and self-discipline are required for learners at its maximum level to complete their studies or assignments in time (Kearsley, 2000; Rivera and Rice, 2002; Schott et al., 2003; Abouchdid and Eid, 2004; Wong, 2007). In E-learning environment students are usually supposed to communicate in a text based environment so learners' poor writing skills might be a disadvantage in E-learning. Therefore, the inability of communicating efficiently of learners could create misunderstandings (Smith & Rupp, 2004; Wong, 2007).

Other limitations are providing 24\7 access so this infinite work might be a disadvantage for learners and particularly for teachers. This unlimited work can over stress teachers, resulting in a low quality services from instructors, as can learner's can post the queries from any time which ultimately makes it a never ending process for both learner's and instructors. (Dringus, 2003). Poor course design can arise as a barrier to E-learning's implementation as it may frustrate the learners and teachers. (Smulders, 2003; Howell, Svensson, 2004; Ivergard and Hunt, 2005).

Cronje (2009) states that lack of financial support to learners, cooperation among peers and from teachers are students' barriers that can be a cause of dropout of the learners (Galusha, 1997; Cronje, 2009). Lacks of fund, institute's attitude towards the lecturers that some time seems less prominent among their peers are faculty barriers (Galusha, 1997; Cronje, 2009). Poor funding for three major cost areas are considered more crucial barriers e.g. Initial costs of the implementation process, maintenance and up gradation are concerned with organizational barriers (Cronje, 2009). Poor course design is one of reasons of inferiority of

distance learning. Conversion of teaching context in to electronic shape could not add any value to E-learning (Galusha, 1997; Cronje, 2009).

Boondao et al., (2008) states, “It is not possible, in the view of some scholars, to create a model of the good teacher without taking issues of culture and context into account”. The influence of culture cannot be ignored in successful implementation of E-learning. Considering global learning environment learners belonging to different culture e.g. east and west, learners from both cultures have particular approaches and styles of learning. Therefore, lack of consideration of cultural issues during course designing can be a significant barrier to successful implementation of E-learning (Boondao et al., 2008).

2.7 Discussing the different critical barriers

E-learning barriers are diverse and can be classified as personal, organizational, situational, instructional and technological (Mungania, 2003). Moreover Khan’s E-learning framework provides a detail of critical issues which may come across E-learning implementation process. Khan’s E-learning framework is composed of eight dimensions: institutional, management, pedagogical, technological, interface design, ethical, evaluation, and resource support.

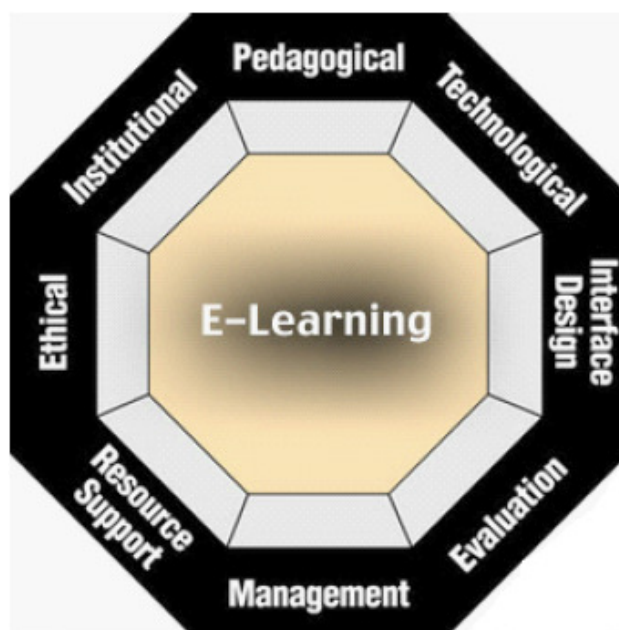


Figure 3: E-learning framework

Source: (Khan, 2005, p. 14)

Table 1: Eight dimensions of E-learning framework

Dimensions of E-Learning	Descriptions
<i>Institutional</i>	The institutional dimension is concerned with issues of administrative affairs, academic affairs, and student services related to e-learning.
<i>Management</i>	The management of e-learning refers to the maintenance of learning environment and distribution of information.
<i>Technological</i>	The technological dimension of e-learning examines issues of technology infrastructure in e-learning environments. This includes infrastructure planning, hardware, and software.
<i>Pedagogical</i>	The pedagogical dimension of e-learning refers to teaching and learning. This dimension addresses issues concerning content analysis, audience analysis, goal analysis, media analysis, design approach, organization, and learning strategies.
<i>Ethical</i>	The ethical considerations of e-learning relate to social and political influence, cultural diversity, bias, geographical diversity, learner diversity, digital divide, etiquette, and the legal issues.
<i>Interface design</i>	The interface design refers to the overall look and feel of e-learning programs. Interface design dimension encompasses page and site design, content design, navigation, accessibility, and usability testing.
<i>Resource support</i>	The resource support dimension of the e-learning examines the online support and resources required to foster meaningful learning.
<i>Evaluation</i>	The evaluation for e-learning includes both assessment of learners and evaluation of the instruction and learning environment.

Source: (Khan, 2005, p. 15)

2.7.1 Institutional Issues

Institutions need to build a complete plan for the successful implementation of E-learning system (Khan 2005, p. 23). E-learning implementation plan must be fully aligned with the institutions' ambitions and strategic plans (Galusha, 1997). E-learning implementation process is paradigm shift for the institution as a whole, which includes instructors, administrators, technical, learners and other support services staff (Romiszowski, 2004). Therefore, E-learning needs to be integrated to all departments of the institution and a strong commitment is required between institution and the Implementation team Childs et al (2005). It is necessary to highlight the embedding process and concern issues to support the institution in strategic planning, change management and process development (Childs et al., 2005).

(Khan 2005, p. 23) Khan has divided institutional issues into three categories administrative affairs, academic affairs and student services. Administrative affairs include, budgeting, course information catalog, financial aid, course schedule, tuition fees, registration, information technology services and instructional design. Academic affairs issues are policies, instructional quality, staff support and intellectual property rights and. While, student support

services provide support to create an effective E-learning environment. Some of the considerable intuitional factors are mentioned in the table No2.

Table 2: Institutional Issues

<i>Needs Assessment</i>	Institutions are supposed to perform a critical analysis before starting E-learning implementation. With assessment, institutions could examine their needs to plan for E-learning goals. (Khan 2005, p. 24, Childs et al., 2005)
<i>Readiness Assessment</i>	In the term of readiness assessment, institutions should evaluate their Financial Readiness, Infrastructure readiness and cultural readiness (Khan 2005, p. 25).
<i>Organizational change</i>	Intuitions must be prepared that how to deal with, when new technology dramatically change their organizational model. (Khan 2005, p. 26 and Childs et al., 2005).
<i>Budgeting and return on investment</i>	Institutions must ensure their financial check and balance before, during, and after implementation of E-learning. (Romiszowski, 2004 and Khan 2005, p. 28-29).
<i>Financial Aid</i>	Financial aids should be provided to support learners by using technological and human support services (Khan 2005, p.32).
<i>Policies</i>	Institutional E-learning policies must be communicated to all groups including instructors, learners and support staff (Khan 2005, p. 35).
<i>Instructional Quality</i>	Instructional quality helps in creating a meaningful learning environment (Khan 2005, p. 35; Muilenburg and Berge, 2005; Gulatee and Combes, 2007; Lum, 2006; Park and Choi, 2009).

<i>Faculty and Staff support</i>	Institutions are responsible to provide proper training to instructors, faculty members and supporting staff to create an effective E-learning environment (Khan 2005, p. 41).
<i>Intellectual property rights</i>	Institutions must inform the learners, as well as instructors about intellectual property rights (Khan 2005, p. 39).
<i>Learning Skills Development</i>	Well-designed user guide can help the learners, supporting staff and learners as well. (Khan 2005, p. 39; Wong 2007).

2.7.2 Management issues

Lack of management support is highest barrier to successful implementation of E-learning system (Magalhaes, 2008). Management issues refer to various phases of administration such as scheduling, designing, construction, assessment, delivery, and maintenance (Romiszowski 2003; Parkham et al., 2004). Three key areas products, people and process involved in E-learning implementation are all dependent on integrated team approach (Jung, 2003; Khan, 2005). Process management of E-learning encounters delivery, designing, evaluation, maintenance and designing stages (Khan 2005, p. 106). Products of an E-learning are the deliverables which includes project plan and content development (Khan 2005, p. 109). People are the individuals who are involved in the various stages of E-learning, role and responsibilities are assigned to perform different tasks such as content expert, instructional designer, project manager and graphic artist and so on (Khan 2005, p. 105). Critical management factors categorized by Khan (2005) are mentioned below Table No.3:

Table 3: Management Issues

<i>Project Manager's Skills</i>	For Planning, budgeting, supervising, scheduling, and team motivation Managerial skills are required (Khan 2005, p. 109).
<i>Managing content development process</i>	Managing Content development is more important process and has different stages such as Design Stage, Production Stage, Evaluation Stage and Managing Security measures

	(Khan 2005, p.114).
<i>Managing E-learning environment</i>	Managing E-learning environment means, to provide effective and efficient delivery of contents without any disruption for diverse learners in E-learning environment (Khan 2005, p. 114).
<i>Updating and Monitoring of E-learning Environment</i>	E-learning contents should be updated on regular basis to keep the learners interested (Park and Choi, 2009). Moreover management must also check if all links and resources are active (Khan 2005, p. 126).
<i>Security Measures</i>	Security measures include access control and information privacy (Khan 2005, p. 126).

