

# A STUDY ON IMPROVISED MODELS FOR E-LEARNING SYSTEM SUCCESS

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**Abstract :** In the era of web, universities and higher education institutions are increasingly growing in tendency to offer e-learning. Electronic learning (e-learning) has been extensively used as a complement subject against ancient learning techniques. It is one of the current development and major technological enhancements in Information Technology. E-learning system can facilitate organizations to reap the benefits of an integrated approach to expand e-learning exercise. An e-learning approach will help quick learning by building online information repositories, much like lessons found and better follow structures take maximum advantage of coaching work. The success measure elements should be diagnosed effectively with efficiency for measuring the success of an e-learning system, and it can be measured for any institutions that implements e-learning systems. The study relies on the Information System Success model and extends the model to analyze e-learning systems success measurement factors in growing international locations. It explores and develops measurement factors version for e-learning systems structures. This study ought to be important for instructors while planning and imposing e-learning projects, higher education institutions management, e-learning systems designers and suppliers.

**Index Terms - E-learning, E-learning systems success, Measuring e-learning success, User satisfaction.**

## I. INTRODUCTION

E-learning is an “innovative way to education conveyance by means of electronic forms of data that upgrades the learner’s knowledge, skills, aptitudes or other performance”. An e-learning methodology will exploit coaching and facilitated learning by building online knowledge repositories, such as lessons learned and best practice systems. It is necessary to determine measurement factors model to evaluate e-learning systems success. So the key objective of the study is to investigate/recognize measuring factors model for e-learning systems success. Estimating the success of systems is critical to understand the value, effect of management operations and investment on them.

Since 1992, several research analysis have been inspected the success of different information systems and measured it experimentally. So, different factors have been distinguished for the success of information systems because success of e-learning systems is not measurable with a single factor like user satisfaction. In this paper, a comprehensive model is conferred to measure the success of e-learning systems. After so many years various models have been implemented, advancements and changes are made from its original version, researchers think that something must be done to evaluate it. One of the reasons is the development of ICTs is so fast from time to time.

## II. LITERATURE REVIEW

**Yonas Hagos, Dr. Monica Garfield and Dr. Salehu Anteneh** - “Measurement Factors Model for E-Learning Systems Success”. It explores to effectively and efficiently evaluate the success of an e-learning system, success measurement factors must be identified and measured for any university that implements e-learning systems. To perform this study both qualitative and quantitative research methodologies are used. The theoretical framework used in this study is the Information System Success (ISS) model, because the DeLone and McLean framework is widely accepted as one of the more complete IS evaluation framework which has six interrelated dimensions of IS success. The additional construct defined in the model is “Computer Self-Efficacy” (CSE).

**Nidjo Sandjojo and Tenia Wahyuningrum**- “Measuring E-Learning Systems Success: Implementing D & M IS Success Model”. It is a quantitative research and the objective is to measure the factors for e-learning system success. A part of Technology Acceptance Model (TAM) and the modified DeLone & McLean Information Systems Success (ISS) Model are adopted in this study. In this paper, they try to determine the information success by identifying six critical variables that are System Quality, Information Quality, Service Quality, Use & Intention to Use, User Satisfaction and Net Benefit. TAM was developed to find out the factors that lead the users either accept or reject information technology. It posits the two particular beliefs, Perceived Usefulness and Perceived Ease of Use.

