

SYSTEMATIC ANALYSIS OF OPPORTUNITIES AND CHALLENGES OF ONLINE LEARNING PLATFORMS: A CASE STUDY OF THE REPUBLIC OF UZBEKISTAN

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ABSTRACT: This scholarly article presents a systematic analysis of the implementation, practical capabilities, and challenges encountered with the Hemis online learning platform in the Republic of Uzbekistan. The analysis indicates that the HEMIS system serves as a crucial tool for digital governance, optimizing the educational process, and automating student activity and assessment procedures. However, there are aspects of the system that require technical and methodological refinement. The article puts forward divisions in the role of the teacher in the effective organization of distance learning through the HEMIS system, some shortcomings of the system, suggestions and recommendations. The research findings aim to elucidate the strategic role of the HEMIS system in the development of online learning within Uzbekistan's higher education system.

KEYWORDS: Online learning platforms, distance learning systems, traditional education, HEMIS, digital technologies, enhancing education quality, educational stakeholders, information technology, systematic analysis.

INTRODUCTION

In recent years, information and communication technologies (ICT) globally have triggered profound transformations across all facets of life, including the education system. Digital transformation processes necessitate a re-evaluation of core stages within educational institutions, such as teaching, learning process management, control, and evaluation. Specifically, educational processes organized on the basis of online learning platforms, distance learning systems, and digital resources play a crucial role in improving the quality of education, expanding access to knowledge, and democratizing education.

LITERATURE REVIEW AND METHODOLOGY

The Republic of Uzbekistan has not remained isolated from these global digital shifts. A series of significant reforms are being implemented in the country based on Presidential decrees, Cabinet of Ministers resolutions, and initiatives from sectoral ministries to digitize the education system. Especially during the COVID-19 pandemic in 2020–2021, restrictions on traditional (offline) forms of education led to the popularization of online education as an alternative and necessary solution. This, in turn, drastically increased the need to introduce and develop online education technologies on a republic-wide scale.

Modern approaches to teaching specialized disciplines based on the digitalization of society are crucial for solving problems that affect every educator and educational goals. In optimizing the process of teaching specialized subjects in a digital society, online learning platforms, web programs and applications, interactive learning, digital devices, and data systems make it even more attractive. Also, graduating students will receive training from industry experts and help them develop real-life skills. Carrying out the educational process on distance learning platforms does not limit the educational environment.

The scientific research conducted by L.A. Rustamova and A.O. Umarov is dedicated to studying the methodology of students in technical higher education institutions using the digital educational environment to conduct independent educational activities. The scientific article covers the main characteristics of independent learning, platform selection, study plan creation, use of interactive resources, use of online consultations and forums, control and evaluation methods, student motivation, and other similar topics. Analytical data on the effective organization of independent learning in a digital learning environment and its role in the student learning process are explained with analytical results from the Moodle and Coursera educational platforms.

In the modern world, digitalization affects all areas of life, including education. The integration of digital technologies into the educational process provides unique opportunities to improve the quality of education, while at the same time being associated with a number of important difficulties and problems. M.C. Taramova and others studied the positive aspects of using digital technologies in education, as well as the main obstacles faced by teachers, as a scientific study. Key digital tools such as interactive whiteboards, learning platforms, electronic textbooks and online courses are discussed. Examples of successful technology implementation in various educational institutions demonstrating improved student knowledge and motivation are provided. The authors put forward the idea that integrating digital technologies into the educational process requires the joint efforts of all participants in the educational system, and only with active cooperation and mutual support can significant results be achieved by ensuring high-quality education and preparing students to live and work in a digital transformation environment and made a positive conclusion.

Another scientific researcher's research is devoted to a topical problem of modern education - distance education. The main task of the article is to substantiate and prove that distance education is a new type of education. The article analyzes the forms of teaching and reflects the main directions of education development, the differences between distance education and traditional education. The problems that are solved by students and teachers in distance education are identified. The effectiveness of distance learning is determined by the use of pedagogical technologies based on online coaching and online seminars.

