



OPPORTUNITIES FOR USING DIGITAL TECHNOLOGIES IN THE HIGHER EDUCATION SYSTEM OF UZBEKISTAN

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Abstract. The article analyzes the theoretical and practical opportunities for using digital technologies in the higher education system of Uzbekistan, especially in pedagogical fields. The authors demonstrate the didactic and organizational functions of the HEMIS and Moodle systems, as well as the importance of cloud technologies such as Google Docs and Microsoft Office 365 in collaborative learning and the creation of digital portfolios. The possibilities of synchronous platforms such as Zoom and Google Meet for ensuring hybrid didactics through breakout rooms and virtual whiteboards are also discussed.

Keywords. Digital technologies, higher education, HEMIS, Moodle, nonlinear teaching, social constructivism, cloud technologies, digital portfolio, synchronous learning, hybrid didactics, facilitator.

Introduction

No matter how perfectly the theoretical and methodological foundations for introducing digital technologies into higher education institutions of Uzbekistan are developed, the real effectiveness of these ideas directly depends on the extent to which they are used for pedagogical purposes in the educational process. In pedagogical fields of higher education, the main purpose of using digital technologies is not merely to accelerate information transmission, but to increase students' cognitive activity, organize their independent learning, develop self-control, and, most importantly, prepare future teachers in practical terms to work in a modern digital educational environment.

The use of digital technologies for pedagogical purposes includes a wide range of software tools. Each of them serves to solve particular didactic tasks of the educational process. Below, the didactic opportunities of modern digital technologies used with students in pedagogical fields of higher education are analyzed by selected directions.

1. Didactic and organizational opportunities of learning management systems

The digital heart of modern higher education institutions is the learning management system. Today, against the background of digital transformation processes, two major systems have priority in Uzbekistan's higher education, and together they form a single complementary electronic educational environment: HEMIS and Moodle.

In connection with the transition to the credit-module system, all higher education institutions of the republic, including pedagogical institutes, have been fully integrated into the HEMIS system. Although this system is primarily intended for centralized management of administrative and educational processes, its direct pedagogical and social significance is considerable.

Through HEMIS, a student independently selects elective subjects based on their interests and professional goals. This awakens in the student a sense of involvement in the educational

process. Through this system, future specialists learn strict discipline in the electronic educational environment and adherence to deadlines. They form time-management skills in practice. Since the system minimizes the human factor and is fully transparent, the student becomes confident in the objectivity of the assessment process. Prevention of corruption risks increases students' learning motivation and trust in social justice.

If the HEMIS information system is the foundation that manages the organizational and administrative part of the educational institution, the Moodle platform directly provides its educational-methodological part and cognitive activity space. For students of pedagogical fields, Moodle is not merely a static repository where lecture texts, audio-video materials, and presentations are uploaded, but an active learning environment that constantly motivates the student to act.

On this platform, the educational process and monitoring of learning progress take place on the basis of advanced pedagogical technologies. The deeper pedagogical possibilities of the Moodle platform are manifested in the following modules and elements.

Nonlinear teaching through the Lesson element: this is not a traditional, monotonous continuous text intended only for reading, but branched educational material that opens step by step and is enriched with intermediate control questions and logical tasks. The student cannot move to the next page until the information on one page has been fully understood and the given question has been answered correctly. This method prevents superficial and mechanical reading of educational material. Depending on the student's answer, the system may return the student to an additional explanation page or transfer them to a more complex stage, which serves to individualize education.

Cooperation and analysis in Assignment and Workshop modules: through the Assignment module, a student uploads an independently written essay, slide presentation, or practical project to the system, while the teacher provides continuous formative assessment by writing individual reviews. The Workshop module has even higher didactic value: through it, students evaluate one another's work according to established criteria. This practice helps future teachers develop the ability to evaluate someone else's work objectively, write constructive reviews, point out errors while observing professional ethics, and, in turn, accept criticism from others correctly.

Social constructivism through forums and chats: these tools ensure continuous communication between teacher and student as well as among students. Students discuss given problematic situations at any convenient time. According to the theory of social constructivism, deep and fundamental knowledge is not given to a person ready-made, but is strengthened precisely in the process of such social discussions, clashes of ideas, exchange of experience, and consideration of different approaches to a problem.

The comprehensive use of HEMIS and Moodle systems in Uzbekistan's higher education not only creates a transparent, objective, and highly technological environment in educational institutions, but also serves as a key didactic tool in training competitive personnel who think independently, work continuously on themselves, and meet the requirements of the digital age. The Moodle platform is a training ground for future teachers to acquire digital pedagogical competencies. In this system, students not only receive information as users, but also experience in practice how the principles of active learning work and gain ready electronic

didactic models for their future professional activity. In the HEMIS system, future teachers acquire the skill of completing assignments on time on the basis of strict discipline.

2. Cloud technologies and opportunities for collaborative learning

In the traditional education system, students often learn and are assessed individually. However, the labor market of the twenty-first century strictly requires graduates to possess modern competencies, especially teamwork, joint problem solving, and critical thinking. From this point of view, in implementing the ideas of social constructivism in practice, cloud technologies appear as the most innovative, economical, and effective tool for organizing collaborative learning.

