A Mixed Method Study for Investigating Critical Success Factors (CSFs) of E-Learning in Saudi Arabian Universities

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Abstract—**Electronic Learning (E-Learning) in the education system has become the obvious choice of the community over the globe because of its numerous advantages. The main aim of the present study is to identify Critical Success Factors (CSFs) and validate them for successful implementation of the E-Leaning at Saudi Arabian Universities. This study developed a multi-dimensional instrument for measuring the E-Learning CSFs in the higher educational institutions of Saudi Arabia. The study reviewed various CSFs from literature and identified most important E-Learning CSFs which are described and grouped in five dimensions such as Student, Instructor, Design and Contents, System and Technological, and Institutional Management Services. The 36 CSFs falling under these relevant dimensions were then validated their importance quantitatively through university Students, Instructors, and E-Learning staffs of some well-known universities in Saudi Arabia. A survey instrument was developed and tested on a sample of 257 respondents of Saudi Arabia Universities. It was found that System and Technological dimension is the most significant as perceived by respondents. Results of the study discovered that all obtained factors are highly reliable and thus would be useful to develop and implement E-Learning systems.**

Keywords—*Critical Success Factors (CSFs); Content Reliability and Collected Mean; E-Learning, Kingdom of Saudi Arabia. Quantitative Analysis*

I. INTRODUCTION

E-Learning has become a novel means of learning trend in current years. It can provide amusing resources than the traditional classroom to enhance ease of learning-learning. E-Learning also overcomes the restrictions of time and space of traditional physical teaching. It allows users to study independently, with freedom with lesser or negligible interference [1]. However, if the E-Learning system is not followed correctly, it may not deliver the required quality education. Critical Success Factors (CSFs) play a vital role in enhancing the quality of the E-Learning organization. CSF came into a scenario in the literature when the comparison was made between some establishments, and the study was conducted to explore the components for success. The organization needs to hold CSFs well to have a successful implementation and also to measure CSFs as variables which are essential for the phase implementation [2]. CSFs are the variables that are required to measure in the phase of planning to ensure the process of execution. Hence, it is essential to verify, control, and measure to dictate the success of an entire system which results into achieving the quality standards of E-Learning. The rapid growth of science leads to the new advancement of carrying learning content and enabling learner-instructor communication. It is achieved globally using computer network acknowledged as E-Learning, educational revolution caused with the impact upon education all around the world [3]. It is very importance to study the critical success factors of E-Learning system, as well as to find the barriers of the E-Learning education system, and what enables the E-Learning education system. The measure of successful implementation of E-Learning should incorporate different concepts and constructs to evaluate this success [1]. Any instrument that measures and identifies E-Learning CSFs from user or stakeholders' perception holds a significant importance for practitioners and researchers in the field. Educational institutions are also motivated to develop state-of-the-art E-Learning systems that fulfil the expectations of Students and Instructors.

The main objectives of the present study are to investigate important factors for the successful implementation of E-Learning especially for Saudi Arabian Universities where researchers are involved practically in this filed. Kingdom of Saudi Arabia (KSA) is also embarking on E-Learning like other countries of the world because of the need of time and demand. It is the right time to investigate the critical success for Saudi E-Learning industry for its successful implantation.

The paper organization is as: Section 2 discusses related literature. Section 3 presents a description of the research

methods and procedures used in generating the indicators of each E-Learning CSFs. In Section 4, the finding and results are discussed. Discussion and conclusions with future work are discussed in the last section of the paper.

