THE SYSTEM OF DEVELOPMENT OF TECHNOLOGICAL COMPETENCES IN STUDENTS WITH THE HELP OF ELECTRONIC EDUCATIONAL TOOLS

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ABSTRACT

This article discusses the technical, socio-economic and psychological-pedagogical factors of developing the technological competencies of students of higher education institutions using e-learning tools. The components of the system of didactic support of e-learning tools are highlighted. The model of advantages of the organization of education on the basis of e-learning tools and the main problems of the organization of the educational process using e-learning tools are presented.

Keywords: E-learning tools, continuous education, software, textbooks, multimedia, e-work, e-portfolio, e-tests, e-databases, e-assignments, e-simulators, e-textbooks, spreadsheets.

INTRODUCTION

The new version of the Law of the Republic of Uzbekistan "On Education" (23.09.2020) sets a number of important tasks for the higher education system. These include the individualization of independent learning, the development and mastering of distance learning technology, its tools, new pedagogical and e-learning tools, the acceleration of student learning using a modular system of training. Also in the concept of development of the higher education system until 2030, the introduction of e-learning management system to ensure the quality of education, accelerating the creation of national e-learning resources, the organization of translation of foreign e-learning resources , gradually increase the share of electronic resources in the educational process, create a system of placing information about electronic resources in libraries using QR-codes to create electronic textbooks, download them to mobile devices, students, teachers and young researchers e-learning resources, electronic catalogs of modern scientific literature and free access to databases are planned to be expanded [1].

Social and economic reforms in the education system of the Republic of Uzbekistan are aimed at training highly qualified specialists and the main goal of higher education institutions is to ensure the quality of higher education, that is to write, the training of quality, competitive personnel. In the period of rapid updating of information, the issue of quality of education in each higher education institution, the enrichment of education with the latest innovations, technical means and technologies, the integration of education with modern production are of great importance. Therefore, today, technology puts high demands on the quality of training in higher education institutions, which have the necessary knowledge in their field of professional activity and can use them in an integrated manner. These requirements, in turn, require the integration of our country into the world economic system, the widespread introduction of e-

learning tools in the educational process in the formation of technological competence of future engineers in the process of entering the world labor market [2].

The formation of the intellectual potential of the nation as a means of scientific and social development of society is based on the use of ICT, the main of which are:

- collection of knowledge (databases and electronic libraries, etc.);
- knowledge processing technologies (search information systems, information-analytical, expert-analytical, design, editorial and other information systems);
- dissemination of knowledge (Internet, distance learning system) [3].

THE ANALYSIS OF THE LITERATURE ON THE SUBJECT

The introduction and development of e-learning technologies are relevant for the development of approaches to the use of ICT potential for the full development of the individual. This process increases student engagement and activism; develops the ability to think alternatively, develops skills to develop strategies for solving both educational and practical tasks; allows to predict the results of the implementation of decisions made on the basis of modeling the studied objects, events, processes and relationships between them.

Examining the problem of complex development of the student's personality, Ball G.O. concludes that traditional education today cannot be considered humane because it is based not only on the creative development of students, but also on the sum of knowledge, skills and abilities. In his view, “Humanism in education involves taking into account the individual characteristics of each student, in particular his or her aspirations and interests, the level and quality of his or her abilities, temperament type and character traits” [11].

The most accurate and comprehensive definition of technological competence is given in S.F. Ekhov. "Technological competence is one of the stages in the development of technological culture as an integral part of universal culture" [8].

G.K.Selevko describes the above mentioned technology with important features, such as precise instrumental process control and a guarantee of achieving the set goals. In order to clarify the content of the category of "technological competence", we will consider the approaches used by researchers and identify its important features [9].

A.V. Shatnix and S.F. Ekhov in the logic of personal approach category "technological competence" abilities, Yu.S. Dorokhin personal characteristics show the relationship between approaches based on and based on personal learning. According to A.A.Verbitsky and O.G.Larionova, the process of higher education should be aimed not only at the formation of the competence of the specialist, but also at the formation of a self-fulfilling creative personality [7, 12, 13, 14, 15, 16].

