## ORIGINAL ARTICLE

# Empirical investigation of e-learning acceptance and assimilation: A structural equation model

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**Abstract** E-learning has become progressively more vital for academia and corporate training and has potentially become one of the most significant developments and applications in Information Technologies (ITs). This study used a quantitative approach seeking a causative explanation of the decision behavior of individuals toward the acceptance and assimilation of e-learning in academic settings. A survey of 286 participants (students) was conducted to collect the research data. Our study framework was based on the third version of the Technology Acceptance Model (i.e., TAM3) and the data were analyzed using structural equation modeling in order to determine the factors that influence the learners' intention to use e-learning. Results show the predicting (promoting/inhibiting) factors of e-learning technology acceptance, while also examining some related post-implementation interventions expected to contribute to the acceptance and assimilation of e-learning systems. Our results also indicate that TAM3 holds well in the Arabian culture and also outline valuable outcomes such as: managerial interventions and controls for better organizational e-learning management that can lead to greater acceptance and effective utilization. Hopefully, this study provides a roadmap to more understanding of the success factors

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and post-implementation interventions contributing to the acceptance and assimilation of e-learning systems in developing countries.

## 1. Introduction

The Internet and networks, as the backbone for modern communications, transformed our world into ubiquitous connectivity; that is, anytime, anywhere, access is always available to the digital network and digital services. The evolution (and revolution) in information and communications technologies (ICT), that recently fueled remarkable economic and social changes, will only pick up the pace as we apply managerial interventions and controls for better ICT acceptance and assimilation.

The Communications and Information Technology Commission (CITC) in Saudi Arabia has launched a longitudinal study which asserts that Internet penetration is relatively high among educational institutions, as 75% of them are being connected to the internet [16]. However, a striking finding of the study, declares that only 39% of university/college students are able to access the Internet by 2007 and that e-learning is also not very popular among the educational institutions in Saudi Arabia.

Technology-assisted learning via ICT (or e-learning) has become progressively more vital for academia and corporate training. Furthermore, e-learning has potentially become one of the most significant developments in ICTs [46]. Motivated by such compelling advantages as: geographical reach, learner control (in terms of flexibility and convenience), and cost effectiveness in course delivery and management, educational institutions and professional organizations are embracing e-learning by implementing an expanding array of technology-enabled platforms [27].

Recently, Saudi Arabia has called for a national plan to adopt IT spanning the country. The plan strongly recommends the implementation of e-learning and distance learning, and their prospective applications, in higher education. In a major transformation of conventional education, the Saudi Ministry of Higher Education has recently launched the National Centre of E-learning & Distance Learning, set up a repository to organize the change, and prepare e-learning materials to help universities adopt the system and transform to a scheme of e-learning quickly [39].

Technology Acceptance Model (TAM3) by Venkatesh and Bala [44] provides valuable rational explanations into how and why individuals make a decision about the adoption and use of ITs, particularly the work on the determinants of perceived usefulness and perceived ease of use. Moreover, TAM3 enlightens managers to make informed decisions about interventions that can be in charge