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ORIGINAL ARTICLE

# Model of Platformization of Education in Iranian Universities Considering the Challenges of the Digital Environment

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**ABSTRACT**

The present study aims to identify the dimensions and components of the platformization model of education in universities across the country, while taking into account the requirements and challenges of the digital space. This study is applied in terms of purpose and qualitative in terms of method and is based on a modified data-based approach. In the first stage of the research, the dimensions of the platformization model of education were identified by conducting in-depth semi-structured interviews with 18 experts in the field of higher education and educational technology. In the second stage, in order to validate and complete the proposed model, the opinions of 50 other experts in the fields of platformization of education, higher education, and educational technology, who were selected purposefully and based on expertise, were used. In this stage, while confirming and refining the extracted dimensions, the components of each dimension were also identified and completed through a validation approach. The data were collected through semi-structured interviews and analyzed using open and axial coding. This process was carried out with the aim of increasing the comprehensiveness, content validity, and conceptual adequacy of the model and within the framework of established research dimensions. Finally, the proposed model was presented with 10 main dimensions — modern education, solutions to remove barriers to virtual education, software features, evaluation, balance in the elements of the teaching-learning process, appropriate infrastructure, policies and laws, organizational culture of learning and education, new technologies and flexibility — and 50 components.

**KEYWORDS**

Model, Platformization of Education, Universities, Digital Environment.

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## Introduction

Platformization refers to the penetration of digital platforms' infrastructures, economic processes, and governmental frameworks into various economic sectors and spheres of life, as well as the reorganization of cultural practices and programs around these platforms (Laterza, 2025). E-learning platforms are increasingly becoming essential in secondary and higher education owing to their numerous advantages, including accessibility, flexibility, personalized learning opportunities, and access anytime and anywhere (Gavros, 2025). A review of previous studies related to the present research indicates that limited attention has been paid to developing a model for the platformization of education in universities. A summary of some related studies is presented below. Rahmati Gandom Shadi (2024), in a study entitled Investigating the Role and Impact of Artificial Intelligence Platforms on Students' E-Learning with the Mediating Role of Educational Content Quality, found that strengthening artificial intelligence technology infrastructures leads to increased e-learning and improved quality of educational content. Khandani, PourEbrahimi, Radfar, & Toloui Eshlaghi (2023), in a study entitled The Impact of Educational Platforms on Advancing the Goals of Education-Oriented Organizations as an Infrastructure for the Knowledge-Based Economy, demonstrated that establishing relationships among the main elements and their components as a dynamic model creates a new paradigm in the educational system. Universities and educational institutions can thereby effectively overcome financial challenges, educational space limitations, and related problems. Furthermore, interdisciplinary integration between dynamic systems technology and management sciences can enhance the credibility and knowledge contribution of the research.

## Method

This study employed a qualitative approach with the aim of extracting and validating the dimensions and components of the platformization model of education in the country's universities. Data were collected through semi-structured interviews with experts and specialists in the fields of higher education and educational technology and were analyzed using open and axial coding within the framework of the modified grounded theory approach. The research sampling was conducted purposively based on expertise and was carried out in two stages. In the first stage, 18 experts were selected based on the following criteria: at least 10 years of relevant educational and academic experience, a minimum of 5 years of research experience in higher education, and executive or consulting experience related to educational platforms. This stage aimed to identify the dimensions of the education platformization model. In the second stage, in order to validate and refine the proposed model, 50 specialists related to the platformization of education were surveyed and interviewed. At this stage, in addition to confirming and refining the extracted dimensions, the components and indicators of each dimension were identified and completed through a validation-oriented approach. Throughout all stages, the data were examined using qualitative analysis as well as open and axial coding. Participants were identified through specific coding procedures to ensure confidentiality and traceability of the data. Ultimately, the findings of the data analysis led to the identification of the dimensions, components, and indicators of the education platformization model, and the final conceptual model of the study was developed accordingly.

