THE METHODOLOGICAL IMPROVEMENT OF DEVELOPING STUDENTS' INFORMATION COMPETENCE THROUGH INTERDISCIPLINARY INTEGRATION

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Annotation. The article discusses the methodological improvement of developing students' information competence through interdisciplinary integration, with a focus on the digitalization of education. It addresses the opportunities provided by modern information technologies and the issues related to their effective use. The importance of information competence in enabling students to solve problems in their professional activities is emphasized. The content and significance of methodological enhancement in developing students' information competence within interdisciplinary contexts are thoroughly explored. Additionally, the article provides insights into the development of information competence among future engineers.

Keywords: Information competence, information, professional activity, digitalization, digitalization in education, digital literacy.

Аннотация. В статье изложено содержание методического совершенствования развития информационной компетентности студентов в междисциплинарной связи, направленного на цифровизацию образования. Рассмотрены возможности современных информационных технологий и вопросы их использования, а также важность информационной компетентности в устранении проблем в профессиональной деятельности студентов. Освещены содержание и значимость методического

совершенствования развития информационной компетентности студентов в междисциплинарной связи. Приведены сведения о развитии информационной компетентности будущих инженеров.

Ключевые слова: информационная компетентность, информация, профессиональная деятельность, цифровизация, цифровизация в образовании, цифровая грамотность.

Introduction

In recent years, normative foundations have been established in our country to develop the information competence of students in higher education institutions, enhance their intellectual potential, and foster their professional abilities based on knowledge, skills, and practical experience. The strategy and mechanisms for the innovative development of our country are fundamentally linked to how effectively we utilize the intellectual and scientific-technical potential created within the state. Priorities have been set to deepen the study of subjects and to create effective mechanisms for implementing scientific and innovative achievements into practice. In this regard, the pedagogical opportunities to expand the digital literacy of students in technical higher education institutions and their effective use of information technology tools are being actively developed [1].

The Decree No. PF-6079 of the President of the Republic of Uzbekistan dated October 5, 2020, “Digital Uzbekistan - 2030” Strategy and measures for its effective implementation [2], the Resolution No. PQ-4851 dated October 6, 2020, “On further improvement of the education system in the field of information technologies, development of scientific research, and integration with the IT industry” [3], the Concept for the Development of the Higher Education System of the Republic of Uzbekistan until 2030, as well as other relevant normative legal documents, are being utilized to implement the tasks set forth in these areas.

Main Body

Nowadays, in the rapidly changing conditions of digitalization in society, there is a growing demand for qualified specialists who possess professional mobility and are capable of working effectively. Information technologies are deeply penetrating all spheres of human life and activity. Digital technologies not only improve the quality of education but also reduce unnecessary efforts and costs. At the same time, the modernization of the higher education system in the country, the creation of opportunities to enhance students' intellectual potential and readiness for professional activity, lead to the development of science, technology, and the growth of production.

Digital literacy formation is manifested in the ability to search for information, evaluate it, and use digital technologies, communication tools, or networks to access information; to understand and utilize data in various formats obtained from different sources; and to develop the ability to perform tasks in a digital environment.- ochiq ta’lim resurslari – oliy ta’lim muassasalari talabalarining foydalanishi mumkin bo‘lgan har qanday ta’lim resurslari (masalan, darsliklar, multimedia ilovalari, striming videolar va boshqalar), ulardan foydalanish imkoniyatlarining mavjudligi;

Social networks are websites or applications that enable online communication with people in networks based on common interests or activities (such as Facebook, Twitter, Instagram, and others). In an information society, social networks can be used to improve online communication with students, organize interactive educational courses, and strengthen students' knowledge and skills;

Mobile technologies (smartphones, tablets, laptops, and notebooks) are devices that provide students with more flexible approaches to learning anytime and anywhere, as well as ensure the connection between traditional and non-traditional education;

Internet of Things (IoT) resources refer to a network of computing devices embedded in everyday objects, in addition to computers and smartphones, which allow sending and receiving data via the Internet;

Artificial Intelligence (AI) generally refers to machines, especially computers, that simulate human cognitive functions such as learning, speech, and problem-solving, facilitating human-like thinking or behavior. AI applications include expert systems, speech recognition and natural language processing, computer vision, and imaging technologies [4].