II.   LITERATURE REVIEW

A.   E-Learning

E-Learning is becoming very important and gradually popular approach in higher educational institutions over the teaching and learning world because of its ability of resource sharing, cost effectiveness, flexibility, and easy availability of the World Wide Web (WWW). Ease of using the E-Learning technology tools through web resources, means of choice for distance education and professional training has made the E-Learning technology extremely popular. In addition, to provide comfortable resources as compared to the traditional physical classroom teaching-learning, E-Learning also breaks the boundaries of time and space that limits the of traditional teaching-learning. E-Learning also allows independent learning that is free from direct observation of traditional teaching [1]. [4], view E-learning as "In a knowledge and information society, E-Learning is built on the extensive use of advanced information and communication technologies to deliver instructions". [5] refer E-Learning as, "the use of various technological tools that are web based, web distributed, or web capable for the purposes of education". [6] defined E-Learning as, "the use of Information and Communication Technology to enhance and support learning in tertiary education". [7] refers, "E-Learning as the wide set of applications and processes, which uses available electronic media and tools to deliver vocational education and training". Open and Distance Learning Quality Council of UK states "E-Learning to be an effective learning process created by combining digitally delivered content with learning support and services". [8] considered E-Learning as, "an electronically mediated interaction". Other terminologies, such as: online education, online learning, E-Education, M-Learning, and open and distance learning are used for the term E-Learning in different research studies.   [9] highlighted that; E-Learning in the education system has become the obvious choice of masses over the globe because of its numerous advantages. However, E-Learning system may not deliver the required quality education if not followed and utilized correctly. The Kingdom of Saudi Arabia (KSA) is the largest Arab country by land in Western Asia which occupies a major part of the Arabian Peninsula, with the Persian Gulf to the east, the Gulf of Aqaba and the Red Sea in the west.   In 1975, the Saudi Arabian government formed Ministry of Higher Education to supervise country's Higher Educational System. The Ministry set long-term objectives and plans with huge resources to provide skilled manpower to look after the nation's increasing economy, both in government, and private sectors. The Saudi Ministry of Higher Education also accepted the high possibilities and need of E-Learning in public universities, where there is a scarcity of female staff members in the gender based institutions. A large number of students also interested and desire for studying part time to get better employment [10] [11].

B.   E-Learning Critical Success Factors (CSFs)

In the late 1970s, CSF appears in literature because of the problem about the indication of some establishments which seemed to be more fortunate and successful comparing with others. The research was conducted to study about the success components of some successful business (Ingram et al., 2000). CSF is considered as an important factor for fulfilling organizational mission and vision. It also can be said that due to lack of these factors, the organizational mission can be failed [12]. A number of CSF definitions were acquainted with several kinds of literature. [13] explained the CSF concept as, "… the limited number of areas in which results, if they are satisfactory, will ensure successful competitive performance for the organization. They are the few key areas where 'things must go right' for the business to flourish". In the year 1988, Freund presented CSFs as, "those things that must be done if a company is to be successful". CSFs must be limited in numbers, and should be measurable and controllable. [14] proposed that CSFs should be treated as a model or framework for strategic planning in directing stakeholders to determine the elements which should be treated right in succeeding the targeted goals and objectives. [2], studied about CFS and considered the term as the variables which are essential for the success in the stage of implementation. So, in order to achieve a fruitful implementation, an organization has to handle CSFs very well. The previous definition proves that, CSFs are the features and variables which must be treated carefully throughout the planning phase to confirm the robust execution of a project. Consequently, CSFs should be verifiable, measurable, and controllable to ensure the success of the whole system. In short, to achieve the success of an organization, CSFs must be taken care of in a critical manner. Many researchers have tried to know the reasons for E-Learning success or failure. Therefore, many factors exist to determine the success of E-Learning. As [14] pointed out, many projects on E-Learning failed because of unawareness of their main objectives and goals, resulting many to question on the capabilities, quality and electronic form of education. According to [2], the complete recognition of the factors which are important and influence effectiveness of E-Learning systems will help and facilitate institutions towards added funding. It also reduces the waste of funding and efforts on non-productive factors. Finally, the research that leads to uncovering the E-Learning CSFs will be critical to understanding the crux of E-Learning effectiveness and success.