2.7.3 Technological Issues

Technological limitations are among the major barriers for the success of E-learning system (Wong, 2007). Technological limitations of E-learning system are related to computer hardware, software and relevant resources (Wong, 2007). Connectivity problems, lack of training, navigation issues, limitations of 24/7 technical support, loss of data and incapability to save or transfer data are the most common technological limitations (Mungania, 2003). Usually small and medium enterprises fail to implement E-learning system due to lack of support in hardware and software (Sambrook, 2003; Wong, 2007). The technological issues can be divided into three parts infrastructure planning, hardware, and software (Kearsley, 2000; Rumble, 2000).

Table 4: Technological Issues

<i>Infrastructure Planning</i>	Success of E-learning system in organizations depends upon infrastructure planning. A well-documented strategy, focusing on infrastructure must be prepared for implementation process (McGraw, 2001; Romiszowski, 2004). As E-learning environment depends on digital infrastructure, therefore institutions should have consistent and well-organized network to support E-learning (khan 2005, p. 154). Moreover institutions should develop policies and guidelines to cater
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	various issues of hardware, software and networks (Romiszowski, 2004; Wong, 2007).
<i>Hardware</i>	One of the major technological limitations of E-learning is the availability of computer hardware (wong, 2007). Learners require basic hardware for E-learning such as desktop, desktop computers and printers (Hiltz, 1997; Kathawala, et al., 2002; Wong, 2007). Major hardware limitation of E-learning system is the necessity of relevant resources including servers, modems, microphones, wireless devices, printers, scanners, computers, networking devices, cameras storage devices and other equipments. (Khan 2005, p. 159; Wong 2007)
<i>Software</i>	Institutions experience similar problems such as software costs and software support cost particularly for software licenses (Khan 2005, p. 159). Software includes word processors, databases, e-mail, presentation programs, reader software, browsers and plug-ins, spreadsheets, learning management systems (LMS), authoring tools and enterprise software and so on (Lytas and Pauloudi, 2001; Khan 2005, p.159-160)

2.7.4 Pedagogical Issues

Success of E-learning implementation depends on the adherence to underlay pedagogical principles that are entrenched in the E-learning (Uhomoihi, 2006). Pedagogical issues in E-learning are major challenges in distance education therefore a strong need of resources for development of the course material arises, e.g. IT-staff with pedagogical education (Andersson, 2008). Ertmer (2005) argues that teacher's pedagogical attitude about the value and role of technology will determine learners' attitude towards using technology (Keller et al., 2007). Mention below is the pedagogical dimensions of E-learning encompassing a large set of factors relating to teaching and learning.

Table 5: Pedagogical Issues

<i>Content Analysis</i>	Content represents the theme to which a course is dedicated. Contents helps in learning and should be change with time to time otherwise, it
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	<p>will be annoying for learners if they get old-fashioned or outdated information (Partow-Navid and Slusky, 2009). Hence, it is imperative to mention all the vigorous and steady contents. Content and task analysis are significant in designing learning systems since selection of design strategy, content classification, techniques and plans for learning environment are based on those analysis (Khan 2005, p.182).</p>
<i>Audience analysis</i>	<p>In view of the fact that E-learning can, hypothetically, be brought up to any one, any time, and any place, learners may come from miscellaneous cultural background and they may be at variance in how they learn. (Mungania (2003). Knowledge about learner's awareness and abilities, individual and common traits, abilities, ideal learning approaches, requirements, communication skills, experience and learners' interest are significant essentials of audience analysis.(Willis, 1992; Kemp, Morrison and Ross, 1994; Khan 2005, p.183)</p>
<i>Goal analysis</i>	<p>Analysis of goals assists in recognizing and simplifying the plans of an E-learning project in the most cost-effective and significant way (Packham et al., 2004). Identifying goals can influence the way content is selected and combined together in a particular course (Khan 2005, p. 185). In E-learning, it is imperative for learners to have apparent goals and aims, and also rational ways to accomplish them. Existence and simplicity of those goals and ideas is reviewed under goal analysis section (Khan 2005, p. 185-186).</p>
<i>Medium analysis</i>	<p>E-learning can be conveyed all the way through different medium, comprising the Internet and other digital technologies. Additionally, media such as books and printed materials can be combined with E-learning (Khan 2005, p. 186). The purpose of media analysis is to illustrate how media features and resources can smooth the process of teaching (Khan 2005, p. 186), so that it can be used whenever suitable. Multimedia presentation tools such as text, graphics, animation, audio, video, and so on, can be used with any E-learning delivery medium to support students in achieving learning goals. (Khan 2005, p. 186-187).</p>

<i>Design approach</i>	The pedagogical viewpoint of the overall design of the course is subjective to whether the content is well structured or ill structured (Galusha, 1997; Boondao et al., 2008). The instructive idea supports an objectivist philosophy, whereas the constructivist approaches focus the primacy of the learners' objectives, understandings, and conceptual strategies. (Reeves & Reeves, 1997; Khan 2005, p. 186-187).
<i>Instructional Strategies</i>	Instructional strategies includes tutorials, demonstrations, simulations and presentation which is different from online presentation modes such as text, graphics, photographs, audio chips, video clips, animations, PowerPoint slides, and video-conferencing etc can be used to create E-learning presentation (Partow-Navid and Slusky, 2009). In discussion forums participants discuss their viewpoints on different concerns and they come out with alternative ways (Khan 2005, p. 190-195).

2.7.5 Interface design Issues

Interface design concerns with course site and portal that includes discussion posts, facilitating discussions online, submitting assignments. Poor user interface design with unconventional interactive controls may cause frustrations in learners (Palloff and Pratt, 1999). Flexible, a user friendly interface and without complex controls is more important to attract the learners, which ultimately results an effective learning system (Brown et al., 2000). Usability and interface design reflects the success of the E- learning system as badly designed user interface frustrates the learners and ultimately dropout rates increase (Magoulas, 2003; Khan, 2005, p.325). Factors that affect user interface design are mention below table.

Table 6: Interface design Issues

<i>Page and Site Design</i>	The appearance and functionality of the page should be easy to navigate, easily accessible and usable for all users including people with disabilities and senior citizens (Khan 2005, p. 327).
<i>Content Design</i>	Content quality and design is one of the key determinants of Web usability

	(Nielsen, 2000). Nielsen suggests that to the point text, writing conventions such as grammar, capitalization, punctuation, usage, spelling, paragraphing must be suitable for the reading level of target audience. Multimedia components such as audio and video etc should be clear and direct (Morrison et al., 1995; Khan 2005, p. 327; Wong 2007, Boondao et al 2008).
<i>Navigation</i>	Designers should focus on learners as they can easily navigate with reasonable speed Romiszowski (2003), Learners can lose motivation due to the lack of clarity and consistency throughout the portal (Simich-Dudgeon, 1998; Khan 2005, p. 328).
<i>Accessibility</i>	Designers should be aware of different barriers to the accessibility for the learners Romiszowski (2003). These barriers may be caused by technical problems including bandwidth in the case when learners do not have high-speed Internet connection therefore; E-learning courses must be bandwidth efficient for all learners (Khan 2005, p. 329).

2.7.6 Resource Support Issues

Successful implementation of E-learning environment requires resource support as the learner belongs to different ethnic groups and they need assistance in different places (Galusha, 1997; Hill 1997, Boondao et al., 2008). Resource support issues which are encountered by learners can be divided into two parts instructional support and technical support (Galusha, 1997; Khan, 2005, p. 352). Institution needs to provide 24/7 technical support for those experiencing problems Mungania, 2003, Online Support includes both instructional and counseling support from the instructor, whereas technical support is for troubleshooting technical problems such as network failure, database crashing, and incompatibility of software versions etc.

Table 7: Resource support issues

<i>Instructional and Counseling Support</i>	Learners who are new to E-learning environment have a higher degree of anxiety (Moore and Kearsley, 1996); therefore, Institutions must clearly mention to the learners that what support is available online and off-line from instructors, faculty, and support staff. Moreover learner should be well informed about the requirements of the course such as assigned readings, online discussions,
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	individual/group projects, and other assignments so that they can succeed (Romiszowski, 2003; Khan 2005, p.353).
<i>Technical Support</i>	Technical support provided online is one of the most significant factors for the success of E-learning as Technical problems that learners cannot easily fix can frustrate learners (Mungania, 2003). Therefore assisting learners during disaster times in easiest and fastest way. Uploading and downloading files, database crashing, troubleshooting, network failure, and so on needs technical support services (Khan, 2005, p.353).
<i>Online and Offline Resources</i>	Learners should have some guidelines on how to assess quality information available online and offline whereas irrelevant resources may frustrates the learners Mungania (2003), Online resources can includes e-books; computer tutorials, journals and offline resources can include books, newsletters, magazines, documents, reference works, Journals etc (Khan 2005, p. 355).

2.7.7 Evaluation Issues

Baker (2003) and Wong (2008) point out that by evaluating the performance one can analyze the effectiveness of E-learning system. Evaluation can be divided into three classes Learner knowledge level evaluation, Tutor evaluation and learner satisfaction level evaluation about the course and teachers etc which is performed at the end of the course. Evaluation issues of E-learning should cater how well courses are taught and supported by institutional. To explore evaluation issues (Khan 2005, p. 379) categorizes it into different factors mention below table.