The research conducted by U. Zakharova, K. Tanasenko systematized the advantages and disadvantages cited in Russian and international publications on MOOCs (Open Online Courses) and gave an independent assessment of teachers' opinions on this issue. The opinions of nearly 458 respondents were analyzed. Although the selected sample is large enough, all those who participated in the survey are in online education professional development programs. Therefore, it is difficult to apply these results to all professors and teachers, especially those who are strongly opposed to these systems or do not know them at all. Respondents pointed out both the positive and negative aspects of MOOC, which means that it depends on the results of the analysis of existing trends.

The emergencies that arose during the pandemic forced educational institutions to quickly switch to digital platforms. Therefore, along with local platforms such as Ziyonet, Edu.uz, and HEMIS, international tools such as Google Classroom, Zoom, Moodle, and MS Teams began to be widely used. This situation revealed not only technical, but also pedagogical, organizational and psychological problems.

This article focuses on the systematic analysis of educational processes in the Hemis system, assessing the current state of online education platforms in the Republic of Uzbekistan, identifying their capabilities, analyzing existing problems, and developing scientifically based recommendations to eliminate them. The article provides a deep analysis based on methodologies such as systematic analysis, empirical research, and comparative approach. The research results are expected to improve the quality of online education, accelerate digital transformation and create an effective digital environment for all participants in the educational process.

RESULTS

Online education platforms in Uzbekistan have developed significantly in recent years, especially due to the sharp increase in the need for distance education during the COVID-19 pandemic. Today, a number of efforts are being made in the country to develop online education.

The following general trends can be highlighted regarding the introduction and development of the HEMIS platform:

- **2021:** The HEMIS platform was initially introduced in some higher education institutions on a trial basis. At this stage, the functional capabilities of the system and the needs of users were studied.
 - **2022:** The platform began to be implemented on a larger scale. Many higher education institutions began to switch to the HEMIS system, which was an important step in digitizing educational processes.
 - **2023:** The functional capabilities of the HEMIS platform were expanded. New modules were added, the user interface was improved, and the stability of the system was increased.
 - **2024:** The platform was fully implemented and actively used by all higher education institutions. At this stage, the effectiveness of the system and the level of user satisfaction increased.
- The results shown in Figure 1 were recorded based on the results of the Hemis system of the University of Information Technologies and Management.

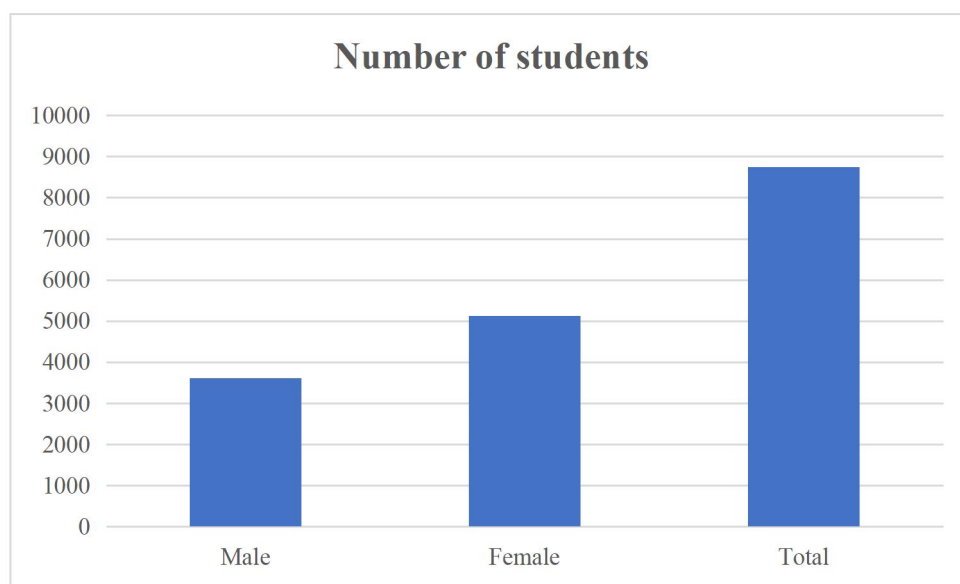


Figure 1. Number of students enrolled in the HEMIS system

The following sections are available for creating teacher profiles (Table 1):

Table 1. Components of the teacher role

Nº	Section names	Nº	Section names
1	Employee Information	8	Rating Grades
2	Subjects	9	Science
3	Learning process	10	Statistical
4	Individual Trainings	11	Reports
5	Retraining	12	Messages
6	Performance	13	System
7	Trainings		

Each section performs specific tasks. Today, the amount in the Hemis system in relation to the age indicators at the University of Information Technology and Management is given in Figure 2.