Currently, artificial intelligence is applied in education in the following forms: adaptive learning programs and software, observation and monitoring diagnostics, automated assessment, and performance implementation;

Virtual and visual environments. A virtual environment is a computer simulation of an environment where a person can interact. The individual connects to this simulated environment and is able to manipulate objects or perform a series of actions. A visual environment is a representation of the real environment, whose elements are enhanced by computer-generated images; these correspond to the physical environment in real time. The virtual environment changes a person's current perception of the real environment, while the visual environment replaces the real environment with its simulated version;

With the increasing size of databases and the growing number of devices connected to the Internet, digital data is being produced at an unprecedented speed in the history of society and humanity [5].

Thus, the four-component stages of developing students' information competence through interdisciplinary integration are defined as shown in Figure 1.

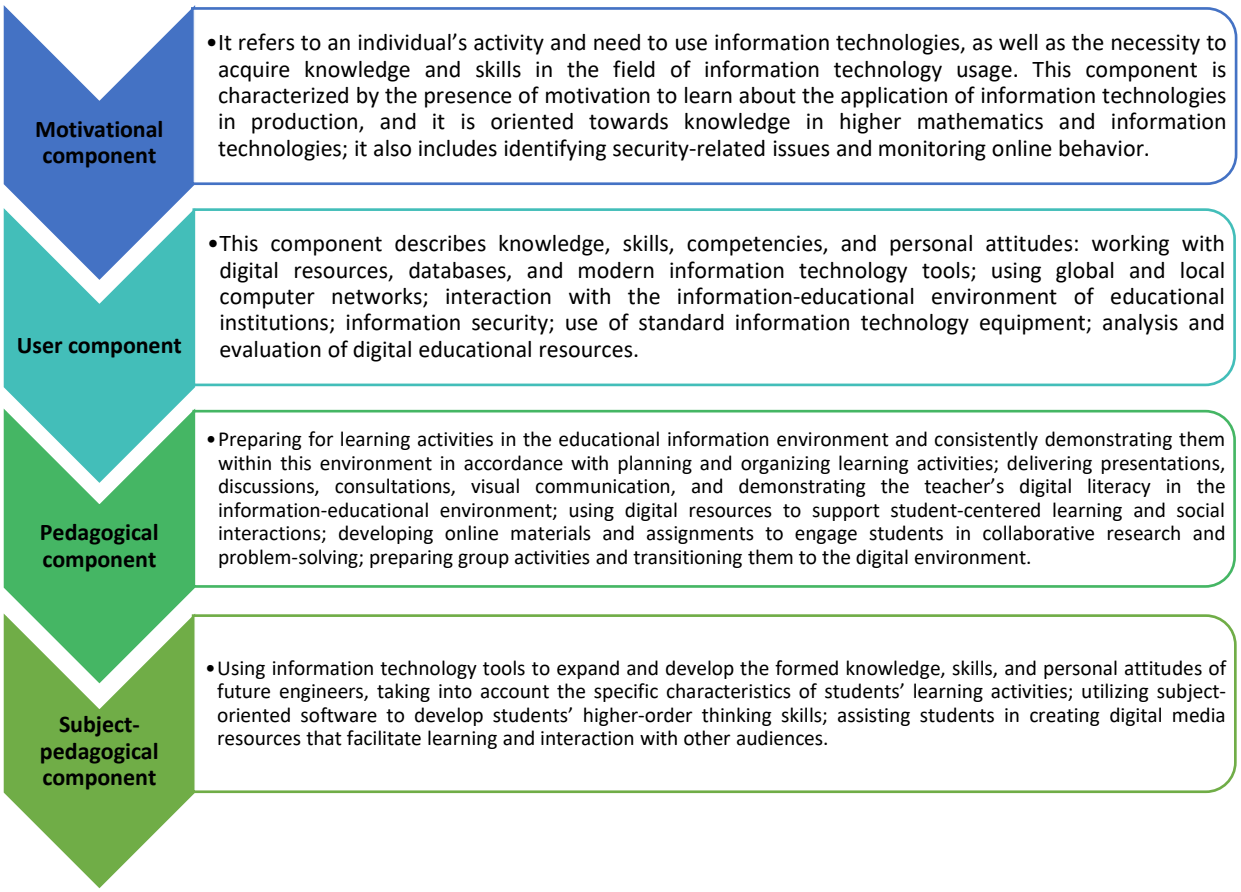
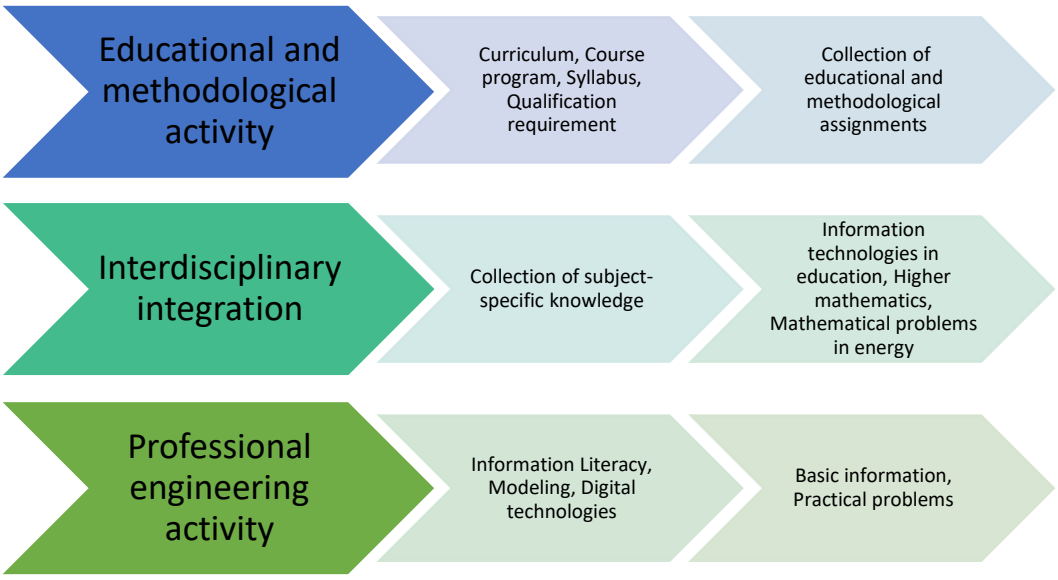