Table 8: Evaluation issues

<i>Evaluation of E-learning content development</i>	This includes planning, design, production, and evaluation of E-learning contents (Khan 2005, p. 380).
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<i>Evaluation of E-learning environment</i>	<p>This includes instructor and other support from Staff including, tutor, technical support person, librarian, course development, delivery and Maintenance, Instructional Team, Learner Support Services and Evaluation of Administrative Support (Khan 2005, p. 381).</p>
<i>Evaluation of E-learning at the Program and Institutional Levels</i>	<p>Evaluation criteria of an institution should analyze all aspects of E-learning together with course development and delivery, learning environment, and support services (Khan, 2005, p. 385).</p>

2.7.8 Ethical Issues

Ethical issues which may come across E-learning system implementation are social, cultural, political, geographical diversity of the learner as well as learner diversity, legal issues, bias, integrity, equality, privacy and justice as these issues have been in traditional educational system (Khan, 2005, p. 293).

2.7.8.1 Social and Political Influence

Social and political influence which highly effect the implementation of learning success (Gibson, 1998, p. 113). E-learning environment should provide social integration that diverse learners can participate to work together. (Khan, 2005, p.294; Park and Choi, 2009).

2.7.8.2 Bias

Content developer and designer should check and eliminate any bias content material. Articles containing any controversial issue such as cross-cultural or religious issues may frustrate the learner as the learner may belong to any culture and religion (Khan 2005, p.297; Lum 2006).

2.7.8.3 Geographical diversity

E-learning system which offers to different geographical locations in the world, when arranging Online conferences, and other collaborative activities, Institutions must consider learners locations, time zones, and holidays etc (Mungania, 2003; Packham et al., 2004, Romiszowski, 2004; Khan 2005, p.297).

2.7.8.4 Learner diversity

As E-learning system put up different learning styles and cater the needs of those with disabilities and including senior citizens Muilenburg and Berge (2005). Therefore there is a big challenge for the institution and basically to the Instructors for designing online courses that caters to various learning styles (Williams and Peters, 1997). An E-learning course presented around the globe should consider using examples known to their target learners, which helps in better understanding (Khan 2005, p. 298).

2.7.8.5 Etiquette

Institutions should provide guidelines for netiquette (network or Internet etiquette) particularly, when learners post messages on discussion forums in the course via e-mail or instant messaging (Khan 2005, p.301). Both synchronous and asynchronous interactions should not personally attack, therefore the participants should be knowledgeable about etiquette rules, and follow them accordingly (Khan 2005, p.301).

2.7.8.6 Legal issues

Institutions should build policies for instructors, learners, administrators and support services staff for legal issues such as plagiarism, privacy, and copyright. Learners should never publish without permission as participants' personal views and biases, which they may not want the outside world to know. Content authors, instructors and students should be familiar about copyright issues pertaining to E-learning system (Khan 2005, p.329).

2.7.8.7 Cultural diversity

Acceptance of E-Learning system by learners depends upon different cultural levels that are societal, personal, organizational and disciplinary. Sanchez and Gunawardena (1998) states, for success of E-learning system it is important to consider that learners belong to different parts of the world with different linguistic, social, cultural, economic and religious backgrounds (Khan2005, p. 295). In a global learning environment, designers, and developers must consider cultural sensitivities although designing and development of E-learning system is challenging task (Collis and Remmers, 1997; Khan, 2005, p.295). Moreover Boondao et al., (2008) formulated few principles to encounter cultural issues when designing, developing and implementing E-learning system differences mentioned below (Khan 2005, p. 295).

2.7.8.7.1 Educational value differences

Instructors and course designers must more sensitive in providing online course materials for international students as it is observed that eastern learners are more serious in good

educational results therefore; they expect much precise answers from their teachers to answer their questions in exams (Boondao et al., 2008).

2.7.8.7.2 Educational cultural background differences

As eastern learners belong to a rote learning system therefore, eastern learners do not like to participate in discussions and criticize their peer's opinions in class. Therefore, in early stages it's important to provide some activities for interaction of the eastern students to encourage their participation in discussions (Boondao et al., 2008).

2.7.8.7.3 Cultural communication differences

Western learners prefer to openly discuss disagreements in class whereas eastern learners are implicit and reserved in communication, as confrontation is perceived negatively in eastern culture. In addition eastern learners are more respectful to their teachers and they do not prefer to get feedback from their peers so designers should realize this critical issue (Boondao et al., 2008).

2.7.8.7.4 Different language usages

Language is directly associated to culture and in E-learning system learners belongs to different cultural backgrounds so using slang or local idioms may cause confusion to other learners (Boondao et al., 2008).

2.7.8.7.5 Learning style preferences

Eastern Learners and western learners have different learning style preferences; therefore instructors should provide different style of course material, which will fulfill individual learning style preferences (Boondao et al., 2008).

2.8 Individual Acceptance of IT

According to (Hedman and Kalling 2002, p.246) without knowledge it is not possible to use new tools and technologies, some believe that culture (beliefs, norms, values and attitudes and even politics) is equally important. It should be certain that learning is drive by culture and ultimately, there is a potential link of cognition and culture. For understanding of something we are compelled to like it and to like something we have to understand it.

Norms and values act upon individual level, industrial level or even organizational level that basis the resolution potentially away from the rationality which is due to the neglecting , there are cases of irrationally when organization leaders neglects to perform preliminary studies and invest without any plan to gain competitive advantage over their competitors. Eventually

norms and values effect to the employees and other in the organization (Hedman and Kalling 2002, p.246).

Norms and values have a significant importance in corporate world, as business buzzwords come and go with the fads of management. Thus all users and others in organization are affected in different times by these norms and values. In a theory of acceptance of IT, Agarwal (2000) have identified five influential factors (beliefs and attitudes, individual differences, social influences, situational influences and managerial interventions).

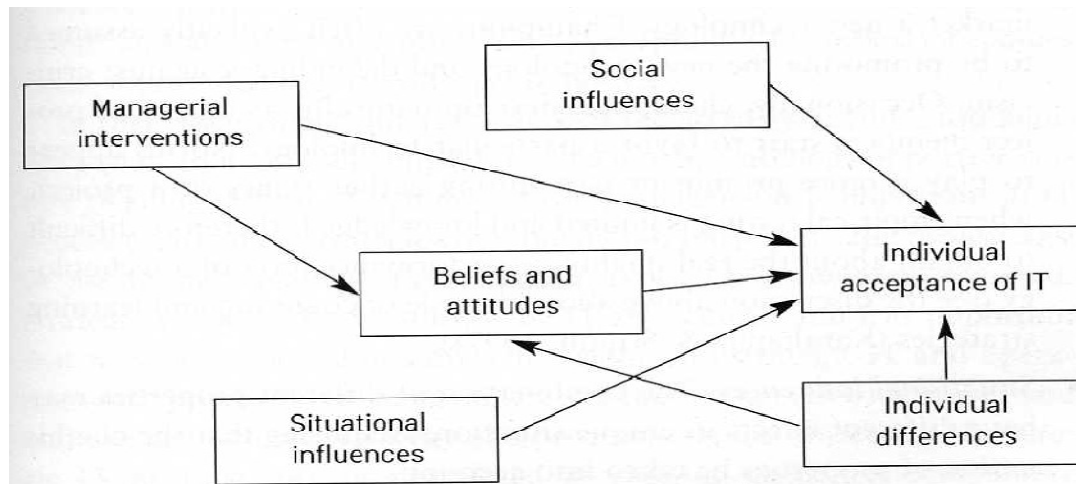


Figure 4. Individual acceptance of IT (Agarwal, 2000)

Source: Hedman 2002, p.247

Beliefs and attitudes: (Moore and Benbasant , 1991) states that users usually perceive that the new system will give relative advantage over the old system and assuming that the new system would be easy to use, it happens only if the new system is compatible with the end users experiences, needs and values only than the new system will ultimately enhance the social status of the end user (Hedman and Kalling 2002, p.248).

Individual differences: Perception and behavior usually differ in relation to IT usage, as the cognition style, demographics and user personality differs. Demographics include broader aspects such as sex, age, experiences and intellectual abilities (Hedman and Kalling 2002, p.248).

Social influences: (Agarwal, 2000) states that social influences plays an important role towards organizational members’ perception about new technology particularly in organizations where there is highly influential social system. User’s perception about the new technology will immediately be reflected among the social circle of colleagues. Different champions are conducted to market the new technology which ultimately defines its success, which have been realized by many managers and decision makers, as social norms appear to play more prominent roles during early stages of the new technology (Hedman and Kalling 2002, p.248).

Situational influences: The combination of diverse properties may have different effect according to the situation which depends upon the scenario and condition that effect in unique situations (Hedman and Kalling 2002, p.248).

Manager’s interventions: Strong management support and commitment is needed to facilitate the acceptance of new technology. Top managers and immediate managers can highly affect the acceptance of new technology through leading by example and by providing support. Acceptance is driven by how managers design work process and structure it according to the organization needs which can form the context, or rationale of the new technology (Hedman and Kalling 2002, p.249).

2.9 Summarized table of critical barriers cited by different authors

The below mentioned table illustrates a summary of the different critical barriers to E-learning successful implementation proposed by different authors.