## Results

Based on the findings of the present study, an appropriate model for the platformization of education in the country's universities can be developed in light of the challenges of the digital environment. This model consists of ten dimensions, each including five major components. The first dimension, Innovative Education, includes the components of active learning, the guiding role of instructors,

student participation, personalized learning pathways, content flexibility, interaction, student engagement, online dialogue, lifelong learning, long-term accessibility, virtual reality (VR), simulation, practical learning, and the use of creative methods. The second dimension, Strategies for Overcoming Virtual Education Barriers, includes faculty training, support systems, trust-building, rapid problem-solving, motivation, participation, feedback, weak internet management, offline access, low-volume files, equitable access, and provision of equipment. The third dimension, Software Features of Education, includes simplicity, ease of use, user-friendliness, interactivity, security, privacy, trustworthiness, connectivity with complementary tools, immediate feedback, and learning analytics. The fourth dimension, Evaluation, consists of immediate feedback, motivation, data analysis, learning behavior analysis, diversity in assessment methods, process-oriented evaluation, continuous assessment, fairness, and anti-cheating mechanisms. The fifth dimension, Balance in the Elements of the Learning and Teaching Process, includes balance between content and interaction, quantitative and qualitative balance, theoretical and practical balance, balance between freedom and guidance, and balance between individual and group learning. The sixth dimension, Appropriate Infrastructure, includes high-speed internet, accessibility, strong servers, system stability, equal access, educational equity, adequate equipment, technical support, and specialized technical teams. The seventh dimension, Policies and Regulations, includes innovation support, encouragement policies, transparent regulations, structured frameworks, assessment regulations, transparency, data security, trust-building, coordination among sectors, and integrated laws. The eighth dimension, Organizational Culture of Learning and Education, includes participation, collaboration, feedback, experience-sharing, continuous improvement, managerial support, motivation, acceptance of change, flexibility, and organizational learning enhancement. The ninth dimension, Modern Technology, includes artificial intelligence (AI), educational chatbots, mobile learning applications, automation, time-saving systems, virtual reality (VR), augmented reality (AR), practical experiences, game-based learning, mobile-based learning management systems, integration, and tool coordination. Finally, the tenth dimension, Flexibility, includes learning at any time and place, selecting learning pathways based on interests and needs, flexibility in assessment, presenting content in diverse formats, and adjusting learning speed according to individual capabilities.

## Discussion and conclusion

The present study was conducted with the aim of developing a model for the platformization of education in the country's universities in light of the challenges of the digital environment. The findings indicated that the realization of platform-based education in universities is a multidimensional process that simultaneously requires attention to technological, educational, organizational, and cultural dimensions. The results of the qualitative and quantitative data analyses identified ten major dimensions for the education platformization model: innovative education, strategies for overcoming barriers to virtual education, software features, evaluation, balance in the teaching-learning process, appropriate infrastructure, policies and regulations, organizational culture of learning and education, modern technologies, and flexibility. These dimensions highlight the necessity of integrating educational transformation, infrastructure enhancement, utilization of emerging technologies, and the development of an organizational learning culture in order to achieve effective digital education. Furthermore, a comparison of the findings with previous domestic and international studies demonstrates that the extracted dimensions are generally consistent with existing research. However, the present study, by considering legal dimensions, organizational culture, and flexibility, has been able to provide a comprehensive and localized model for the country's universities, whereas many of these key dimensions have received limited attention in previous studies. For example, the studies conducted by Rahmati Gandomshadi (2024) and Khandani et al. (2023) regarding the role of artificial intelligence platforms, the quality of educational content, and the dynamics of technological infrastructure are fully

aligned with the dimensions of modern technology, software features, and appropriate infrastructure identified in the present study. The findings of Dadgar (2021) emphasized the importance of service quality, course quality, and student-instructor interaction, which directly correspond to the dimensions of innovative education, balance in the elements of the learning and teaching process, and evaluation. In addition, the emphasis on the role of perceived value and human interactions in sustaining online education is consistent with the dimension of organizational culture of learning and education. Moreover, the study by Mahmoudi et al. (2017), which focused on perceived usefulness, ease of use, and support, aligns with the dimensions of software features and modern technology. However, aspects related to trust and self-efficacy received less attention in the present study and may therefore be considered in the future development of the proposed model.

**Funding**

Overall, this study provides an operational and implementable model that can serve as a guide for policymaking and the design of digital education in Iranian universities, while also creating opportunities for the sustainable development of platform-based education with a focus on technology, human factors, and organizational dimensions..

**Authors' Contribution**

The sole author was responsible for the study's conceptualization, methodology, data collection, analysis, writing, and final approval of the manuscript.

**Conflict of Interest**

The author declares no conflict of interest regarding the publication of this article.

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