DEVELOPMENT OF DESIGN SKILLS IN FUTURE SPECIALISTS IN THE FIELD OF INFORMATION TECHNOLOGIES

Abstract. The article notes that design competence is a decisive factor for improving education, in particular during distance learning. It combines professional knowledge, intellectual skills and the ability to predict the result. This competence consists of various aspects, such as motivational-targeted, constructive, organizational, communicative and others, each of which plays an important role in the formation of future IT professionals. Education, as a key social institution, opens up opportunities for acquiring knowledge, developing practical skills, and forming a civic position. During distance learning, difficulties arise related to the organization of training and the solution of technical aspects. However, the use of digital technologies allows for real-time learning and feedback.

Modern education faces numerous challenges, the priority among which is the creation of a safe and favorable learning environment, as well as ensuring the high quality of the acquired knowledge. To achieve these important goals, it is necessary to implement appropriate pedagogical conditions, in particular, to update the content of education and use advanced technologies. The formation of project competence of future specialists in the field of information technologies is based on key principles, such as humanism, democracy, innovation and personal goal setting. In this context, the priority directions for the development of such competence are the creation of favorable conditions for learning, an emphasis on a person-oriented approach, and the integration of information technologies into the educational process.

Design competence acts as a key principle contributing to the renewal of education, especially during distance learning. For future information technology specialists, design competence means personal qualities, management and organizational skills, methodical skills, which allow to effectively realize the ability to design centers of training, education and development of educational subjects.

Keywords: design competence, pedagogical competence, informatization, computerization, future specialists of information technologies.
РОЗВИТОК ДИЗАЙНЕРСЬКИХ НАВИЧОК У МАЙБУТНІХ ФАХІВЦІВ У СФЕРІ ІНФОРМАЦІЙНИХ ТЕХНОЛОГІЙ

Анотація. У статті зазначається, що проектна компетентність є вирішальним фактором удосконалення освіти, зокрема під час дистанційного навчання. Він поєднує в собі професійні знання, інтелектуальні здібності та вміння прогнозувати результат. Ця компетентність складається з різних аспектів, таких як мотиваційно-цільовий, конструктивний, організаційний, комунікативний та інші, кожен з яких відіграє важливу роль у формуванні майбутніх ІТ-фахівців. Освіта, як ключовий соціальний інститут, відкриває можливості для здобуття знань, формування практичних навичок, формування громадянської позиції. Під час дистанційного навчання виникають труднощі, пов’язані з організацією навчання та вирішенням технічних моментів. Однак використання цифрових технологій дозволяє навчатися в режимі реального часу та отримати зворотній зв’язок.

Сучасна освіта стикається з численними викликами, пріоритетними серед яких є створення безпечного та сприятливого навчального середовища, а також забезпечення високої якості отриманих знань. Для досягнення цих важливих цілей необхідно реалізувати належні педагогічні умови, зокрема оновити зміст освіти та використовувати передові технології. Формування проектної компетентності майбутніх фахівців у сфері інформаційних технологій базується на ключових принципах, таких як гуманізм, демократизм, інноваційність та особистісна цілісність. У цьому контексті пріоритетними напрямами розвитку такої компетентності є створення сприятливих умов для навчання, акцент на особистісно-орієнтованому підході, інтеграція інформаційних технологій у навчальний процес.

Проектна компетентність виступає ключовим принципом, що сприяє оновленню освіти, особливо під час дистанційного навчання. Для майбутніх фахівців з інформаційних технологій під проектною компетентністю розуміють особистісні якості, управлінські та організаторські здібності, методичні навички, які дозволяють ефективно реалізувати вміння проектувати центри навчання, виховання та розвитку навчальних предметів.

Ключові слова: проектна компетентність, педагогічна компетентність, інформатизація, комп’ютеризація, майбутні спеціалісти інформаційних технологій.

Formulation of the problem. The development of society depends on political, socio-economic and socio-cultural processes, which have a fast and irreversible nature, and are determined by the rapid pace of informatization, computerization and scientific and technical progress. Education plays a leading role...
in this context, having a direct impact on the formation of the worldview of an individual and society as a whole. Modern challenges demand from education constant changes, flexibility and rapid transition to different formats. The future is characterized by growing uncertainty, which leads to the disappearance of many traditional professions and the emergence of new ones with unknown characteristics today. Therefore, education increasingly emphasizes the formation and development of general competencies and emphasizes the need for continuous self-improvement throughout life. In the lifelong learning paradigm, formal education is seen as the starting point.

**Analysis of recent research and publications.** Education is the only social institution through which every person passes, gaining knowledge, practical skills and forming his professional preferences and stable citizenship. The beginning of 2020 marked the beginning of distance education in Ukraine. This challenge has become extremely difficult for all participants of the educational process: teachers, students and parents. Organizing high-quality education using digital technologies, inspiring and motivating students, as well as solving technical problems turned out to be extremely difficult tasks. However, Ukraine is not an exception - no country, no educational system in the world was ready for this. The basis of distance learning is the independent interactive work of the learner using specially developed educational materials. Thanks to new technological possibilities, the learning process takes place synchronously with teachers and classmates, with the possibility of constantly receiving feedback [1–4].

The concept of "distance learning" appeared in Europe at the end of the 18th century. In Ukraine, January 21, 2004 can be considered the date of the official start of the introduction of distance learning, when the "Regulations on distance learning" were approved by the Ministry of Education and Science. Then the introduction of new technologies in the field of education began, but mass distance learning is just beginning. Among promising specialties, the branch of information technologies (Information Technologies, IT) is of particular importance. This direction has already changed the world and continues to play an important role in its further development. Highlighting problems related to the use of digital technologies in the organization of remote interaction of all participants in the educational process in the field of training information technology specialists remains relevant.