Table 9: Critical barriers cited by different authors

Title and Authors	Critical barriers for E-learning implementation
<i>“The Seven E-learning Barriers Facing Employees.” (Mungania, 2003)</i>	This study examined seven critical barriers faced by employees in an organization that are, institutional issues (Instructor Skills as well as learners skill development), Management Support issue, Pedagogical resistance (Course Contents and it analysis), ethical issues (Culture Resistance, Legal issues, personal issue), technological infrastructure issue and situational issue.

<p><i>“Who killed E-learning?”</i> (Cronje, 2009)</p>	<p>Author discussed about barriers which cause failure in E-learning implementation process. Barriers identified by the author include institutional issues and pedagogical issue from student’s perspective. Student barriers include financial support, computer self-efficiency and lack of support provided from the institution and the instructor. Organizational barriers discussed are budgeting cost, maintains cost and upgrading cost, whereas Course barrier refer to content quality and overall content design.</p>
<p><i>“E-learning and retention: key factors influencing student withdrawal”.</i> (Packham et al., 2004)</p>	<p>This study was based on the causes of student’s withdrawal from E-learning system. Author has categorized the barriers into intrinsic and extrinsic factors. Intrinsic factors are learner’s self-efficiency and technological issues related issues such as hardware and software.</p> <p>Whereas extrinsic factors are Institutional Issues (working situation, location, academic profile of the learner).</p>
<p><i>“Enhancing learning through technology: challenges and responses”.</i> (Webster and Murphy, 2008)</p>	<p>In this article author mentioned about several challenges reading to E-Learning e.g. Cultural resistance (Socio-political challenges, lack of motivation), technological challenges, infrastructure and software challenges can be lower down by strategic planning and documentation.</p>
<p><i>“Technological barriers to successful E-learning in computer science”.</i> (Gulatee, Y., and Combes, B., 2007).</p>	<p>In this article the author identified different barriers such as Institutional as well as technological barriers such as infrastructure planning, hardware and software issues that could be effective web based learning system from the perspective of tutor and learners.</p>
<p><i>“E-learning and Organization Culture”.</i>(McIntosh, 2006)</p>	<p>In this article author mention about organizational cultural issues that can hinder E-learning initiative.</p>

	Author has classified organizational cultural issues by the values, shared believes, behaviors that are acquired over time by organizational members.
<p><i>“A critical literature Review on E-learning limitations.”</i> (Wong, 2007)</p>	The author cited limitations related to E-learning like technological issues such as (hardware, fast internet connection), issues related to individuals such as lack of skills, Interface design Issues (design issues, Institutional Issues (training methods, personal issues and comparisons regarding traditional learning system).
<p><i>“Factors influencing adult learners’ decision to drop out or persist in online learning”.</i> (Park and Choi, 2009)</p>	This study indentified various issues influencing dropout rate of the learners in online learning programming. The author has divided these issues into internal and external factors. Internal factors are Ethical issues (social and academic integration, self efficiency of the learner, instructor skills), technological problems and lack of motivation while external factors are Institutional issues which include (scheduling conflicts, family issues, and financial issues) and Resource support issues like managerial support.
<p><i>“Barriers to learning in Distance Education.”</i> (Galusha, 1997)</p>	Author has described and analyzed the barriers in distance education by different categories. First area of concern such as Institutional Issue (financial cost, staff development) and resource support issue that is of the major factor for dropout rate. Second area is the lack of feedback from teachers (sheets 1992: Galusha, 1997) believed that dropout of students is due to lack of integration and their geographical location. It is important that the students receive feedbacks regularly so that they may not get frustrated (Wood, 1996, Galusha, 1997). Third area is resource support and services which includes technical assistance, support of services, which is necessary for distance learners. Fourth problem is the alienation and isolation with the distance

	<p>learners. As the distance learners may feel insecure and inadequacy. Fifth problem is the Pedagogical Issues (study material) provided to student and it should be considered that the student is experienced with E-learning system or not in case of distance study. Other problems are computer self-efficiency, writing skills of student as well as study quality of the course materials (Content) prepared by instructors.</p>
<p><i>“E-learning: just a waste of time”</i> (Lytras and Pouloudi, 2001)</p>	<p>The author mentioned about high dropout rate of students from E-learning courses and described different factors such as, Technological Issue (Technological infrastructure), resource support issues (Management Support), Institutional Issues (Staff training, Economic/Finance, self efficiency) and Ethical issues (Culture Resistance). On the bases of above-mentioned issues the author considered E-learning process is just a waste of time; moreover the research is based on Multidimensional Dynamic E-learning model.</p>
<p><i>“The Strategic role of digital libraries: issues in E-learning environments”.</i> (Wang, M.Y, 2003)</p>	<p>In this article author described the effective role of digital libraries in E-learning environment moreover he discussed issues in E-learning environment such as pedagogical issues (content analysis), technological issues, ethical factors such as political, were described and analyzed.</p>
<p><i>“The future of E-learning as an educational innovation: Factors influencing project success and failure.”</i> (Romiszowski 2003)</p>	<p>In this article author discussed some factors, which ultimately cause failure to E-learning. These factors are Institutional Issues (financial aid, training), lower motivation in learning and management issues such as poor management skills, technological issues, pedagogical issues (course contents), and resource support issues.</p>
<p><i>“How’s the E-learning Baby? Factors Leading to Success or</i></p>	<p>In this article the author focused on some issues which are hurdles in the success of education technology such</p>

<p><i>Failure of an Educational Technology Innovation</i>". (Romiszowski , 2004)</p>	<p>as management issues, Technological infrastructure, resource support issues, Institutional issues (learning skills development, Economic/Financial) and ethical issues (culture Resistance, social and political issues).</p>
<p><i>"Student Barriers to Online Learning: A factor analytic study"</i>. (Mullenburg and Berge, 2005)</p>	<p>In this article the author identified some factors which are ethical issues (social interaction, administrative issues), pedagogical issues, quality of course content, learners' motivation, resource support and management issues, institutional issues (financial aid) and technological issues which acts as barriers for students in an online learning environment.</p>
<p><i>"Challenges and Issues of Teaching Online"</i>. (Baylen and Zhu, 2009)</p>	<p>The main focus of this article is to identify the challenges faced by teachers in online teaching process. These challenges are i) Technological issues ii) use technology in innovative way iii) fulfilled student needs at a distance iv) increase flexibility in working hours and locations v) quick response to student request for online educational opportunities vi) more interaction with student and vii) quick response to administration.</p>
<p><i>"Cross- and Multi-cultural contexts for E-learning- challenges and opportunities for the E-tutor"</i>. (Holmes et al., 2005)</p>	<p>This paper has examined the challenges offered by cross and multi cultural E-learning. In this article focus is on E-learning issues within a multicultural environment. Guidelines for instructors who can work in a collaborative and multi-cultural environment. In multicultural environment different Ethical issues such as language and learners diversity as described and analyzed.</p>
<p><i>"Cross-Cultural Issues in Online Learning"</i>. (Rogers and Wang, 2008)</p>	<p>Author mentioned about cultural issues in online learning education. Author classified variety of cultural issues focusing on ethical issues (language impact). These Issues include Educational values (purpose, method of education), Reasoning patterns (writing structure, problem analysis), cultural resistance, Ways of</p>

	<p>knowing (Analytical approach rather than synthetic approach used by western society), Ways of communication (relationships between student and teacher), content and context, technological concerns and language impact.</p>
<p><i>“E-learning in small Organizations”</i> (Sambrook, 2003)</p>	<p>In this paper author mentioned some tradition barriers faced by small and medium size organizations with respect to E-learning. These are Institutional issues (finance), time management issues, and technological issues, as well as infrastructure planning issue.</p>
<p><i>“Analyzing Cultural Influences on E-learning Transactional Issues”</i> (Lemone, 2009)</p>	<p>Author discussed about the cultural issues faced by learner in Web based learning environment. Unconventional language style and typical idioms may cause confusion to other learners, therefore Instructors and course designers must more sensitive in providing online course materials for international students.</p>
<p><i>“Challenges of Change Management in E-learning”.</i> (Partow-Navid and Slusky, 2009)</p>	<p>Author mentioned about the challenges in terms of change management, during E-learning implementation process. Author classifies these processes in strategic analysis and strategic directions. Strategic analysis, which determines the organizational effectiveness where as strategic directions, is based on organizational goals and objectives.</p>
<p><i>“Research on Cultural Factors in Global E-learning”.</i> (Stepich et al., 2009)</p>	<p>Multicultural factors for the success of E-learning in organization were considered and formulated “one size fits all” or “custom fit” the author formulated these approaches. Moreover Hofstede model was used to analyze the effectiveness of E-learning system in organization.</p>
<p><i>“Teaching Culture and Communication with Online Media”.</i> (St.Amant, 2009)</p>	<p>Author examined on the media, which allows students to connect global community, but people need to know the cultural factors such cultural diversity and geographical diversity can affect online interactions. Online media</p>

	allows every individual to tap into a growing global community. Cultural communication differences and educational cultural differences act as barriers towards online education system.
<p>“Challenges for E-learning and adult Students in Higher Education” (Correia and Sarmento, 2009)</p>	<p>Author discussed the challenges faced by adult students when they come across new system. Therefore the students should focus on i) meeting expectations, ii) improve learning and teaching methodologies and iii) understand and overcome difficulties faced by adults in higher education programs.</p>
<p>“Understanding Cultural Influences: Principles for Personalized E-learning Systems”. (Boondao et al., 2008)</p>	<p>This paper explored the cultural influence towards students’ learning process. Author formulated few principles to encounter cultural issues differences mentioned below Educational value differences, Educational cultural background, Cultural communication differences, Different language usages and Learning style preferences. By applying these principles when designing personalized E-learning system will improve the learning ability of the learners.</p>

2.10 Sustainable development Model / 4Es

Succeeding in sustainable development depends more on long-term changes and modifications in individuals’ behavior, communities, firms and the public sector. Organizations can change these behaviors overtime but they have to discover particular ways of engaging both individuals and groups. Managers have to create new strategies to foster new social norms to bring behavioral changes in organizations (Defra, n.d).