In addition, Uzbek scientists I.B. Askarov in his scientific work on the traditional system of education in the new socio-economic realities, in the main stages of training in the labor market, he turned out to be detached from practice. It was argued that this would hinder the improvement of the social characteristics that would determine the qualifications of future professionals to meet the required requirements, social norms and state education standards [20, 21, 22, 23, 24].

RESEARCH METHODOLOGY

At the stage of development of the information society there is a need to change the educational paradigm aimed at self-development of the individual, the main content of which is to overcome and change the direction of traditional education systems to the information model of education. Such a paradigm is a person-centered education that makes the student a central figure in the learning process with his or her inner needs and motives, subjective experience, and individual psychological characteristics, and focuses on learning independently of learning activities. The main task of the teacher should be to develop the paradigm and the skills to apply them in practice, as well as the selection of appropriate methods, forms and means of teaching to organize students' cognitive activities and individualize and intensify the learning process . In this regard, the psychological and pedagogical factors of the organization of e-learning are of great importance, namely:

- taking into account the functional processes of the psyche of the relevant mental processes;
- increasing the positive internal motivation of students due to the confidentiality and objectivity of the assessment of student achievement;
- activation of intellectual and emotional processes of perception, comprehension and interpretation of educational material through the integration of verbal, visual and audio information;
- establishing a balance between the types of learning activities and the rational use of certain e-learning tools;
- the form of study and the type of presentation of educational material in accordance with the psychological characteristics of the student population and the level of their preparation.

E-learning takes an individual approach in practice, allows you to choose an individual trajectory for learning the material, regulates its pace of development and modern communication technologies, for example: e-mail or e-forums are more effective with each student teacher allows you to work.

With the advent of e-learning tools, students' learning activities are changing, which not only contributes to the process of self-study, but also to the remote control of the teacher and direct settings become an individual group activity with the ability to organize management. This allows each student to study according to an individual plan to achieve a specific goal set by the teacher or the student himself [17, 18, 19].

Significant didactic advantages of e-learning tools over traditional print media are:

- multi-level educational materials that allow the student to study on an individual trajectory;
- educational communication between the student and e-learning tools related to the implementation of rapid feedback;
- modeling of studied objects, events, processes;
- automation of information retrieval processes;
- combining oral, visual and audio educational information;
- collection of statistics on the results of student achievement;
- diagnostic and knowledge management system;
- automating the process of managing students' learning activities [8].

ANALYSIS AND RESULTS

In connection with the above, the issue of choosing e-learning tools for students should be addressed by teachers, taking into account the suitability of these tools for the learning process. The system of development of technological competencies in students through e-learning tools is implemented through the following (Figure 1).