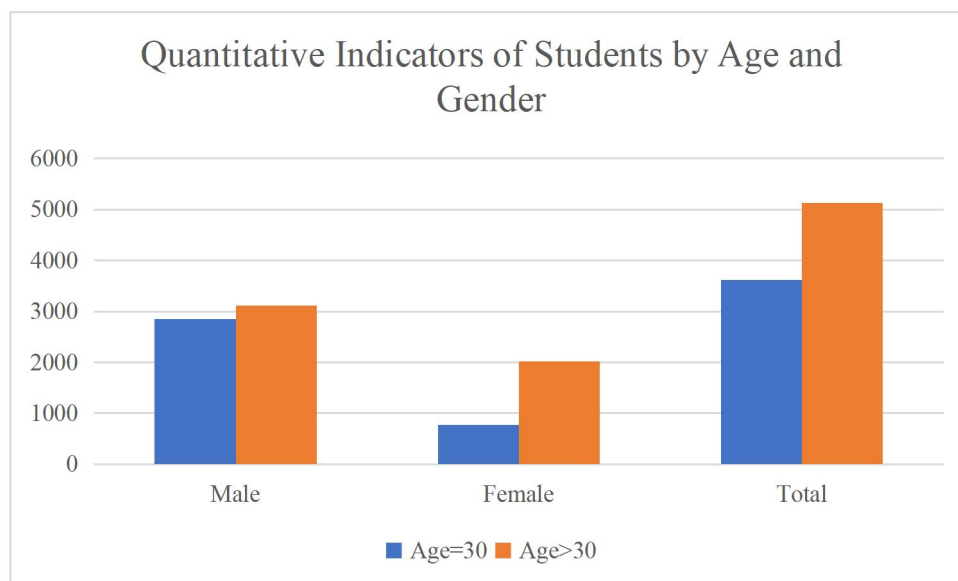


Figure 2. Quantitative indicators of students in the HEMIS system by age and gender

Also, the system provides statistics on students by region, citizenship, student residence halls, courses of study, and forms of study.

The following can be shown as a deficiency of the system:

The lack of an anti-plagiarism system. World experience shows that the absence of such a system allows students to copy and plagiarize prepared materials; The system is relatively slow. When the educational platform is used frequently, the communication between the systems slows down, and it may not work for technical reasons; A decrease in the level of assimilation of the system among students with insufficient information technology literacy.

The following suggestions can help improve the quality of online education:

Table 2: Measures for Improving the HEMIS System and its Utilization

Category	Proposed Measures
Technological Solutions	Popularizing high-speed internet access; State-provided technical equipment and subsidies.
Teacher Retraining	Conducting regular training in digital pedagogy.
Platform Improvements	Developing a unified national online education platform based on a single standard.
Digitizing Educational Content	Creating digital textbooks, interactive laboratories, and test databases.
Strengthening Assessment	Introducing Artificial Intelligence (AI)-based assessment systems; Developing and implementing anti-plagiarism systems.

CONCLUSION

Online learning platforms in the Republic of Uzbekistan's education system have been developing rapidly in recent years, forming a strong competitor to traditional education. In this article, the capabilities of the Hemis online learning platform and the problems in their practical application were

systematically analyzed. The research results showed that technological base, pedagogical approaches, user experience (UX) and digital literacy level are important factors in distance learning.

In particular, the HEMIS system plays a key role in digitizing the educational process, centrally managing the database and implementing online monitoring in higher education institutions of Uzbekistan. Through the HEMIS system, many functions such as monitoring student attendance, recording assessment results in subjects, and managing curricula and workloads are automated. However, some problems are caused by the fact that the technical capabilities of the system have not been fully implemented and users (mainly students and teachers) do not have enough knowledge and skills to use the system effectively.

On this basis, it is necessary to further improve the HEMIS system, make the user interface more convenient, organize regular training on using the system, and further integrate distance learning through it. The full and effective operation of HEMIS expands the possibilities of fully unlocking the potential of online education platforms in Uzbekistan and thoroughly integrating them into the educational process. This, in turn, contributes to improving the quality of education and management efficiency.

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