“It is not necessary that actions are caused by awareness or that awareness is a direct cause of increased information. Different approaches should back up the provision of information either through advertisements, leaflets or labeling”(Defra, n.d). The model below demonstrates four approaches that each segment has influential effect on changing behavior, which is introduced as the sustainable development strategy.

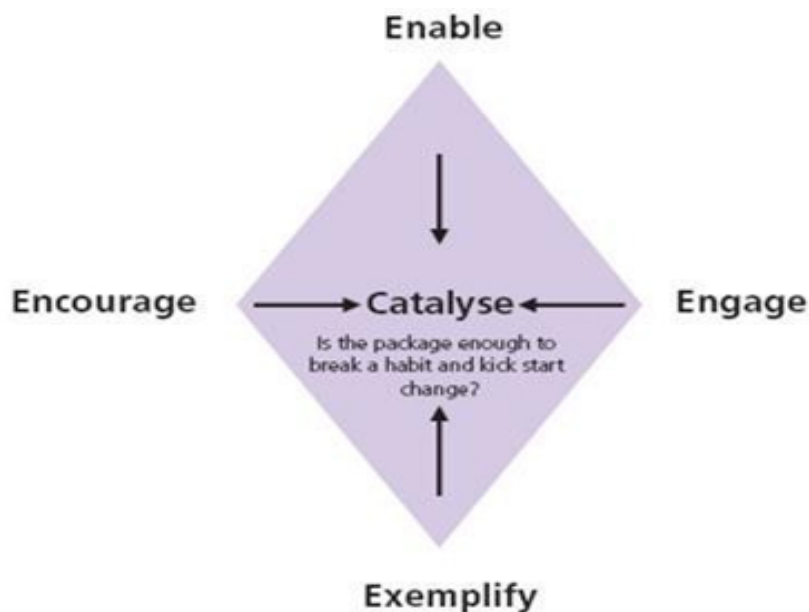


Figure 5: The model outlined the behavioral change by using four E's - Enable, Encourage, Engage and Exemplifying

(Defra, n.d).

Organizations need a balanced approach for internal and external barriers that acts as resistance to change. Four approaches have been presented in this model to mitigate the resistance to changes while each factor represents distinct motivating factors for behavior changes. However, the models do help in exploring opportunities in more systematical approach for successful implementation of technology through behavioral goals. Four approaches described in the model help top management in cultural or behavioral changes in organization (Defra, n.d).

2.10.1 Exemplify – Government takes the lead

Before initiating, it is very important to make sure that the language used for sustainable development is based on strong intellectual, professional grounds and logics. Language should be capable to demonstrate the worth of sustainable development to the correct users. To create change it is necessary to understand the audience and to know what is wanted from them (Defra, n.d).

2.10.2 Enable (making it easier)

This is the beginning level. It is crucial to demonstrate the people that how to change, otherwise, there is no mean to ask the people for change. Once the people know how to do and what to do, here it is necessary to make available, accessible and provide resources for what they are urged to do. Therefore, it is required to help the people to make them responsible by providing particular education, skills and information. Easy access, alternative and suitable infrastructure should be available to them for achieving target (Defra, n.d).

2.10.3 Encourage/ Enforce (give the right signals)

It is not necessary that information and knowledge will bring the change even if organization has made sure an easy access of the employees to all available resources. The organization has to use some effective techniques for encouragement and sometime has to enforce behavior change, where it is necessary. Organization should introduce reward schemes and grants for employees. Technological confidence, awareness building, motivation and commitments are also important steps to bring behavioral change in employees (Defra, n.d)..

2.10.4 Engage (get people involved)

It is difficult to immediately deliver sustainable development from top to bottom. Organization can provide opportunities but they can get the significant output when employees take their responsibilities. It would be more efficient if all the effected people were involved in the beginning of developing policies, as it is not the effective way to give remote messages to employees' instead of face-to-face contacts (Defra, n.d).

3.0 Research Design/Methods

This chapter deals with the choice of the topic, data collection, validity and reliability, method critic and research process which represents how the data is collected and analyzed.

3.1 Choice of Topic

Fisher (2007, p. 31-33) suggests that the researchers should choose the topic of research more relevant and interesting to remain motivated and committed to complete the project. The authors belong to Pakistan, where E-learning system is not much being practiced in organizations. While, we found out that E-learning system is a proficient tool in learning process as, it is already in use in Sweden. Therefore, it was quite interesting for us to explore this topic. In addition, we were interested in finding out the barriers in implementation of E-learning system and to investigate the role of organization's culture for successful implementation of E-learning system. Fisher (2007, p. 31-33) states that the chosen topic should be accessible and it is necessary to make sure that sufficient literature is available for making detailed analysis. We believe that that the literature we have is sufficient for the detailed analysis.

3.2 Research Process

There are various methodological approaches to carry out research i.e. realist research, exploratory research, critical realism, standpoint research, action research and phenomenology etc, (Fisher, 2007, p. 15). In addition, Fisher (2007, p. 153-155) mentions two basic kinds of research e.g. Explorers and Surveyors. A kind of research where an open approach is used with conceptual framework but the authors are not sure about outcomes and results of the work they do, is called exploratory research. On the other hand, surveyors are more focused and structured and they already know about the results and outcome of their work check. According to these basic concepts our research is exploratory as we are dependent on secondary data check.

3.3 Data Collection and source

Fisher (2007, p. 45) states that data can be collected from existing databases, through questionnaires, conducting fieldwork or performing case studies as it depends on the kind of research. In this research all data has been collected from available databases as the research is entirely based on secondary data collection method. Secondary source has been used in this

research. The data has been extracted from articles, books and websites, magazines, journals and articles with focus on critical barriers to E-learning implementation.

According to Fisher (2007, p. 158-161) states that data can be qualitative or quantitative depending upon the method of search study. This research is based on qualitative approach, no statistics has been used in this research and all research has been analyzed by words not figures.

3.3.1 Access of information

Full text databases of Malardalens University search engine are the sources of information during this study. Furthermore, to answer our research question many articles, journals and conference papers are obtained from different libraries e.g. ELIN, EMERALD, ERIC and EBSCO. Some reference books were also used during this study, which were issued from Malardalens University library. Going through a wide-ranging literature review, twenty-three articles were identified that provide answer to the research question from different angles. The following title base keywords criteria were used for searching the articles.

- Barriers of E-learning system implementation,
- Implications of E-learning system in organizations,
- Implementation of E-learning system in large organization,
- Challenges of E-learning system Implementation,
- Limitations of E-learning System,

To describe and analyze the role of organizational culture in successful implementation of E-learning system the following keywords criteria were used.

- Cultural issues of E-learning system,
- Cross cultural issue in distance education,
- Cultural influence on student learning,
- Analyzing cultural Influences on E-learning Transactional Issue,
- Cultural difference and influence on E-learning system,
- Social and cultural impact on E-learning system effectiveness,

- A cultural Analysis of relearning for developed and developing countries,
- Cross and Multicultural issues for E-learning system success,
- Influence of organizational cultural in E-learning system ,
- Organizational resistance towards implementing E-learning system.

3.4 Data analysis

According to Miles and Huberman (1994, p.10) data analysis is an iterative process. Data analysis consists of three activities: Data reduction, Data display, and Conclusion drawing/verification”.

Data reduction, this process is applied to qualitative data and focus remains on selection, simplification and transformation of data. In this continuous process the data is organized throughout the research to draw and finalize a conclusion (Miles and Huberman, 1994). In this research, the data was reduced from critical barriers in implementation of E-learning to cultural resistance in organizations.

In data display the data is displayed in an organized form or the data has to be put into an order to easily draw the conclusion. A table has been mentioned below that indicates distinct frequencies of various factors as critical barriers to E-learning implementation and the role of organizational culture

Conclusion drawing/verifying describes all the possible explanations, causal flows and propositions to be made. Therefore conclusion has been drawn on the basis of findings and discussed analysis to signify the influence of organizational culture in implementation process.

