

Original Article (Quantified)

## Presenting a model of effective factors of e-learning with a strategic approach to learning in the educational system of universities in Mazandaran province

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**Receive:**

27 September 2025

**Revise:**

11 December 2025

**Accept:**

10 February 2026

**Abstract**

The aim of this research is to present a model of effective factors of e-learning with a strategic approach of teaching-learning in the educational system of Mazandaran Province universities. The present research is applicable in terms of its purpose, and descriptive-survey in terms of its nature and method. The statistical population of the present research included 200 members of all academic staff in Mazandaran Province in 2024 as a sample, selected using the available sampling method. The collection tool in the present research included a questionnaire. The structural equation modeling method and AMOS software were used to analyze the data. According to the results of exploratory and confirmatory factor analysis, all factors were confirmed as effective indicators of e-learning with a strategic approach of teaching-learning. According to the results, it can be said that the results of exploratory factor analysis showed that the questionnaire indicators are influenced by 10 underlying factors and these 10 factors can explain more than 78 percent of the variability (variance) of the variables. The results of confirmatory factor analysis showed that the factor loading values of all items are greater than 0.4 and are acceptable. The results of the significance examination of the t-statistic values showed that the t-statistic values for all items were reported to be greater than 2.58. This means that the relationship between the items and their respective latent variable was accepted at a confidence level of 99 percent.

**Keywords:**

e-learning,  
Strategic learning  
approach,  
Educational system,  
Technical skills,  
Organizational  
training

**Please cite this article as (APA):** Abbaspour, A., Mohammadnejad, H. and Ghloamhoseinzadeh, M. (2026). Presenting a model of effective factors of e-learning with a strategic approach to learning in the educational system of universities in Mazandaran province. *Management and Educational Perspective*, 8(1), 46-66.



<https://doi.org/10.22034/jmep.2026.555807.1591>



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## Extended Abstract

### Introduction

The use of new and transformative technologies has paved the way for the creation of new teaching-learning approaches in educational institutions, and as a result, a new method called e-learning has been formed, which is gradually developing (Hejazi et al., 2021). Today, after the outbreak of the coronavirus, attention has increased more than ever to the use of information and communication technology tools and the use of strategic learning-learning approach environments. However, the strategic approach of e-learning has advantages such as facilitating and strengthening teaching and learning flexibility in time and space, easy access to resources (Ishkakova, 2024), the possibility of participation of working students and people with physical disabilities due to spatial flexibility, increasing communication channels between students with each other and with professors, the possibility of increasing deep learning by taking advantage of multimedia educational tools (Al Rawashdeh et al., 2022), etc. Due to problems such as reduced communication between colleagues, problems related to practical and laboratory lessons, spending a lot of time in front of a computer screen, mobile phone or other devices (Stecula et al., 2022), insufficient physical and mental activity, students' inability to manage time, frustration and anxiety of some students, time-consuming and costly for the university, difficult software and term problems, digital divide and unequal distribution of software (Dhawan et al., 2020), low speed internet connection and insufficient bandwidth, lack of the necessary ability for self-management, unfavorable assessments of privacy and security issues (Rajesh et al., 2020) and ... have failed to meet many of the basic needs of key stakeholders in the learning environment. Hence, the need to form and develop a new solution called the strategic learning approach that can compensate for the disadvantages and shortcomings of face-to-face and electronic learning methods and maintain the advantages of both methods has become apparent (Khanifar & Ghofrani, 2020). E-learning is activities that are carried out using electronic tools, including audio, video, computer and virtual (Nabavi et al., 2023). E-learning is a type of purposeful use of electronic and computer systems to support the learning process, and education, due to its advantages such as its availability everywhere and at any time, makes this method a useful and reliable tool for instructors for quality education (Ruiz, 2006). In the meantime, in defining this important matter, it should be stated that e-learning is active and intelligent learning that, while transforming the teaching and learning process and knowledge management, plays a fundamental and pivotal role in expanding, deepening and sustaining culture. According to information and communication technology experts and specialists, by 2020, e-learning will be the standard educational method in the world (Al Rawashdeh et al., 2021).

### Theoretical framework of e-learning

E-learning is the use of the Internet for learning, which can be achieved at any time or place through an Internet connection and a web browser. E-learning is a new type of education that does not require students to attend scheduled classes. In fact, it is a virtual learning environment on the network (Dimulescu, 2023).

Heydari Zadeh & Jahan (2025) investigated the effects of e-learning environment on collaborative learning and academic self-efficacy in Payam Noor University students. The results show that e-learning environment has a significant relationship with collaborative learning, academic self-efficacy, and e-learning environment improves collaborative learning and academic self-efficacy. The e-learning environment, with the opportunities and resources it provides to students, allows them to improve their learning by using these components, form broader relationships and interactions, and have greater satisfaction with education.

Ebrahimi et al. (2023) identified and explained teaching-learning strategies appropriate to the generational characteristics of today's undergraduate students. By structural and interpretive analysis of the data and through a three-stage process of extracting semantic units, sub-themes and main themes, teaching-learning strategies appropriate to the generational characteristics of today's undergraduate students were identified, including seven e-learning, self-directed, project-based, participatory, dialogue-based, problem-solving and originality teaching-learning strategies. Based on this research, it is concluded that the success of instructors in effective teaching-learning of today's generation of undergraduate students requires the application of these strategies in a combined manner and according to the situation and conditions.

### **Research Methodology**

The present study is applicable in terms of purpose, and descriptive-survey in terms of nature and method. The statistical population of the present study included 200 members of all academic staff in Mazandaran province in 2024 as a sample and was selected using the available sampling method. The collection tool in the present study included a questionnaire.

### **Research findings**

The structural equation modeling method and PLS software were used to analyze the data. According to the results of exploratory and confirmatory factor analysis, all factors were confirmed as effective indicators of e-learning with a strategic learning-learning approach. According to the results, it can be said that the results of exploratory factor analysis showed that the questionnaire indicators are influenced by 10 underlying factors and these 10 factors can explain more than 78 percent of the variability (variance) of the variables. The results of confirmatory factor analysis showed that the factor loading values of all items are more than 0.4 and acceptable. The results of the significance examination of the t-statistic values showed that the t-statistic values for all items were reported to be more than 2.58. This means that the relationship between the items and their respective latent variables was accepted at a confidence level of 99 percent.

### **Conclusion**

The present study was conducted with the aim of presenting a model of effective factors of e-learning with a strategic teaching-learning approach in the educational system of universities in Mazandaran province. The results of this study are consistent with the results of Heydari Zadeh & Jahan (2025), Ebrahimi et al. (2023), Zandi et al. (2023), Antony et al. (2022), Bani Hashemi & Malek (2022), Al-Hunaiyyan et al. (2021), Jafari (2021), and Mohseni (2020). Heydari Zadeh & Jahan (2025) showed that the e-learning environment has a significant relationship with collaborative learning and academic self-efficacy, and the e-learning environment improves collaborative learning and academic self-efficacy. The e-learning environment, with the opportunities and resources it provides to students, allows them to improve their learning by using these components, form broader relationships and interactions, and have greater satisfaction with education.

According to the research results, the following suggestions were made:

Increasing transparency and public trust through ethics, creating strategies in the organization to implement, and use e-learning in different sectors.

Creating a flexible organizational structure to develop the use of e-learning and create virtual structures in different sectors.