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ENSURING CONTROL OF STUDENTS' KNOWLEDGE IN DISTANCE LEARNING

Abaturov Aleksandr,
Honored Worker of Science and Technology of Ukraine, MD,
Professor, Head of Department of Pediatrics 1 and Medical Genetics
SI "Dnepropetrovsk Medical Academy of the Ministry of Health of Ukraine"

Nikulina Anna,
PhD, Assistant of Department of Pediatrics 1 and Medical Genetics,
Assistant professor SI "Dnepropetrovsk Medical Academy
of the Ministry of Health of Ukraine"

Abstract

Ensuring adequate forms and methods of control of students' knowledge during distance learning is an urgent problem in the context of the Covid-19 pandemic, which is due to the need to involve innovative information technologies in the management of the educational process. The article on the basis of literature data presents the main functions and didactic principles of knowledge control in terms of distance learning, lists the important components of successful organization of the pedagogical process and components of the Learning Management System. At the same time, the authors of the article focus on ensuring the quality of distance learning emphasizes the effectiveness of information technology used and pedagogical skills.

Keywords: *distance learning, knowledge control functions, didactic principles of knowledge control, Learning Management System, components of the learning management system*

Introduction

Control of students' knowledge during the distance form of education is the organization of feedback as a means of managing the educational process. The urgency of this problem is due to the fact that the entire system of higher education in Ukraine is subject to complete organizational restructuring and implementation of this method of education in connection with the Covid-19 pandemic.

Prior research showed that student performance in online courses is associated with socio - demographic characteristics, motivation, self-efficacy, and interaction with instructors. Foreign researchers analyzed the effectiveness of distance learning at technical universities in comparison with traditional off line classes. The effectiveness of distance learning was assessed according to three parameters: the level of mastering the discipline, current academic performance and the level of satisfaction with the training course. It was found that the level of mastering the discipline did not differ in

the groups. However, students who took the course online were slightly less satisfied with the learning process. Researchers believe this is primarily due to a lack of experience and time management skills. With almost equal educational results, the cost of teaching one student in a mixed format turned out to be 15–19% less, and in the distance form - by 79–81%, depending on the course. And this is even taking into account the costs of creating and maintaining online resources. According to the data obtained by the authors of the study, if universities completely switch to the distance format, then with the same tuition costs they will be able to increase the number of students by 15-18%. [1]. At the same time, social and ethical aspects of distance learning, including using the Artificial Intelligence system, telemedicine data and the possibility of developing clinical thinking and practical skills when examining real patients in medical higher educational institutions remain open [2; 3].

The importance of organizing the control of students' knowledge in terms of distance learning

Knowledge control performs the following functions and has didactic principles, tabl. 1.

Table 1

Functions and didactic principles of knowledge control

Knowledge control functions	The essence of the process	Didactic principles of knowledge control	The essence of the process
Control	A form of state control of knowledge, the indicators of which are the only basis for judging learning outcomes and the level of success	Effectiveness	Testing and assessment of students' knowledge should not only reflect the level of knowledge acquisition, but also always encourage students and teachers to achieve new successes in academic work
Training	Ensuring learning objectives associated with the pedagogical skills of the teacher	Systematic	The planned examination and assessment of knowledge is carried out on the basis of interdisciplinary integration; continuous control throughout the educational process in a consistent manner with the gradual

			complication of tasks, content and methods of teaching
Educating	A means of forming socially valuable personal qualities and academic integrity	Individuality	The desire to deeply and fairly assess the progress of each student, not the group as a whole
Organizational	A means of organizing the systematic daily work of students to acquire knowledge	Differentiation	Is to identify quantitative and qualitative differences in knowledge, skills and abilities of students and their evaluation
Developing	Promoting the development of the student's personality, the formation of cognitive abilities and mastering the techniques of mental activity	Objectivity	Correspondence to the true quality and quantity of acquired knowledge, skills and practical abilities
Methodical	A means of simultaneous evaluation of methods of teaching lectures, seminars and practical classes	Unity of requirements	The same system for assessing the level of knowledge, skills and practical skills of all teachers according to the developed criteria