III.   METHODS AND PROCEDURE

To achieve the objective of the study, i.e. investigation of CSF for the successful and effective E-Learning implementation at Saudi Arabian universities, a mixed method was used. At the beginning of the study, recent literature was reviewed in detail and analysed to determine and conclude the items relevant to Critical Success Factors (CSFs) with different dimension through content analysis qualitative techniques. A total of 64 papers, published during 2005-2016, were selected from IEEE, Emerald Publishers, ScienceDirect, Taylor and Francis, Springer, and Google scholar databases. The methodology adopted for the present research were analysed

and synthesized using one of the popular qualitative techniques with content analysis.

Later, to validate the extracted factors, a survey approach was used involving 247 staff members of different universities in Saudi Arabia. SPSS (Statistical Package for the Social Sciences) v22 Windows software program is used to analyse the responses of the survey. In the beginning, the initial design draft of the survey instrument was reviewed by four experience staff members with more than 5 years of experiences in teaching and managing E-Learning courses to establish the content validity of the instrument. The survey comprises of two main parts. First part contains demographic questions on the association of E-Learning, Gender, College of Teaching or Studying, E-Learning experience (number of years as an E-Learning user), Designation, University name, Purpose and Frequency of using E-Learning teaching, and University. The second part is divided into five dimensions, namely: Student, Instructor, Design and Contents, System and Technological dimension, and Institutional Management Service with 36 factors of CSFs. The survey consists of five-point scale items (1 for Not Important, 2 for Slightly Important, 3 for Moderately Important, 4 for Important, and 5 for Very Important)

A. Content Validity Analysis

Initially the survey instrument was sent and reviewed by four experienced instructors to check on the following issues:

1) The importance of the Dimensions and Factors to the E-Learning success

2) The degree of the clarity, content, and difficulty of the items

The experienced instructors have agreed that the items are applicable based on the current research objectives and the items are representative to check the importance of the factors for successful E-Learning and its effectiveness.

Table 1 shows the experienced instructors' rating opinion on the content validity of each dimension. Only items from the survey which are rated by the experts as "Agree" and "Strongly Agree" are selected in calculating the Content Validity Index (CVI). As all four experts rated "Agree" or "Strongly Agree" on all the items in the survey, the overall content validity index is 1.00.

B. Reliability Analysis

Reliability is normally defined by measuring the internal uniformity of components with the uses of Cronbach's alpha (α), which is commonly used to measure the inner consistency. It presents integrity strength of a set of items in a group or dimension. The factor is carefully weighed as a degree of scale reliability. A high value of Cronbach's alpha (α) does not indicate the degree as uni-dimensional. To evaluate inner consistency, the value of alpha will provide evidence of the scale as uni-dimensional and additional examinations or research may be conducted on the point. Another method, known as exploratory factor analysis, is used to check the dimensionality. Basically, the Cronbach's alpha (α) is not representing a statistical value. The alpha is nothing but a coefficient of consistency or reliability. The alpha (α) which is presented in Eq. (1), is a function of test item number (N) and an average of inter-correlation.

TABLE I.   EXPERIENCED INSTRUCTORS' RATING ON THE CONTENT VALIDITY OF EACH DIMENSION

Items	Instructors 1	Instructors 2	Instructors 3	Instructors 4	CVI
Student's Dimension	√	√	√	√	1.00
Instructor's Dimension	√	√	√	√	1.00
Design & Contents' Dimension	√	√	√	√	1.00
System and Technological Dimension	√	√	√	√	1.00
Institutional Management Dimension	√	√	√	√	1.00

$$\alpha = \frac{N.\bar{c}}{\bar{v}+(N-1).\bar{c}} \qquad (1)$$

Here, N is presenting the item number, $\bar{v}$ is presenting the average variance, and $\bar{c}$ is indicating the average inter-item covariance of the test items.