Figure 1. Components developing the information competence of students in technical higher education institutions through interdisciplinary integration

The order of the general user component includes the importance of adhering to the rules of working with information technology tools when using new equipment and technologies, taking safety measures, and fostering attitudes aimed at developing the use of information technology tools in the digitalization of education.

In the model of developing information competence among students of higher education institutions, a set of educational-methodical tasks is presented (Figure 2).



Pic.2. Set of educational and methodological tasks

A set of educational and methodological tasks, which forms the basis of teaching and methodological activities, was developed taking into account interdisciplinary integration in the development of information competence among students of higher education institutions[6-19].

The set of educational and methodological tasks serves as a special didactic tool aimed at developing information competence and ensuring the purposeful preparation of students of technical higher education institutions as future engineers for professional activities in an information society through the development of their methodological skills. Based on the characteristics of the included tasks and their level of complexity, the educational and methodological tasks are divided into lower, intermediate, and advanced stages.

Conclusion

Axborot kompetensiyasi zamonaviy sivilizatsiyaning eng muhim texnologik yutuqlaridan biri bo‘lgan axborotlashgan tizimni yaratish va qo‘llash uchun asos bo‘ladi. Bugungi kunda sifat jihatidan rivojlanish bosqichining eng muhim elementi sifatida axborot texnologiyalari vositalari deyarli har qanday faoliyat uchun zarur texnologik vosita bo‘lib xizmat qilmoqda.

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