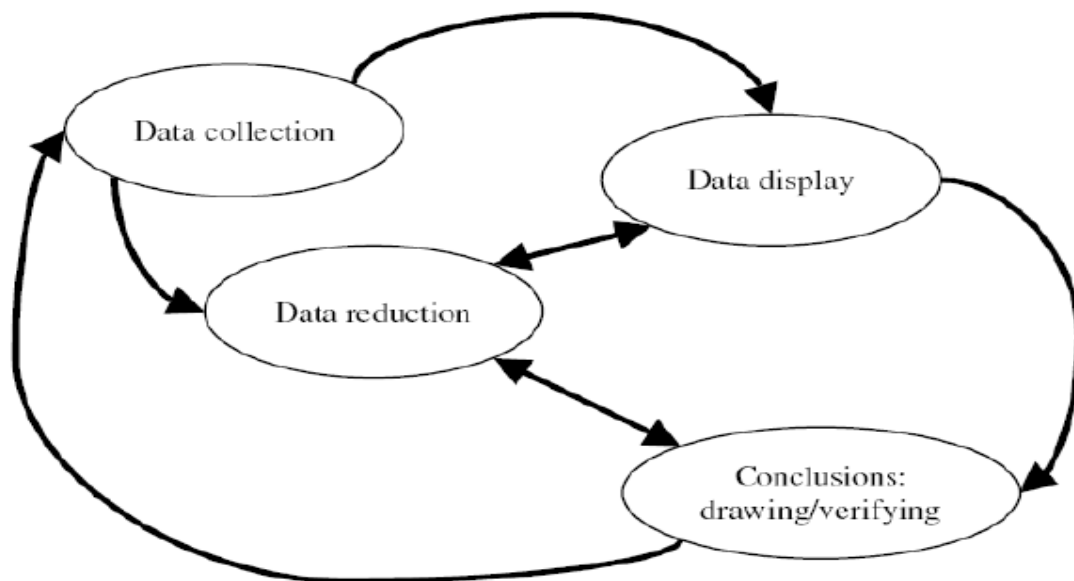


Figure 6: Component for data analysis: Interactive model.

Source: (Miles and Huberman 1994, p. 12)

The above model has been used for the analysis of this research. Moreover, this analysis emphasizes more on comparing various author's view to analyze and describe the critical barriers and role of culture to employ E-learning system in organizations.

3.5 Validity and Reliability

Validity is defined as “the degree which researchers have measured what they have set out to measure” whereas reliability means “the extent to which another researcher can reach the same conclusion by following the same research process” (Kumar, 2005).

Articles have been used to identify the barriers of implementing E-learning system and to analyze the role of organizational culture. Besides, frequencies of more influential barriers have been generated to validate the barriers and cultural role in implementation process.

3.6 Method Critique

Due to the time limitation, a limited number of articles have been used to formulate the frequency to identify the critical barriers. Besides, access to certain articles that could significantly contribute to this study was a hurdle, as a prior payment was needed for access to those articles. It would be better to use more articles to strengthen our research as a number of studies have already been done in this area. However, this study assisted us to describe and analyze the critical barriers to E-learning implementation and to gain a theoretical background

on E-learning implementation. It was also discovered during analysis of this study that most of the authors mentioned the critical barriers with mere repetition.

4.0 Analysis

This chapter provides an overview of the frequency of the various critical barriers for successful E-learning system implementation with focus on organizational culture towards implementation process mentioned in the literature.

The above mentioned E-learning Khan's framework discusses about for implementation issues that are categorized in eight parts, institutional issues, management issues, technological issues, pedagogical issues, ethical issues, interface design issues, resource support issues, and evaluation issues, moreover khan has given equal weight to the barriers which may come across implementation process. The table mentioned below shows a summary of different factors that act as barriers in successful implementation of E-learning system, proposed by different authors and their respective frequency. It was noticed that, some of the issues cited by some authors were sub divided and given several names by other authors, although having similar meaning.

In order to find critical barriers each category is further classified into different factors, Twenty-three articles have been analyzed to find the frequencies of each factor. These frequencies represent the number of authors that cited particular barrier and ultimately have higher weight by specified degree of significance of those factors that may act as critical barrier towards successful implementation process. Table mentioned below shows the frequency of various critical barriers for implementing E-learning system.

Frequencies indicate the different critical barriers in E-learning implementation cited by different authors:

Table 10: Frequencies of different critical barriers in E-learning implementation

Critical issues	Factors	Frequency
Institutional Issues	Faculty and staff support	12
	Learning skills development	11
	Policies	8
	Needs assessment	6
	Readiness assessment	6
	Organization change	6
	Instructional design	5



	Budgeting and return on investment	4
	Program and course information catalog	4
	Financial Aid	4
	Intellectual property rights	2
Management Issues	Project Manager's skills	5
	Managing content development process	3
	Updating and monitoring of E-learning environment	3
	Security measures	2
Technological Issue	Infrastructure planning	11
	Hardware issues	9
	Software Issues	9
Pedagogical Issues	Content analysis	5
	Audience analysis	2
	Goal analysis	2
	Presentation	1
	Discussion	1
Interface design Issues	Content design	12
	Page and site design	5
	Navigation	5
	Accessibility	4
Resource support issues	Instructional and counseling support	9
	Online and offline resources	9
	Technical support	7
Evaluation issues	Evaluation of E-learning environment	4

	Evaluation of E-learning content development	2
Ethical issues	Geographical diversity	9
	Social and political influence	8
	Cultural diversity	6
	Educational cultural background differences	6
	Learner diversity	5
	Educational value differences	5
	Cultural communication differences	4
	Different language usages	4
	Legal issues	2
	Bias	1
Organizational Culture		9

E-learning system implementation barriers are heterogeneous encompassing pedagogical, interface design, content, situational, instructional, and technological barriers (Mungania, 2003), In addition Khan's E-learning frame work have given equal weight to all the barriers which may come across E-learning system Implementation process. Most of the articles focus on technological, design and delivery issues and few researchers have discussed on organizational cultural aspect that is vital for the success of the overall project and it is often cited by them as the most critical factor for successful implementation and sustainability of E-learning system in an organization.

Organizational E-learning system implementation strategies have traditionally focused on technical issues. Yet people remain the most influential aspect of any technology acceptance

and its success. While technological infrastructures can always be replaced or upgraded, however changing learners' perceptions and attitudes need divine intervention (Sutton, 2003). Organizational culture differ within and across organizations as working hours, technologies, content quality, support structures and related to broader organizational issues such as politics, legal issues, financial aid, learner diversity, cultural diversity, geographical diversity and their influence on organizational culture which comes into play as important factor that may impact the success of the E-learning system. It is the argument of these articles that the chief reason for the failure of E-learning system lies in the misalignment between training needs and business objectives. There is usually no comprehensive E-learning strategy that integrates learning and business needs, moreover there seems to be a point at which managers in organization lose touch with the key objective of their organization and they concentrate on project deliverables and technological issues rather than people growth and their skill development (Cronje, 2009).

E-learning system initiative must reduce costs over the long term, moreover improve business unit and individual performance, while maintaining core competencies, and enabling the organization to respond quickly to market needs and competitive pressures (Cronje, 2009). Therefore, an E-learning strategy system initiative should motivate employee, improve productivity, and aid retention across the organization. E-learning system initiative requires a paradigm shift not only for instructors, but also for learners, technical, administrators and other support services staff, and indeed the organization as a whole. Those outcomes are broad in range and need thoughtful concern of the benefits and limitations of learning technologies and inclusive look at overall business needs, technological concerns and learning needs (Romiszowski, 2003).

An ethical culture where employees and management exercise values and not rules to self govern can only take root when managers, executives, supervisors, and employees recognize and embrace the organization's values and principles and integrate them into their behavior (Verschoor, 2006). It is impossible, in the view of many scholars, to formulate a model of high quality teaching without taking issues of culture and context into consideration (Boondao et al., 2008; St.Amant, 2009). From the above findings it was discovered that organizational cultural issues is one of the most frequently cited factor, moreover within cultural and ethical issue there are different critical factors such as geographical diversity, learner diversity, social, political influence, educational cultural background difference and educational value

differences are the most frequent cited barriers towards the successful implementation of E-learning system (Romiszowski, 2003; Boondao et al., 2008).

The lack of cultural adaptation is a leading reason why E-learning system fails to work (Boondao et al., 2008). The success of implementing an E-learning system relies more on the people and culture of the organization as much as on the various technologies used (McIntosh, 2006). In E-learning atmosphere, learners who come from diverse ethnic groups and culture require different support (Packham et al., 2004).

Organizational culture can be thought of as values, beliefs, philosophies, ways of doing things and relating to other people exhibited by members of an organization (McIntosh, 2006). There are also subcultures within organizations that can vary to a great extent. Organizational culture can help or obstruct an E-learning initiative; moreover by knowing the organizational culture, one will be better prepared to work with it, rather than against it (McIntosh, 2006). For the success of E-learning system it should be considered that learners belong to different parts of the world with various social, cultural, linguistic, economic and religious backgrounds (Mungania, 2003; Packham et al., 2004; Romiszowski, 2004).

Implementation of E-learning system in organization requires a change in management that involves a shift in organizational culture (McIntosh, 2006). Resistance to E-learning technology originates mainly from a fear of losing employment and lack of required skill to use the required technology, Employee's reactions to change are often irrational and defensive this ultimately limits the frequency of cultural changes (Galusha, 1997). E-learning projects must be anticipated in advance to remove resistance towards its implementation process (Slusky and Navid, 2009). Organizational culture can be formed by certain group for solving their problems concerning implementation and internal integration which will mitigate the resistance of implementing E-learning system in their organizations (Schien, 1996).

Without the commitment from the organization's top management E-learning system implementation process is at a risk (Marr, 1995; Galusha 1997). Institutions should change their organizational model and practices which are embedded in the overall organizational culture to deal with new technology (Childs et al., 2005; Baylen and Zhu, 2009). From the above findings it was discovered that within the category of Institutional issues there are different critical factors such as Faculty and staff support, Learning skills development, policies, assessment needs, readiness assessment, organization change and Instructional design are the most frequent cited barriers by different authors. Lack of faculty or staff support provided by the institution is one of the critical barriers, as Institutions are responsible to create effective E-learning environment (Galusha, 1997). According to (Galusha, 1997;

Childs et al., 2005) biggest problem for distance education is the lack of reliable technical support by the faculty which causes frustration for both staff and the learner. According to Packham et al. (2004) learners will ultimately give up if they are unable to get the technology to work and do not receive support.