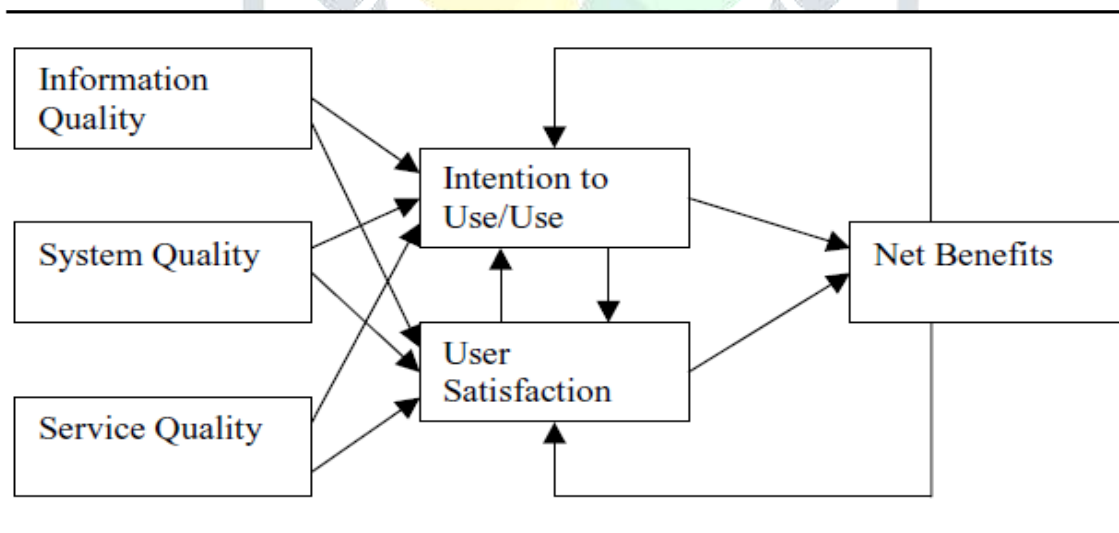
**Alireza Hassanzadeh, Fatemeh Kanaani and Shaban Elahi** - “A model for measuring e-learning systems success in universities”. In this paper, by combining models and previous studies, a model for measuring e-learning systems success entitled “MELSS” is presented. In this they have tried to resolve the weaknesses of previous models and to reinforce the strength of them. Based on the results of experts questionnaire, components such as technical system quality, user loyalty to system, content and information quality, educational system quality, user satisfaction, service quality, intention to use, benefits of using system and goals achievement are suitable for measuring success of e-learning systems. After finalizing the indicators of conceptual model, based on alumni, students and instructors opinions in universities, MELSS model is generated and its fitness was confirmed.

**Lorna Uden and Ernesto Damiani** - “The future of E-Learning: E-Learning ecosystem”. This paper outlines how the organizations can attain the benefits of an integrated approach to develop e-learning systems with the help of e-learning ecosystem and also the limitations of current e-learning systems. A successful e-learning system should have these contextual elements like Environment, Content, Teaching skills, Support, Instructor, Subject matter skills, Technology, Organization. E-Learning ecosystem is the term used to identify all the components necessary to execute an e-learning solution. Those components will fall into three categories: Consultants, Content Providers and Infrastructure.

### III. RESEARCH METHODOLOGY

The updated DeLone and McLean’s Information Systems referred as D & M IS model can be used for measuring e-learning systems success. As e-learning systems are different kinds of information systems, learners use these systems for learning. When tried to use models and concepts mentioned in the same researches, by taking under consideration the views of instructors, students and alumni and improvise a model for measuring e-learning systems success, adding to the richness of previous researches. By analyzing previous researches, the initial conceptual model is presented. The updated D & M model, in which the modified six dimensions: system quality, information quality, service quality as independent variables, usage and user satisfaction as inter mediate variables and net benefits are as dependent variable. Out of these the net benefits variable is the most important one.

A system will be evaluated in terms of information, system, and service quality; these characteristics have an effect on the use or intention to use and user satisfaction. As a result of using the system model, certain benefits will be achieved. The net benefits can influence user satisfaction and the other use of the information system. The ISS model is employed as a theoretical framework for this study. This is mainly because D&M framework is widely accepted as one of the complete IS evaluation frameworks and has been used generously in empirical research as a useful model for organizing IS success measurements. The model additionally permits to evaluate the success of IS at different levels system, individually and organizationally.