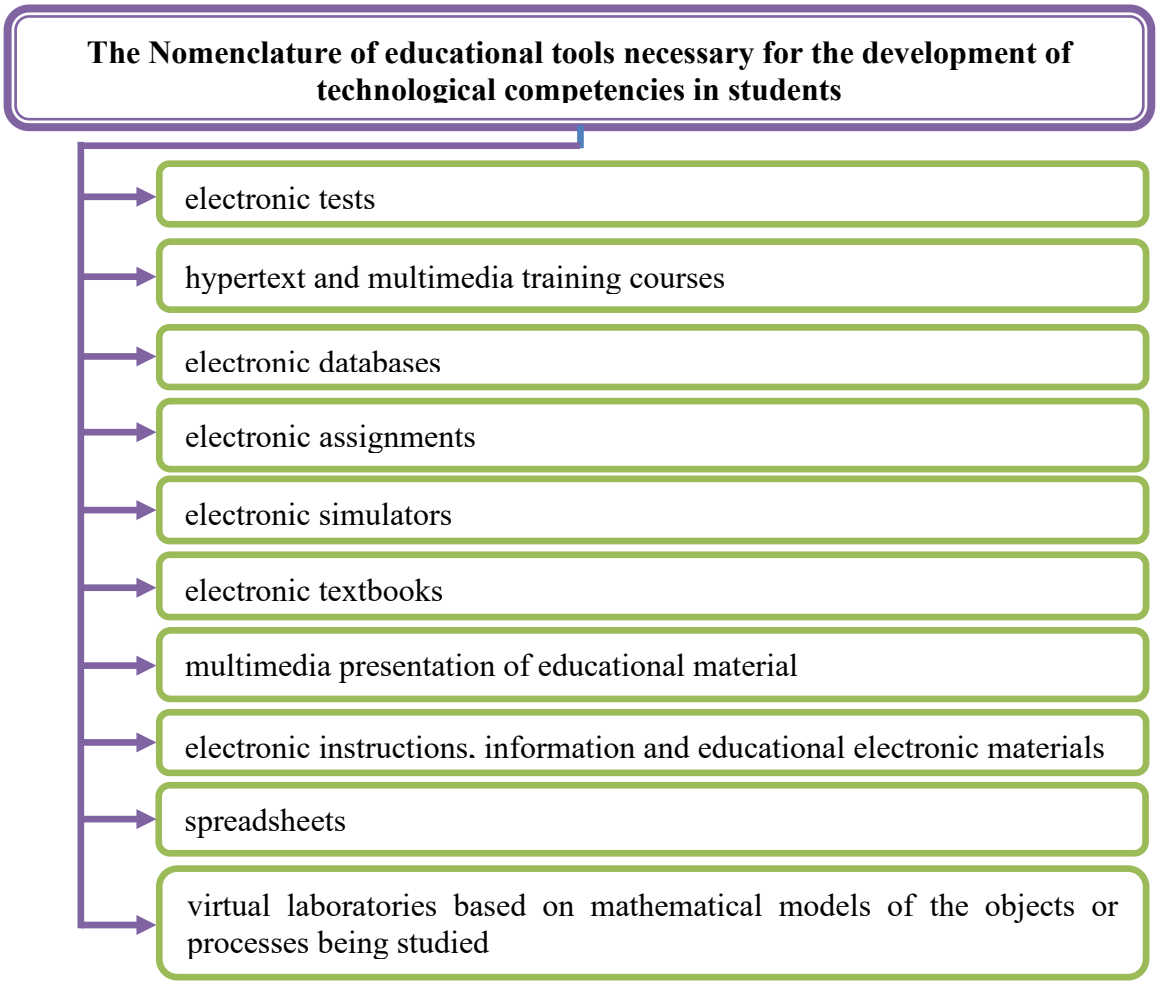

Figure 1. The system of development of technological competencies in students through e-learning tools

At the same time, e-learning tools do not replace traditional approaches to teaching, but significantly increase their effectiveness.

The main thing for a teacher is to strike a balance between the types of educational activities and the judicious use of some e-learning tools in the learning process [9].

The main problems of organizing the learning process using e-learning tools are:

- methods of delivery of training materials;
- the nature of the educational interaction between student and teacher;
- organizational forms and interactive methods of teaching;
- methods of managing educational and cognitive activities;
- methods of monitoring and self-management of student achievement.

Let's move on considering the main ways of organizing the learning process based on the use of e-learning tools.

The following types of e-learning are available and widely used:

- local e-learning (e-learning or self-governing e-learning);
- asynchronous teacher-led distance e-learning;

- ❖ real-time distance e-learning.

The information and communication space, which is common to all participants in the educational process, allows for joint assessment of work processes and results, monitoring the development of each participant and assessing his contribution to teamwork.

Distance learning on the basis of e-learning tools serves to supply educational materials and other information objects, mass media, telecommunication technologies. Such training provides students with remote access to e-learning tools available on the Internet, for example: web pages and portals, distance learning courses, e-libraries, e-workshops, e-encyclopedias, e-dictionaries, e-works, and others [10] .

Helping students to use e-learning tools on a regular basis in this type of learning process puts many responsibilities on the teacher. These are:

The teacher's responsibilities include:

- ➢ consultations;
- ➢ individual assistance;
- ➢ analysis of the problem;
- ➢ individual curriculum planning;
- ➢ leadership;
- ➢ assignment of tasks;
- ➢ remote group dynamics management;
- ➢ setting deadlines;
- ➢ error correction after completing the task.

Learning situations focus on group exchange of ideas (ideas, hypotheses, views). Typically, tasks that require team members to express their opinions and present prepared materials; to cooperate in solving a common problem; joint project preparation; participation in debates and virtual seminars.