A further barrier is the approach of the Institution to distance lecturers who are usually seen as less prominent as their contact-teaching peers (Galusha 1997). Skill development of the learner as well the instructor is major barrier which was discovered within the category of Institutional issues (Wang, 2003; Cronje, 2009). Technical skill development includes computer and internet proficiency as a necessity for E-learners (Muilenburg and Berge, 2005). Academic skill development training should be provided on every occasion whenever needed (Muilenburg and Berge, 2005; Mungania, 2003). Poor instructor's training skills as well as learner self study skills acts as a major barrier to words E-learning success (Romiszowski, 2003). One more factor which is repeatedly cited by the authors was assessment of E-learning system effectiveness. (Romiszowski, 2003) states that intrinsic influencing factors like financial problems, management support issue and unplanned goals which ultimately cause disaster towards implementation process. Institution should perform detail analysis and examine their needs to set the goals with the institution's ambitions and strategic plans before starting implementation process of E-learning system (Childs et al., 2005; Partow-Navid & Slusky, 2009).

Magalhaes (2004) states that management issues of E-learning are the most critical barriers which comprises of various stages of administration such as scheduling, design, construction, assessment, delivery, and maintenance (Romiszowski, 2004; Parkham et al, 2004). Organizational change resistance is one of the most noticeable barriers in implementing E-learning (Childs et al., 2005). A strong management commitment with change management strategies is needed in overall planning, budgeting, supervising, scheduling and integrating the E-learning needs to all aspects of the institution (Childs et al., 2005). Within the category of Management Issues factor such as Project Manager's skills is the most frequent cited barrier. According to (Cronje,2009) Project Manager's seems to focus on project deliverables and technology rather than to concentrate on running a business needs and objectives hence lose the key mission of their organization. Moreover Planning, recruiting, supervising, budgeting, project progress are the key skills required of E-learning project manager (khan, 2005 p.110).

Technological limitations are among the most frequent cited barrier for the success of E-learning system (Wong, 2007; Gulatee and Combes , 2007). From the above findings it was discovered that within technological issues there are different critical barriers such as Infrastructure planning, Hardware issues and Software Issues in organizations which are repeatedly cited by different authors. Technological dimension of E-learning consists of three factors that are infrastructure planning, hardware, and software (Kearsley, 2000; Rumble, 2000). Inadequate technology infrastructure causes failure in E-learning system (Phillips, 2002; Romiszowski, 2003). Most common technological limitation is the internet connectivity problems and 24/7 availability of high speed bandwidth as busy internet lines and internet traffic problems create frustration for the learners (Hiltz 1997; Mungania, 2003; Akar et al., 2004). Technological infrastructure includes the operating system, network hardware and other devices like servers (Wong, 2007; Abdou & Elmulti, 2002; Romiszowski, 2004). Moreover institutions should develop policies and guidelines to cater various technological infrastructural issues which includes 24/7 technical support, loss of data and incapability to save or transfer data are the most frequent technological limitations (Mcgraw, 2001; Mungania, 2003; Romiszowski, 2004; Wong, 2007). The most critical technological limitation of E-learning is the lack of adequate hardware (Galusha, 1997). Lack of funds and insufficient resources for maintenance of hardware and software sources create problems for companies during the implementation of E-learning system (Homan and Macpherson 2005; Wong, 2007).

Pedagogical issues in E-learning are among the major challenges towards its success, therefore a strong commitment is needed as a whole, such as training of IT-staff with pedagogical education (Andersson, 2008). From the above findings it was discovered that within the category of pedagogical issue factors such as content analysis and audience analysis are the most frequent cited barriers. (Romiszowski, 2004; Correia & Sarmiento, 2009) states that content is generally text and is repeatedly criticized as boring and puerile, Old-fashioned or outdated information may frustrate the learner (Partow-Navid and Slusky, 2009). Success of E-learning system is based on content analysis as selection of design strategy, content classification, techniques and plans for learning environment are based on those analyses (Khan 2005, p.182).

(Lohr, 2000; Khan, 2005 p.325) states that learning interfaces are defined as those where communication takes place among a learner and a learning system. User interface design can be challenging to the learner if it has unconventional E-learning system Interface which may

cause frustrations and learners ultimately go for conventional classroom based learning (Palloff & Pratt, 1999; Khan, 2005, p. 325). From the above findings it was discovered that Within the category of user interface design issues Content design Page, site design and navigation are the most frequently cited factor, moreover factors such as site design, content design, navigation, accessibility, and usability that may act as critical barriers towards the successful implementation of E-learning system. Page and site design issues create barriers that make E-learning materials inaccessible (Khan 2005, p. 327). Content design quality is one of the most critical determinants of web usability (Nielsen, 2000; Khan, 2005 p. 328), Therefore all the content including audio and video should focus on learners need (Wong, 2007; Boondao et al., 2008; Partow-Navid and Slusky, 2009). Designing navigation plays an important role towards the success of E-learning system, learner can lose motivation due to the lack of clarity and consistency thought out the site. (Simich-Dudgeon, 1998; Khan, 2005 p.328) Technical issues for example bandwidth issue may act as accessibility barrier, Therefore, E-learning courses must be bandwidth efficient (Khan, 2005 p.329).

According to Hill (1997) resource support which consists of both technological and human-based support throughout an E-learning course can help a course to maintain momentum and ultimately become successful (Khan, 2005 p. 325). From the above findings it was discovered that Instructional and counseling support, Online and offline resources and Technical support are the most frequently cited factor, moreover within resource support issue there are different critical factors such as technical support, online as well as offline support act as critical barriers towards the success of E-learning system (Galusha, 1997; Packham et al., 2004).

Learners will highly appreciate the support provided in times of disaster; Technical support issues such as upload and download files, troubleshooting, servers being down and so on. Technical problems that learner cannot easily repair or have to wait for long time can put learners behind the schedule, eventually frustrating and eventually demotivating them (Khan, 2005 p.354). According to Park and Choi (2009) lack of support from the institution and instructor are the root causes for the failure of E-learning system in small and medium organizations (Cronje, 2009). Institution needs to provide 24/7 technical support for those experiencing problems Mungania, (2003), as individuals who are new to E-learning environment may have a particularly high degree of anxiety (Moore and Kearsley, 1996). Baker (2003) and Wong (2008) indicate that by evaluating one can find the quality and the effectiveness of E-learning system. From the above findings it was discovered that evaluating issues is one of the most frequently cited factor cited by different authors. By evaluating how

well courses are taught and supported by the institution the effectiveness of E-learning can be measured which will ultimately reflect the success of E-learning system (Khan 2005, p.379; Childs et al., 2005).

5.0 Conclusion

This chapter concludes the findings and the analysis based on the objective and purpose of the study in order to give answer to the research question.

Taking into consideration all the barriers mentioned in different articles and authors' perspectives, barriers to E-learning implementation are discovered and within each category of barrier are different critical factors. Khans E-learning frame work has given equal weight to all the barriers which may come across E-learning system Implementation process. As some factors are repeatedly cited by different authors and in different articles which are considered as most critical barriers of implementing E-learning system in organizations. Research has pointed out critical barriers in E-learning system implementation, which lead to its failure during the implementation process hence negatively affecting the organizations performance.

From the findings it was discovered that within each category defined by khan E-learning frame work there are critical factors for example within institutional issue there are different critical barriers such as faculty and staff support, learning skills development, policies and organization change which are repeatedly cited by different authors which have ultimately higher degree of significance. Project Manager's skill is the most significant factor within the category of Management Issues. Other factors such infrastructure planning, hardware issues and software issues also have the higher weight or higher degree of significance within technological issue. Content analysis and content design are frequently cited factors among the categories of pedagogical issues and interface design issues. Technical support, online and offline resources instructional and counseling support are the critical factors within resource support issues and resource support issues, by evaluating how well courses are taught and supported by the institution the effectiveness of E-learning can be measured which will ultimately reflect the success of implementing E-learning in organization (Khan 2005, p.379; Childs et al., 2005). From the above findings it was also analyzed that cultural diversity, educational cultural background differences, political influence, geographical diversity, learner diversity, and the legal issues are the significant barriers towards the successful implementation of E-learning system.

Although most of the articles focus on different aspects such as technological, interface design and pedagogical issues while few researchers have discussed on organizational cultural aspect that is influential role and it is often repeatedly cited by them as the most critical factor towards the success of E-learning system in an organization.

Main reason for the failure of E-learning lies in the misalignment between business objectives and training needs which varies from organization to organization (Cronje, 2009). An E-learning implementation strategy that recognizes the value of organizational culture will ultimately generate excellence in workplace dynamics. According to Sluky and Navid (2009) E-learning implementation strategies should be based upon group dynamics for organizational change issues such as alignment, adaptability, participation, teamwork. Moreover the organizational policy should motivate the employees of the organization to improve productivity and enable skill development across the organization (Romiszowski, 2003).

Implementation of E-learning into an organization that's not prepared for it or doesn't support it, or doesn't have a culture founded on knowledge sharing, so E-learning professionals build a positive learning culture within their organizations in order to make sure the success of their E-learning implementation process. Therefore a successful E-learning initiative cuts down costs over the long term, improves collective performances as well as individual ones, helps to maintain core objectives and goals of the organization and at the same time enables it to react according to competitive pressures and market needs (Romiszowski, 2003). Barriers of implementing E-learning system in an organization can be reduced by considering the limitations of learning technologies and a comprehensive analysis of business, technology, and learning needs (Uhomobhi, 2006).