**FIGURE 1:** DeLone and McLean’s updated information systems success model [9].

**System Quality:** System Quality is expressed within the system’s overall performance. DeLone and McLean describes system quality as the desired attributes of the information system itself which constructs the information. System quality is measured based on the ease-of-use, integration, data quality, reliability, functionality, flexibility, portability and importance. According to Petter et al. [6], system quality as the desirable of an information system has several components such as ease of use, system flexibility, system reliability, and ease of learning.

**Information Quality:** Information quality refers to the needed characteristics of the information that the IS cause DeLone and McLean. Petter et al. [6], explains information quality as the required characteristics of the system outputs, which is, management

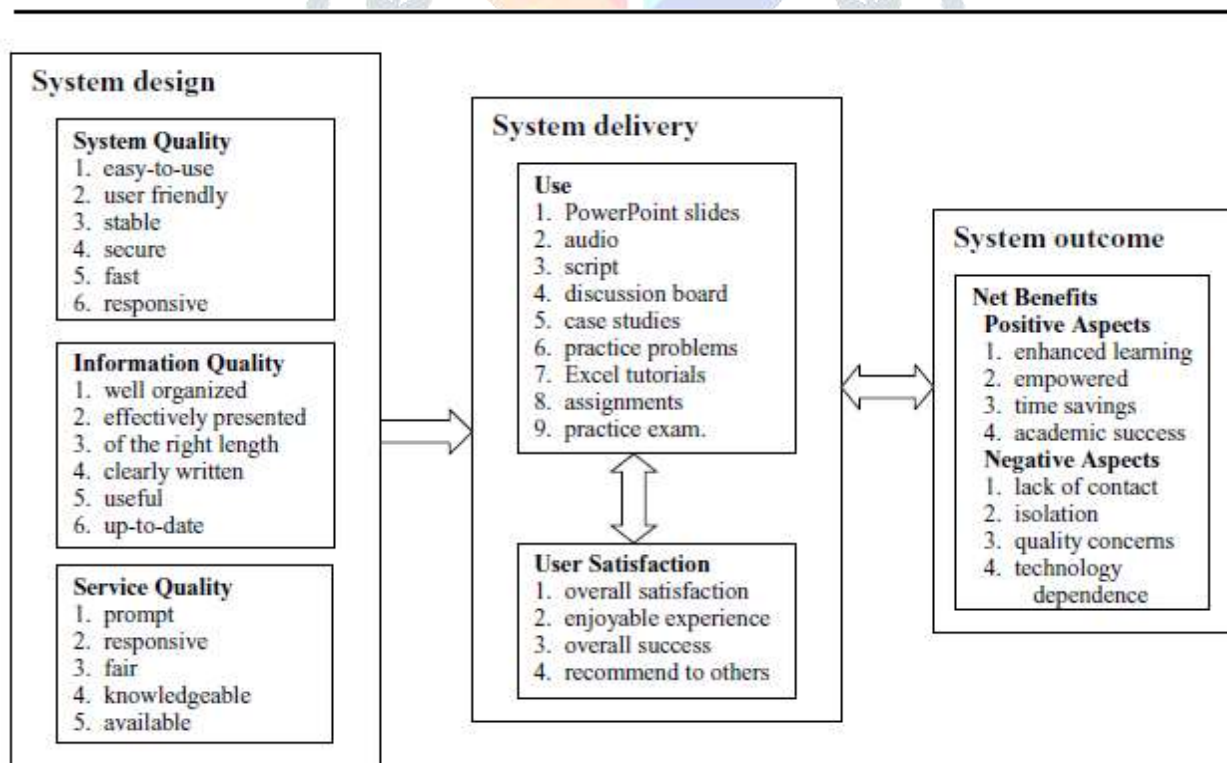
reports and Web pages. Information quality refers to the standard of the data that the system is able to store, produce or deliver. It is one amongst the most common dimension along which information systems are evaluated. Information quality are measured in terms of accuracy, relevance, completeness, timeliness and consistency. The quality of the information will determine user satisfaction. According to Elpez and Fink [7] information technology has become a tool which generate reliable, accurate and timely information through the information systems development. With the opinion of Petter et al. [6] measuring information quality consists of relevance, conciseness, understandability, accuracy, timeliness, completeness, currency and usability. Information quality is seen as a key dimension of user satisfaction.