CONCLUSIONS

The development of e-learning tools for future engineers will provide a worthy response to the processes of integration, globalization and informatization of society in the education system, as well as help to systematize, generalize specific methods of work, which opens up opportunities. The organization of the educational process with the use of e-learning tools for the full development of the individual and self-education creates conditions for increasing the volume of individual work, helps to form the student's self-study strategy.

The use of e-learning tools is the basis for increasing positive motivation to study a specialty, thereby significantly contributing to the activation of students in the sharing of disciplines.

REFERENCES

1. The Decree of the President of the Republic of Uzbekistan No. PD-5847 of October 8, 2019 "On approval of the Concept of development of the higher education system of the Republic of Uzbekistan until 2030".
2. Resolution of the President of the Republic of Uzbekistan No. PD-3775 of June 5, 2018 "On additional measures to improve the quality of education in higher education institutions and ensure their active participation in the ongoing comprehensive reforms in the country."

3. R.Hamdamov, U.Begimkulov, N.Taylokov. (2010). Information technology in education. Textbook for higher education institutions. State Scientific Publishing House of the National University of Uzbekistan, 120 p.
4. Dyachenko, S. A. (2007). Electronic teaching aids in the activities of the teacher. Central Russian Bulletin of Social Sciences, (2).
5. Pulatova, D. T. (2015). Pedagogical conditions for the introduction of electronic information educational resources in the educational process. *Modern education (Uzbekistan)* , (7).
6. Yuldashev J.G. and others (2008). Interactive learning quality assurance. - T .: «UNICEF».
7. A.V. hatnikh, S.F.Ekhov. ICT in education: a look through the prism of transformations // Educational Technologies and Society (Educational Technology & Society)-2012.V.15,No.3.P. 392.
8. S.F. khov. Trainev I.V. Information communication pedagogical technologies (generalizations and recommendations): Proc. allowance. – M.: Dashkov i K°, 2009. – 280 p.
9. G.K. Selevko. Intellectual systems of modern business education
10. Ball G.O. Humanization of General Education: Social Relevance and Psychological and Pedagogical Guidelines // Continuing Professional Education: Problems, Searches, Prospects / Ed. I.A. Zyazyun. - K .: Vypol, 2000. - P. 134-157.
11. Yu.S. Dorokhin. E-learning: problems, didactics, technology. - Samara: New technology, 2006. - 464 p.
12. A.N.Sergeev. Pedagogical technologies in electronic educational space: traditions and innovations // Educational technologies and society (Educational Technology & Society). - 2013. - T. 16, № 1. - p. 609-626.
13. G.A.Xamatganieva. Development of educational technologies in the initial professional education: Avtoref. dis. ¼ d-ra. ped. nauk. - M., 2008. - 20 p.
14. O.A.Smolina. Development of electronic textbooks as a component of information and educational space // Educational technologies and society (Educational Technology & Society). - 2012. - T. 15, № 3. - p. 464-478.
15. A.A.Verbitskiy, O.G.Larionova. Electronic training: instruments and technologies. - M .: KUDITs-OBRAZ, 2005. - 640 p.
16. Daniyarovna, HS (2021). The Contents of Students' Independent Education and Methods of Implementation. *Journal of Psychology and Education* , *58* (2), 1445-1456.
17. Iskandarovich, UI (2021). Theoretical Fundamentals of Introduction of Electronic Educational Tools to the Educational Process. Central asian journal of theoretical & Applied sciences, 2 (1), 1-7.
18. Umirov, I. (2021). Pedagogical and psychological factors of using e-learning tools in the educational process. *Academic research in educational sciences* , *2* (2).
19. Umirov, I., & Xamrakulov, Yo. (2021). Peculiarities of e-learning and their comparative analysis. *Society and Innovations* , *2* (10 / S), 555-560.
20. Askarov, I. B (2017). The main stages of preparing future vocational education teachers for research activities. *Eastern European Scientific Journal* , (5).
21. Askarov, I. B. (2017). Management and planning of the process of formation of research skills and abilities of future teachers of vocational education. School of the Future, (2), 10-15.
22. Askarov, I. B. (2017). Basic approaches and principles of preparing future vocational education teachers for research activities. Current Research in the Modern World, (2-6), 25-32.
23. Askarov, I. B. (2016). Preparation for research activities of the future teacher of vocational training. In Teaching Excellence (pp. 39-42).