Ensuring the organization of the educational process in distance educational technologies in a higher educational institution includes:

1). An educational portal that contains educational, methodological and organizational and administrative information for students;

2). Equipment that has access to a telecommunications network (Internet, satellite TV, the use of a virtual branch of Artificial Intelligence [2];

3). Computer labs and access to international databases of electronic libraries (for example, Open Access Medicine, provided by McGrawHill Professional);

4). Educational content (with extensive use of telemedicine data, digital files with images and audio data of patient examination (The Web-based Simulation of Patients (Web-SP) project) [4], project method [5], teaching in interdepartmental cooperation and other interactive methods);

5). Multimedia laboratories for creating your own content (local and network);

6). Knowledge control materials that meet international standards (for example, The United States Medical Licensing Examination, USML or IFOM NBME);

7) Learning Management System (LMS), for example, Moodle or national online education platforms that were recently established in many countries, including China (XuetangX, WEMOOC, and CNMOOC), India (Swayam), and Russia (National Platform of Open Education (OpenEdu);

8). Learning Content Management System (LCMS) [6; 7].

Comprehensive use of communication is one of the main valuable features of the system. The core of the distance learning system is LMS or educational process management system. LMS is usually designed to control and manage the educational process with a large number of students, Fig. 1.

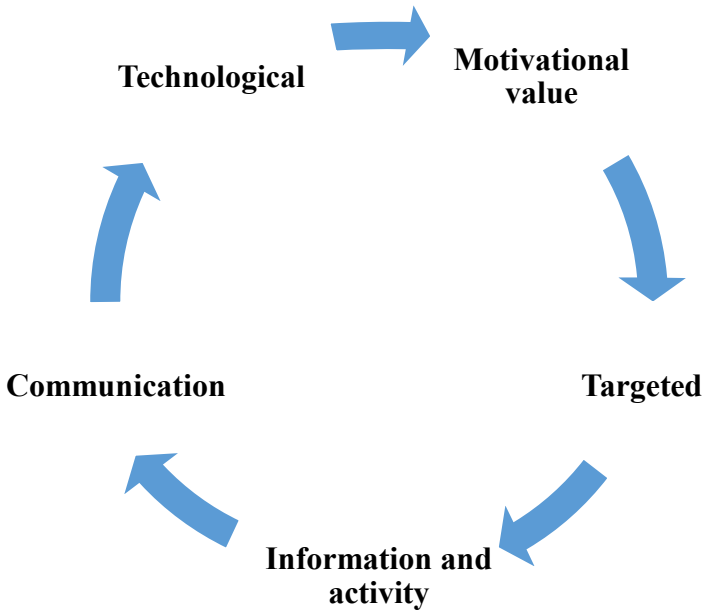

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Figure 1. Components of the learning management system [8].

Ensuring Academic Integrity in Distance Learning

Monitoring activities to ensure the principles of academic integrity in preschool conditions [9]:

1). Implementation of a system of access to educational resources by individual passwords and identifiers;

2). Use of various ciphers and encodings to protect the tests themselves from unauthorized access, by running testing programs strictly using passwords;

2). Organization and implementation of control works on the basis of certified regional training centers with access to the Internet;

3). Use of additional peripheral devices, such as video cameras, individual PIN input devices;

4). Time limit for response;

5). Random mixing of answer options and tasks from an extensive bank;

5). Statistical protection during testing;

6). Evaluation of these protocols using special algorithms for multivariate data analysis, allowing to detect fraud, especially in the case of systematic and massive fraud [10; 11].

Conclusion

The quality of distance learning depends on the effectiveness of the information technologies used and pedagogical skills. Therefore, the pedagogical, meaningful organization of distance learning (professional staff and associations, innovative and interactive pedagogical technologies) is an integral part of the learning process. It is on these important conceptual pedagogical provisions that the modern formation of distance learning is based.

Conflict of interest

The authors declare that they have no conflict of interest.

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