**Service Quality:** Service Quality is expressed as the overall support delivered by service suppliers. In spite of this support distributed by the IS department, a new organizational unit, or outsourced to an online service provider is provided. According to Petter et al. [6] there are four main components of service quality, which are assurance, responsiveness, reliability, and empathy.

**Use & Intention to Use:** Usage discovers everything from a visit to a website, to execution of a transaction, to navigation within the site, to information retrieval. The systems use is one of important attribute to measure the e-learning benefit which is also an intention to use.

**User Satisfaction:** User satisfaction indicates the user’s level of satisfaction with the web sites, reports and support services. DeLone and McLean[2] explicit that user satisfaction is the most commonly used measure of IS success and the major reason is that the appeal of satisfaction as a success measure is that most of the other measures are so poor; they are conceptually weak or empirically difficult to achieve. User satisfaction can be explained as the summary of a person’s feelings or attitudes towards many factors affecting that specific situation. In other researches, User Satisfaction was seen as students’ opinions on using the e-learning and its environments.

**Net Benefit:** Net benefits concern to the extent to which IS are affording to the success of individuals, groups, industries, organizations and nations. Some of the examples are: improved decision-making, increased sales, cost reductions, consumer welfare, creation of jobs, improved profits, market efficiency, increased productivity and economic development[2]. Net benefits is the most important attribute for success measures as they capture the balance of positive and negative impacts of our customers, economies, suppliers, markets, employees, organizations, industries, and even our societies. Even though net benefit was the most important attribute but it cannot be understood and analyzed without other success attributes like system quality, information quality, and service quality measurements. In this, the net benefit defines to the e-learning benefit, because when measuring net benefits, it can use the same measure on benefit of the e-learning contents.



**FIGURE 2:** The E-Learning Success Model and sample metrics [9].

DeLone and McLean’s updated success model forms the premise for the E-Learning Success Model[9], depicted in Figure 2. The E-Learning Success Model makes specific about the method approach to measuring and assessing success. The

model also includes success metrics discovered specifically for the e-learning context being investigated. This approach describes that the overall success of e-learning system depends on the attainment of success at each of the three stages of e-learning systems development: design, delivery, and outcome analysis. Success of the design stage is measured along with three success factor dimensions: system quality, information quality, and service quality. Success of the delivery stage is analyzed along with two success factor dimensions: use and user satisfaction. Finally, the net benefits dimension is discovered based on the success of outcome stage. The arrows shown in the figure 2 depict the interdependences within the three stages of success assessment. Success of system design is important to the success of system delivery, which, in turn, affects the success of system outcome. The success of system outcome, has an impact on the success of subsequent system delivery, as shown by the double arrow linking system delivery and outcome stages.

#### IV. CONCLUSION

From the findings and progress study based on literatures the measurement factors model for e-learning systems success in developing countries are decided. By combining models and former studies, a model for measurement systems success is conferred which forms the update for DeLone and McLean Information System Model. By using this model, we have tried to resolve the weaknesses of previous models and also reinforce the strength to the new model. This model can facilitate to develop a successful e-learning application for quick learning by building online information repositories. The validated measurement factors model for e-learning system success can help e-learning system designers and providers, course instructors of developing countries in evaluating their e-learning systems success. By use of the success measuring factors model of e-learning systems, higher level educational institutes are able to synchronize their strategic goals with the educational objectives of scholars and also to justify the Information Technology investments for optimal utilization of technology.

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