According to (Rogers and Wang, 2008) *“Culture itself cannot be objectified as just another factors, it should be programmed into designing phases at distance learning course, moreover culture is so much part of knowledge that it must be emphasize not only at the analysis phase but all the phases of design process”*.

Successful Implementation of E-learning system in organization requires a change in management that involves a shift in culture (Partow-Navid and Slusky, 2009), The lack of cultural adaptation is a leading reason why E-learning fails to work (Sheard and Boonado, 2008). Individual behaviors are deeply embedded in social situations, institutional contexts and cultural norms. Sustainable development diamond model demonstrates four approaches to mitigate the resistance to change (Defra, n.d). McIntosh (2006) state that by understanding the

organizational culture, one will be better prepared to work with it, rather than against it (McIntosh, 2006). Four approaches help top management in cultural or behavioral changes in organization, while each factor represents distinct motivating factors for behavior changes. To create change in the organization, it is necessary to understand the audience and to know what is wanted from the employees (Defra, n.d). Once the employee understands how and what to do, it is necessary to provide and give access to resources (Defra, n.d). Easy access, alternative and suitable infrastructure should be available to the employees for achieving targets. Organization should introduce reward schemes and grants for employees (Defra, n.d). Technological confidence, awareness building, motivation and commitments are also important steps to bring behavioral changes in employees (Defra, n.d). It would be more efficient if all the effected employees are involved in the beginning of policy development, as it would be better for the implementation process as a whole that the employees give suggestions about the problems they might face (Defra, n.d).

6.0 Future Research

This chapter deals with the suggestion for future research work related to the study topic which could be useful for various organizations.

This research elicited and examined a number of extreme points of views about the barriers of implementing E-learning in organizations. Although it was discovered that certain issues have not yet been properly addressed to E-Learning implementation processes, as the prime focus of the research was on organizational culture. Critical barriers such as institutional issue, management issue, pedagogical issue, technological issue, interface design issue, evaluation issue, and resource support issue and the factors within each issue have not yet been investigated with detail coverage.

The need to carry out detail research involving case studies based on survey questionnaires involving various industries which will ultimately give a better understanding of organizational culture and also overcome various cultural aspects within implementation process.

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8.0 Appendix

Barriers	Critical Factors	Author's Name
Institutional Issue	Faculty or staff support	Galusha (1997), Romiszowski (2003), Packham et al (2004), Muilenburg and Berge (2005), Childs et al (2005), Lum (2006), Gulatee and Combes (2007), Webster and Murphy (2008), Park and Choi (2009), Baylen and Zhu (2009), Cronje (2009).
	Learning skills development	Galusha (1997), Wang (2003), Mungania (2003), Sambrook (2003), Romiszowski (2003), Romiszowski (2004), Childs et al (2005), Muilenburg and Berge (2005), Lum (2006), Wong (2007), Partow-Navid and Slusky (2009) ,
	Policies	Romiszowski (2003), Childs et al (2005), Mungania (2003), Romiszowski (2004), Wong (2007), Partow-Navid and Slusky (2009) , St.Amant, K. (2009), Correia and Sarmiento (2009)
	Need assessment	Galusha (1997), Mungania (2003), Childs et al (2005), Partow-Navid and Slusky (2009) , Stepich et al (2009), Baylen and Zhu (2009),



	Readiness assessment	Romiszowski (2003), Packham et al (2004), Childs et al (2005), Lum (2006), Partow-Navid and Slusky (2009) , Baylen and Zhu (2009)
	Organization change	Galusha (1997), Childs et al (2005), Lum (2006), Wong (2007), Baylen and Zhu (2009), Cronje (2009).
	Budgeting and return on investment	Galusha (1997), Romiszowski (2003), Romiszowski (2004), Cronje (2009).
	Program and course information catalog	Mungania (2003), Packham et al (2004), Childs et al (2005), Park and Choi (2009).
	Financial aid	Mungania (2003), Sambrook (2003), Packham et al (2004),Cronje (2009).
	Instructional design	Wang (2003), Sambrook (2003), Wong (2007), Partow-Navid and Slusky (2009) , Baylen and Zhu (2009)
	Intellectual property rights	Childs et al (2005), Partow-Navid and Slusky (2009)
Management Issues	Project Manager's skills	Mungania (2003), Romiszowski (2004), Sambrook (2003), Muilenburg and Berge (2005), Cronje (2009).



	Managing content development process	Muilenburg and Berge (2005), Park and Choi (2009), Partow-Navid and Slusky (2009)
	Updating and monitoring of E-learning environment	Mungania (2003), Muilenburg and Berge (2005), Park and Choi (2009),
	Security measures	Romiszowski (2004), Webster and Murphy (2008)
Technological Issues	Infrastructure Planning	Lytas and Pauloudi (2001), Sambrook (2003), Romiszowski (2003), Romiszowski (2004), Muilenburg and Berge (2005), Childs et al (2005), Wong (2007), Webster and Murphy (2008), Cronje (2009), Correia and Sarmiento (2009), Baylen and Zhu (2009)
	Hardware issue	Galusha (1997), Mungania (2003), Sambrook (2003), Muilenburg and Berge (2005), Childs et al (2005), Gulatee and Combes (2007), Wong (2007), Correia and Sarmiento (2009), Baylen and Zhu (2009)
	Software issue	Galusha (1997), Mungania (2003), Sambrook (2003), Romiszowski (2004), Muilenburg and Berge (2005), Childs et al (2005), Wong (2007), Gulatee and Combes (2007), Webster and Murphy (2008).



Pedagogical Issues	Content analysis	Packham et al (2004), Partow-Navid and Slusky (2009) , St.Amant, K (2009), Correia and Sarmiento (2009), Baylen and Zhu (2009)
	Audience analysis	Mungania (2003)
	Goal analysis	Packham et al (2004)
	Presentation	Sambrook (2003)
	Discussion	Lum (2006)
User Interface design	Content design	Galusha (1997), Romiszowski (2003), Wang (2003), Packham et al (2004), Childs et al (2005), Lum (2006), Wong (2007), Sheard (2008), Partow-Navid and Slusky (2009) , Baylen and Zhu (2009), Park and Choi (2009), Cronje (2009).
	Page and site design	Wang (2003), Romiszowski (2003), Wong (2007), Rogers and Wang (2008), Baylen and Zhu (2009)

	Navigation	Mungania (2003), Romiszowski (2003), Childs et al (2005), Webster and Murphy (2008), Correia and Sarmiento (2009)
	Accessibility	Mungania (2003), Romiszowski (2003), Sambrook (2003), Wong (2007).
Resource support issues	Instructional and counseling support	Galusha (1997), Romiszowski (2003), Mungania (2003), Romiszowski (2004), Muilenburg and Berge (2005), Lum (2006), Correia and Sarmiento (2009), Baylen and Zhu (2009), Cronje (2009).
	Online and offline resources	Wang (2003), Mungania (2003), Romiszowski (2003), Romiszowski (2004), Packham et al (2004), Wong (2007), Webster and Murphy (2008), Boondao et al (2008), Baylen and Zhu (2009)
	Technical support	Mungania (2003), Childs et al (2005), Romiszowski (2004), Gulatee and Combes (2007), Correia and Sarmiento (2009), Baylen and Zhu (2009)
Evaluation issues	Evaluation of E-learning environment	Mungania (2003), Childs et al (2005), Lum (2006), Wong (2007)



	Evaluation of E-learning content development	Romiszowski (2003), Childs et al (2005).
Ethical issues	Geographical diversity	Galusha (1997), Romiszowski (2003), Mungania (2003), Packham et al (2004), Romiszowski (2004), Childs et al (2005), Holmes et al (2005), Lum (2006), Gulatee and Combes (2007).
	Social and political influence	Romiszowski (2003), Childs et al (2005), Muilenburg and Berge (2005), Holmes et al (2005), Lum (2006), Gulatee and Combes (2007), Cronje (2009), Park and Choi (2009),
	Educational cultural background differences	Mungania (2003), Holmes et al (2005) , Webster and Murphy (2008), Boondao et al (2008) (2008), Rogers and Wang (2008).
	Learner diversity	Mungania (2003), Packham et al (2004), Muilenburg and Berge (2005), Holmes et al (2005), Lum (2006).
	Educational value differences	Galusha (1997), Lum (2006), Boondao et al(2008), Holmes et al (2005) , Rogers and Wang (2008)



	Cultural communication differences	Mungania (2003), Rogers and Wang (2008), Partow-Navid and Slusky (2009) , Boondao et al(2008)
	Different language usages	Holmes et al. (2005) , Lum (2006), Rogers and Wang (2008), Boondao et al(2008).
	Cultural diversity	Packham et al. (2004), Muilenburg and Berge (2005), Holmes et al (2005), McIntosh D. (2006), (Stepich et al., 2009), (St.Amant, 2009)
	Legal issues	Mungania (2003), Sambrook (2003)
	Bias	Lum (2006)
Organizational Culture	--	Mungania (2003), Holmes et al. (2005), McIntosh (2006), Boondao et al. (2008), Rogers and Wang (2008), St.Amant (2009), Stepich et al. (2009), Lemone (2009), Park and Cho (2009).