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# СУЧАСНІ КОНЦЕПЦІЇ ВИКЛАДАННЯ ПРИРОДНИЧИХ ДИСЦИПЛІН В МЕДИЧНИХ ОСВІТНІХ ЗАКЛАДАХ

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## **ELECTRONIC EDUCATIONAL RESOURCES AND THEM USE IN THE TRAINING PROCESS IN THE MEDICAL UNIVERSITY**

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The development of scientific and medical knowledge in the context of the integration of modern technologies into the system of higher medical education requires improving the quality of training and qualification of the doctor [1, 2]. The task of improving the quality of training can be solved by introducing new methods of education based on information technologies in the medical college [3, 4]. Obviously, most university students are young people between the ages of 20 and 30, for whom the term “information technology” is an integral part of life. Informatization of education with the appropriate software and methodological support can solve many educational problems. By informatization we mean the technology of electronic educational resources, using video and audio materials, models, the main principle of which is the interactive mode of the teacher and student work in conjunction with cognitive technologies aimed at developing the professional abilities of the future doctor.

The most widely spread in medical school the technologies of the learning process support are case-technologies, television-satellite technology and network ICT (information and communication technologies).

The Internet development can be viewed in the following chronology [3]:

- 1969 – the USA Ministry of Defence builds the first test network and ARPANET is created;
- 1971 – Ray Tomlinson creates the first programme for electronic mail and E-mail is created;
- 1972 – Telnet is developed which allows work on distant computers;
- 1973 – FTP (File Transfer Protocol) is established which becomes the standard for data transfer within the network;
- 1979 – USENET news server network with thematic groups is created;
- 1983 – TCP/IP protocol is standardised and the term ‘INTERNET’ as a name for a ‘network of all networks’ is first used;
- 1986 – NNTP (Network News Transfer Protocol) becomes the standard for the connection between news servers connected in the USENET network on the Internet;
- 1989 – the number of computers exceeds 100.000;
- 1991 – the WWW (World Wide Web) is developed, and the number of computers connected to the Internet exceeds 1 000.000 [3].

The basic of modern e-learning were development the theory by Burrhus Frederic Skinner in 1953–1956. He developed the radical behaviourism theory. Skinner invented the operant conditioning chamber and constructed the first teaching machine. In the following years, he developed early computer-based training (CBT) programmes that followed the idea of “programmed instruction” [5]. The material was carefully sequenced in small parts to build a systematic process of descriptions,

questions and answers. Skinner's early teaching machines had substantial limitations. For example, while students were rewarded for correct responses, they didn't receive feedback or explanation when their responses were incorrect [5].

Electronic educational resources allow solving the problem of increasing the effectiveness of teaching students in medical and biological physics and other disciplines, as well as the task of providing independent work for students. The advantages of using social networks in the learning process are obvious. A high level of interaction between the teacher and the student ensures the continuity of the learning process. Clear understanding of the ideology and interface of social networks for the most part of the Internet audience can save considerable time, bypassing the stage of students' adaptation to the new teacher. The ability to view the video and audio material in remote access mode, helps to better understand and assimilate the subject, allows you to review the material if it was not understood the first time. In addition, it is possible to study the missed material yourself. To messages you can attach files of any formats. Lack of personal communication, allow you to build in the communicative space of a social network informal communication between the teacher and the student, regardless of the personal characteristics of the student or teacher.

The «Educational forum» of the departments of the University provides an opportunity to organize a training discussion in real time; to influence the formation of the worldview of a young doctor. Availability of «Teacher Forum» services gives teachers the opportunity to discuss professional issues. Availability of the «Patient» service makes it possible to conditionally divide information into information for specialists (including students), as well as for patients, which is the first step to remote counselling.

However, it is worth remembering that a social network can not be regarded as an independent educational resource in the field of education. The electronic educational resource can be developed as a system for additional education and self-education beyond the compulsory program. Social networks are unlikely to completely replace the classical ways of teaching, but their development requires the teacher to constantly improve, and develop pedagogical potential, in order to improve the quality of education.

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## **PECULIARITIES OF EDUCATIONAL TECHNOLOGIES IN HIGH SCHOOL**

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Current level of society development is marked by volume and complexity of information flows in it. The enormous quantity of information resources determines the necessity of appropriate training of students and creation of an original active reserve. Hence, creation of a variety of methodical approaches employing new information technologies for implementation of students' ideas, students' creative potential developing and person-oriented learning, for development of ability of formation of strategies development for different problems solving and prediction of the results is an actual task of the pedagogue.

Creation, development and effective application of the informational educational technology are preconditions for the continuous improvement of the teaching system and for improvement of the effectiveness of higher educational process [1].

The possibility of offering the structured learning materials for students and teachers, educational multimedia systems with any time access independently of location and feedback support are characteristic features of the modern educational environment.

Informational and communicational technologies have focused their attention on the possibility and the necessity of educational process model changing from the reproductive to creative [2]. Creative model of educational process supposes that situation or process is simulated in educational audience, so students led by teacher have to apply their knowledge, to demonstrate creativity in analyzing models and to develop solutions for tasks.

Methodological approaches of information and communication technologies include:

- learning tools – knowledge and skills transmission, formation and providing the required level of mastering;
- training systems – help to work out competencies and skills, and are designed for repetition of learning material;
- information search and reference systems – for skills formation in information reporting;
- demonstration equipment – for studied objects, phenomena, processes visualization and for their research;