It is clearly seen from Eq. (1) that, if the number of items (N) is increased by some value, Cronbach's alpha (α) will increase. On the other hand, with the decreasing value of average inter-item correlation, Cronbach's alpha (α) will be decreased. Moreover, with the increment of the average value of inner-item correlation, the alpha value will be in increasing as well.

High reliability exists in the instrument with the value of 0.982 based on 36 items, which is transcending the level of minimum value (0.80). Table 2 shows the Cronbach's Alpha reliability coefficient for each of the five Dimensions: Student = 0.891, Instructor = 0.941, Design and Contents = 0.946, System and Technological = 0.928, and Institutional Management Service = 0.921.

TABLE II.   RELIABILITY ANALYSIS CRITICAL SUCCESS FACTOR

Dimensions	No of Items	Cronbach's Alpha
Students' Dimension	7	0.891
Instructors' Dimension	7	0.941
Design & Contents Dimension	8	0.946
System and Technology Dimension	8	0.928
Institutional Management Service	6	0.921
Total	36	0.982

(Source: Calculation from Primary data using SPSS 22.0)

IV. REULTS AND DISCUSSIONS

After reviewing the detailed literature, the study identified 36 most important E-Learning CSFs which were grouped in five dimensions having the same theme such as: 1) Student, 2) Instructor, 3) Design and Contents, 4) System and Technological Factor, and 5) Institutional Management Service. Each dimension included several factors that can be explained as follows:

A. Students' Dimension

"An E-Learning system is the student centred approach in which students are the main stakeholders and perceived beneficiaries from the system" [15]. Students recognise benefits using E-Learning systems. Without proper usages of the E-Learning, this system has no value. Students have become more active and advance while the demand for education awareness is increasing. For example, there are lots of new demand coming for formal education from non-traditional female students with grown children, full-time students who work part-time during their off time, and enthusiastic part-time students who work full time. For satisfying and getting benefits from E-Learning, student's factor is considered as important. Various individualities of student have great prospective to influence E-Learning system. Table 3 shows the important factors that are falling under the student's dimension from different resources.

TABLE III. CRITICAL SUCCESS FACTOR (CSFs): STUDENT'S DIMENSION

Factors	Resources / References
Students' Attitude and towards E-Learning	[16], [17], [18], [19], [20], [21], [22], [23], [2]
Students' Motivation	[19], [24], [25], [26], [27], [28]
Computer Competency (ICT skills)	[16], [18], [17], [18], [19], [24], [25], [26], [22], [29], [2], [30], [3]
Computer Anxiety	[18], [20], [21]
Interaction with other Students	[16], [20], [31], [29], [29], [32], [2], [30]
Commitment	[20], [25], [26], [33]
Learners General and Internet Self-efficacy	[34], [35], [36], [20], [21], [37], [28], [3]

Quantitative analysis has been conducted on the data collected through questionnaire survey for Students' Dimension and is tabulated in Table 4. From the results obtained, it may be concluded that, the majority of the respondents who confirms the importance of factors responsible for successful implementation of E-Learning has the mean range value (3.04 to 3.61). The further conclusion can also be drawn from the Table 4 that, the highest mean value (3.61) is found for "Students' Motivation" which holds the place of a most significant factor for the successful implementation of E-Learning. Contrarily, "Interaction with other students" has the least mean value (3.04), thus become less significant for the successful implementation of E-Learning. The average mean value (3.32) is obtained for all factors in Student's Dimension.