Cloud services widely used in educational institutions, such as Google Docs and Microsoft Office 365, break the boundaries of space and time in education and ensure a continuous learning environment. Their opportunities for improving the qualifications of future teachers are evident in the following key directions.

1) Synchronous collaboration and project-based learning. Imagine that students of a pedagogical field are assigned to prepare, as a group, one open lesson plan or multimedia presentation. In the traditional method, they would have to write on paper and pass files to one another using a flash drive or e-mail. In a cloud environment, however, they can work on a single virtual document simultaneously while sitting in different homes. The system shows in real time, through colored markers, who is writing which word and what changes are being made. This is an ideal solution for team project work. In addition, the document version-history function allows the teacher to monitor each student's objective contribution to the project and prevent the "free-rider" syndrome in group work.

2) Digital portfolios and reflexive learning. Cloud storage technologies are an important means of leaving a digital trace in education. During four years of undergraduate study, future teachers systematically store in their cloud space all teaching slides they have created, articles and essays they have written, and certificates and video reports related to competitions in which they have participated. This process not only safely stores information, but also serves as an electronic portfolio that shows the dynamics of the student's self-development. In the employment process, this portfolio becomes the most reliable proof of a young specialist's digital competencies and practical skills.

3) Interactive communication and information management. Collaborative learning requires continuous communication among group members. Through cloud-based notification and management systems, students can exchange experience, organize short webinars, and quickly discuss problematic situations that arise while completing assignments. This forms future teachers' culture of online assistance and digital ethics.

When cloud technologies are integrated into the educational process, they do not remain merely repositories for storing information; rather, they become powerful pedagogical tools that teach students intellectual cooperation, mutual support, and team-based synthesis of acquired knowledge. By using these tools as students, future teachers naturally master the methodology for involving their own pupils in digital collaboration in the future.

3. Hybrid didactics of distance synchronous learning tools

Synchronous learning is the process in which the teacher and student participate in lessons at the same time in a single virtual space while being physically distant. Today, under conditions of educational digitalization, platforms such as Zoom, Google Meet, Microsoft Teams,

and Cisco Webex have become an integral part of the educational activity of higher education institutions and, when necessary, a full-fledged alternative to traditional education.

From the perspective of modern pedagogy, the capabilities of these platforms are not limited only to video and audio transmission. They create a broad technological field for implementing interactive and student-centered hybrid didactic rules in practice.

The deeper pedagogical possibilities of synchronous platforms are manifested in the following advanced tools.

Interactive cooperation through breakout rooms: in traditional lectures, there is a risk that students may become passive listeners, and this risk is even higher in the online environment. The function of dividing students into small groups serves as a solution. For example, during an online lesson, the teacher may divide a stream of 30 students into six small virtual rooms of five students each. Each group is assigned a specific pedagogical problem to discuss, a case-study solution to find, or a short presentation to prepare. In this process, the teacher moves virtually from room to room as a facilitator, guiding students. When the allotted time ends, all students automatically return to the main room and defend their conclusions. This method corresponds to the ideas of social constructivism and develops students' collective responsibility and critical thinking.

Virtual whiteboards and cognitive visualization: visualization plays an important role in explaining abstract concepts. While explaining, the teacher may draw visual elements on virtual boards such as Jamboard or Microsoft Whiteboard, and students can simultaneously write their ideas on the board. The "Annotation" function in Zoom makes it possible to highlight, draw on, and emphasize errors in displayed slides in real time. This is an invaluable tool for applying the brainstorming method. Teaching future teachers to use these tools sharpens their skills in digital public speaking and structuring information visually.

Formative assessment through rapid polls: in synchronous lessons, built-in polling tools are used to maintain students' attention and check how well the material is being mastered. By conducting quick tests between logical parts of the lesson, the teacher immediately sees the percentage of mastery of the whole group on the screen. This keeps students in a constant cognitive tone and helps the teacher adjust the pace of the lesson to the needs of the group.

Parallel communication and nonverbal feedback: the chat function of online platforms enables parallel discussions without interrupting the lesson. Students who hesitate to ask questions aloud in the classroom become accustomed to leaving their thoughts in written form. In addition, students respond to the lesson process nonverbally through electronic emojis such as "raise hand," "agree," or "surprised." This forms a distinctive culture of electronic communication.

Distance synchronous learning tools are not merely channels for delivering education, but a broad field of digital didactics. Teaching students of pedagogical fields in this environment has a two-sided effect: on the one hand, they master educational material through modern interactive methods; on the other hand, they learn a solid digital teaching methodology necessary for their future professional activity.

Conclusion

In conclusion, it can be said that it is not enough to introduce students of pedagogical fields to these digital opportunities only theoretically. During practical classes, it is necessary to teach them to work directly with these software and intellectual tools and to understand



their methodological construction. In the educational process, the role of the teacher changes completely: the teacher must now become not the sole source of information, but a “facilitator,” “cognitive leader,” and “media mentor” who gives the right direction in the digital flow of information.

The mutual integration of these technological tools and their systematic incorporation into the educational process break traditional educational patterns, stereotypes, and limitations and bring the quality of education, upbringing, and teaching to a truly new evolutionary stage. This, in turn, can confidently be said to serve as the strongest foundation for developing human capital and building a digital society in our republic.

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