TABLE IV. CRITICAL SUCCESS FACTOR (CSFs): STUDENT'S DIMENSION

Factors	Mean	N	Std. Deviation
Attitude towards E-Learning	3.35	257	1.353
Students' Motivation	3.61	257	1.316
Computer Competency (ICT Skills)	3.29	257	1.043
Computer Anxiety	3.07	257	1.104
Interaction with other Students	3.04	257	1.241
Commitment towards Online Studies	3.53	257	1.173
General Internet Self-Efficacy	3.32	257	1.118
Average mean	3.32	--	--

(Source: Calculation from Primary data using SPSS 22.0)

B. Instructors' Dimension

It is also an important dimension to assist towards student satisfaction of E-Learning. The effective and successful implementation of learning management systems is really based on the Instructors' attitude towards E-Learning execution. Mostly, student satisfactions and taking of online E-Education are influenced by teacher's teaching style, his approach towards conducting lectures in a friendly manner, and providing quality and useful content. Characteristics of the Instructors are important determinants that affect and influence the productivity and usefulness of learning management systems. Table 5 shows the factors with resources of this dimension.

TABLE V. CRITICAL SUCCESS FACTOR (CSFs): INSTRUCTORS' DIMENSION

Factors	Resources / References
Instructors' Attitude towards E-Learning	[16], [38], [18], [19], [36], [25], [21], [25], [26], [23]
Instructors' ICT Skills	[16], [38], [17], [19], [24], [20], [31], [25], [26], [22], [2],
Cultural Awareness	[39], [17], [40], [41]
Easy Language Communication	[20], [27], [23] [42],
Interaction with Students	[17], [20], [43], [25], [44], [26], [45], [22],
Appropriate Timely Feedback	[18], [20], [25], [21], [45] [22]
Self-Efficacy	[38], [34], [20], [22]

Quantitative analysis has been conducted on the data collected through questionnaire survey for Instructors' Dimension and is tabulated in Table 6. From the results obtained, it may be concluded that, the majority of the respondents who confirms the importance of factors responsible for successful implementation of E-Learning has the mean range value (3.29 to 3.70). The further conclusion can also be drawn from the Table 6 that, the highest mean value (3.70) is found for "Appropriate Timely Feedback" which holds the place of a most significant factor for the successful implementation of E-Learning. Contrarily, "Cultural Awareness" has the least mean value (3.29), thus become less significant for the successful implementation of E-Learning. The average mean value (3.55) is obtained for all factors in Student's Dimension.

TABLE VI.   CRITICAL SUCCESS FACTORS (CSFs): INSTRUCTORS' DIMENSION

Factors	Mean	N	Std. Deviation
Instructors' Attitude towards E-Learning	3.64	257	1.342
Instructors' ICT skills	3.60	257	1.205
Cultural Awareness	3.29	257	1.105
Easy Language Communication	3.61	257	1.126
Interaction with Students	3.58	257	1.144
Appropriate Timely Feedback	3.70	257	1.224
Self-Efficacy	3.45	257	1.114
Average	3.55	--	--

(Source: Calculation from Primary data using SPSS 22.0)

C. Design and Content's Dimension

Design and Content are the third dimensions which also considered as important and have a huge effect on the E-Learning success. Well designed and understandable courses and contents, learning materials and activity, and curriculum, facilitate meaningful educational experiences. User friendly interface and clear contents of online E-Learning course will affect student's pleasure and satisfaction. Table 7 shows the factors with resources of this dimension.

TABLE VII.   CRITICAL SUCCESS FACTOR (CSFs): DESIGN AND CONTENT'S DIMENSION

Factors	Resources / References
Interactive Learning Activity	[46] , [16], [34], [20], [22], [32], [47], [47]
Appropriate Course Design	[16], [20], [23], [48]
Use of Multimedia Instruction	[38], [34], [45],
User –Friendly Organized	[46], [18], [20], [25], [49], [50], [47]
Course Flexibility	[22], [50], [51]
Understandable Content	[20], , [25],[26], [22], [50], [50]
Sufficient Updated Content	[25], [26], [40], [47]
Perceived Ease of Use	[18], [49], [21], [32], [47]

Quantitative analysis has been conducted on the data collected through questionnaire survey for Design and Contents' Dimension and is tabulated in Table 8. From the results obtained, it may be concluded that, the majority of the respondents who confirms the importance of factors responsible for successful implementation of E-Learning has the mean range value (3.32 to 3.71). The further conclusion can also be drawn from the Table 8 that, the highest mean value (3.71) is found for "User –Friendly Organized" which holds the place of a most significant factor for the successful implementation of E-Learning. Contrarily, "Course Flexibility" has the least mean value (3.32), thus become less significant for the successful implementation of E-Learning. The average mean value (3.55) is obtained for all factors in Student's Dimension.

TABLE VIII.   CRITICAL SUCCESS FACTOR (CSFs): DESIGN AND CONTENTS' DIMENSION

Factors	Mean	N	Std. Deviation
Interactive Learning Activity	3.55	257	1.369
Appropriate Course Design	3.68	257	1.317
Use of Multimedia Instruction	3.52	257	1.094
User –Friendly Organized	3.71	257	1.184
Course Flexibility	3.32	257	1.121
Understandable Content	3.65	257	1.157
Sufficiently Updated Content	3.42	257	1.200
Perceived Ease of Use	3.53	257	1.163
Average	3.55	--	--

(Source: Calculation from Primary data using SPSS 22.0)

D. System and Technological Dimension

System and Technology play a significant role in providing learning outcomes, as the students cooperate more in the E-Learning environs through Internet Technology [52]. In an E-Learning environment, students also use other tools, such as: video or audio conferencing and text messaging or chat, more than the traditional conversation or face-to-face instruction. To acquire successful implementation of E-Learning system and obtain students' satisfaction with the system, there should be a great quality in technological attributes. Table 9 shows the factors with resources of this dimension.

TABLE IX.   CRITICAL SUCCESS FACTOR (CSFs): SYSTEM AND TECHNOLOGICAL DIMENSION

Factors	Resources / References
Appropriate System	[46], [44], [45],[23]
Ease of Access	[16], [48], [48]
Technical Support for Users	[22], [21], [27], [45], [2], [51], [53], [47],
Good Internet Speed	[16], [17], [18], [19], [21], [45], [29], [33] [22], [48],[3]
Efficient Technology Infrastructure	[16], [18], [31], [43] [29], [48], [54], [26], [23], [51], [48], [30], [42], [41], [55], , [3]
Ease of Use	[20], [25], [29], [22], [47], [50], [47], [56]
Reliability	[20], [25], [22], [56], [26], [45], [29], [23],[33], [51], [50], [47]
Network Security	[31], [25], [26], [51], [50], [3]

Quantitative analysis has been conducted on the data collected through questionnaire survey for System and Technological Dimension and is tabulated in Table 10. From the results obtained, it may be concluded that, the majority of the respondents who confirms the importance of factors responsible for successful implementation of E-Learning has the mean range value (3.31 to 3.93). The further conclusion can also be drawn from the Table 10 that, the highest mean value (3.93) is found for "Good Internet Speed" which holds the place of a most significant factor for the successful implementation of E-Learning. Contrarily, "Network Security" has the least mean value (3.31), thus become less significant for the successful implementation of E-Learning. The average mean value (3.63) is obtained for all factors in Student's Dimension.

TABLE X. CRITICAL SUCCESS FACTOR (CSFs): SYSTEM AND TECHNOLOGICAL DIMENSION

Factors	Mean	N	Std. Deviation
Appropriate System	3.57	257	1.324
Ease of Access	3.61	257	1.298
Technical Support for Users	3.78	257	1.125
Good Internet Speed	3.93	257	1.188
Efficient Technology Infrastructure	3.70	257	1.124
Ease of Use	3.59	257	1.136
Reliability	3.54	257	1.139
Network Security	3.31	257	1.309
Average	3.63		

(Source: Calculation from Primary data using SPSS 22.0)

E. Institutional Management Service Dimension

Institutional Management Service dimension addresses organizational support for successful E-Learning. Following are the important factors related to Institutional Management Service. Table 11 shows the factors with resources of this dimension.

TABLE XI. CRITICAL SUCCESS FACTOR (CSFs): DESIGN AND CONTENT'S DIMENSION

Factors	Resources / References
Infrastructure Readiness	[39], [35], [43], [25], [45], [23], [2],
Financial Readiness	[20], [43], [25], [26], [51], [40],
Training for User	[39], [23], [2], [51], [53], [40]
Support for Faculty	[19], [24], [2]
Ethical & Legal Issues	[20]
Proper feedback	[35], [25], [26], [23]

Quantitative analysis has been conducted on the data collected through questionnaire survey for Institutional Management Dimension and is tabulated in Table 12. From the results obtained, it may be concluded that, the majority of the respondents who confirms the importance of factors

responsible for successful implementation of E-Learning has the mean range value (3.37 to 3.74). The further conclusion can also be drawn from the Table 12 that, the highest mean value (3.74) is found for "Training for User" which holds the place of a most significant factor for the successful implementation of E-Learning. Contrarily, "Ethical and Legal Issues" has the least mean value (3.37), thus become less significant for the successful implementation of E-Learning. The average mean value (3.58) is obtained for all factors in Student's Dimension.

TABLE XII. CRITICAL SUCCESS FACTOR (CSFs): INSTITUTIONAL MANAGEMENT DIMENSION

Factors	Mean	N	Std. Deviation
Infrastructure Readiness	3.51	257	1.355
Financial Readiness	3.64	257	1.379
Training for User	3.74	257	1.161
Support for faculty	3.73	257	1.160
Ethical and Legal Issues	3.37	257	1.132
Proper feedback	3.46	257	1.186
Average	3.58	--	--

V. CONCLUSION

Authors have developed a multi-dimensional instrument for measuring the E-Learning CSFs in the higher educational institutions of Saudi Arabia. 36 CSFs which are the most significant in effective and successful E-Learning implementation in Saudi Higher Educational Institutes were derived from literature. Present research identifies E-Learning variables and their effect on the use of E-Learning and its successful implementation. The findings from the content validity analysis and reliability analysis of the instrument indicate the high validity and reliability of the system. Thus, researchers may suggest taking care of these factors during the implementation of E-Learning systems. Data collected from this study and previous researches reflect differences in Cronbach's alpha values. This may be because of the respondent's background, curricula, culture, facilities, or the items used in the instrument. This study considers all five dimensions of E-Learning, which are Student, Instructor, Design and Contents, System and Technological Dimension, and Institutional Management Service. It was found that System and Technological Dimension having mean 3.63 is the most significant while Students' Dimension having mean 3.32 is least significant as perceived by respondents. Moreover, Good Internet Speed Factor having mean 3.93 is most significant among all thirty-six factors while Interaction with other Students is least significant with mean value as 3.04. This study reviewed the most important CSFs for E-Learning acquired from the extensive literature survey and developed a survey instrument for the effectiveness of E-Learning system. It can be concluded that, Student, Instructor, Design and Contents, System and Technological dimensions, and Institutional Management Service are the most important success factor dimensions to influences the usages of E-Learning systems. Thus institutions may be recommended that, they should provide more attention to the identified factors of

E-Learning to ensure successful implementation of an E-Learning system. The questionnaire used in this study focuses on the perceived effect of each factor dimension based on overall E-Learning effectiveness. It is further, recommended to make use of the present developed instrument in various contexts for the purpose of developing, implementing, and assessing E-Learning systems in a meaningful way. Another prospective could be the implementation of an E-Learning model, and investigating its learning effectiveness. Furthermore, the factors incorporating all the five dimensions can be prioritized to find more effective factors. Assessment of critical success factors contributes significantly to effective E-Learning process. However, the influence of such CSF may vary from region to region depending on the social, economic, and geographical conditions of a country. In this research, assessment and prioritization have been established in the KSA.

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