**The purpose** of the article is to substantiate the peculiarities of the formation of project competence in future information technology specialists.

**Presenting main material.** The state standard of basic and full general secondary education is oriented towards the fulfillment of the tasks of educational institutions and sets requirements for the level of education of primary and higher education students. This standard is based on the principles of person-oriented, competence-based and activity-based approaches embodied in educational programs and reflected in the requirements for the learning outcomes of basic and comprehensive general secondary education [2, 3].
The concept of "competence" (lat. competents - suitable, capable) defines the scope of powers of any official or body, as well as the level of knowledge and experience in a specific field. Competence determines the level of professionalism of an individual, and its achievement consists in acquiring the necessary competencies. The term "competence" describes a set of interdependent qualities of a person (knowledge, abilities, skills, methods of activity) necessary for high-quality and productive work. Competence is defined as the possession of relevant competencies [1, 3].

*Pedagogical competence*, as a system of scientific knowledge, intellectual and practical skills, personal qualities and formations, ensures self-realization, self-preservation and self-improvement of a specialist's personality in the process of professional activity. Thus, competence is a key indicator of a competitive personality, which allows one to perform work competently, make decisions in problematic situations, and achieve set goals [1, 4].

Design competence is an important conceptual principle that contributes to updating the content of education, in particular during distance learning. It combines professional knowledge, intellectual skills, organizational skills and the ability to predict the final result (tab. 1). The design competence of future information technology specialists is understood as personal qualities, management and organizational skills, methodical skills, which allow to effectively realize the ability to design centers of training, education and development of education seekers. For this, it is necessary to possess the skills of applying pedagogical theory in practical activities, to have mobility of knowledge, flexibility of methods of professional activity and critical thinking [2, 3].

In the structure of *project competence* of future information technology specialists, different components are distinguished - functional types of activity, each of which includes a set of skills necessary for its implementation [3]:

1. *Motivational-targeted* - includes defining the goal, using a system of techniques for stimulation, implementing interrelated goals (educational, educational, developmental) and the expected final result.
2. *Constructive* - covers the selection of educational and educational material topics in accordance with the age and individual characteristics of students, planning and construction of the pedagogical process, determining the sequence of actions - structure, stages, steps, designing the educational and material base.
3. *Organizational* - includes the ability to involve students in various types of activities, organize the student body and turn it into a tool of pedagogical influence on the individual.
4. *Communicative* - includes establishing relationships with students, colleagues, parents, members of the public, establishing cooperation with partner schools abroad.
5. *Cognitive* - includes mastering the system of individual resources of the personality, which determine the peculiarities of the students' cognitive attitude to
the humanistic solution of problem situations, as well as the nature of the reproduction of reality in the individual mind.

6. Operational - includes a set of abilities and skills that ensure the success of the management decision-making process.

7. Reflective and personal - includes the ability to find the necessary information to satisfy cognitive interests, critical analysis of one's own achievements, generation of new ideas and alternative solutions, ability to self-improvement.

8. Control-regulatory - includes the ability to carry out simultaneous self-monitoring of the progress of solving assigned tasks and student control over the correctness of the performance of educational operations, the accuracy of answers.

9. Evaluative-resultative - includes the ability to objectively evaluate achievements in the application of creative technologies in one's own project activity, the ability to analyze and reflect on one's own creative activity; the ability to self-improve.

Table 1.

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<th>Components of project competence in future information technology specialists</th>
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<td>Components of project competence</td>
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<td>Information and media competence</td>
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All these aspects are manifested in the work of future information technology specialists according to the following criteria for the success of their implementation according to the relevant knowledge and skills [2, 3]:

1. Communicative (sufficient level of mastery of both verbal and non-verbal communication skills).
2. Organizational (competent and effective organization of work).
3. Constructive (creating a favorable atmosphere of cooperation).
4. *Perceptive* (the ability to penetrate the inner world of the pet, observation and understanding of his personality and mental states).

5. *Suggestive* (the ability to influence students emotionally and volitionally).

6. *Didactic* (the ability to provide educational material in an accessible manner).

7. *Cognitive* (developed properties of cognitive processes and intelligence, which are revealed and developed in the course of successfully solving problems and tasks).

8. *Self-regulatory* (ability to control one's emotions and behavior depending on the situation).

The main strategic task of modern education is to create a comfortable and safe environment and also to ensure the high quality of acquired knowledge by future information technology specialists. For the successful implementation of the strategic tasks of education development and the formation of project competence, it is necessary to create appropriate pedagogical conditions, such as updating the content of school education and applying modern technologies of education and training. The formation of design competence by future information technology specialists is based on the principles of humanism, democracy, systematicity, innovation, integration of science into educational processes, anticipatory development, openness of education, personal goal setting, the choice of an individual educational trajectory and training productivity.

The priority directions for the formation of design competence by future information technology specialists are [1, 4]:

1. Creation of favorable conditions for the formation of educational levels and a personally oriented, open system of education in an educational institution.

2. Creating a safe, comfortable and developing educational environment in an institution or online space to achieve the goals and fulfill the higher education program.

3. Emphasis on technologies of personally-oriented education and upbringing, ensuring purposeful systematic development of the individual with an innovative type of thinking, behavior and culture of protection of his rights.

4. Complete informatization of educational and management processes in the educational institution.

5. Introduction of qualitative changes in the content of training, retraining and professional development of pedagogical workers.

The indicated main directions of innovation processes in higher education institutions will contribute to the development of design competence in future information technology specialists, which will allow them to work effectively both in face-to-face and distance learning.

**Conclusion.** Thus, modern education is characterized by complex challenges, the most important of which is the creation of a favorable, safe environment and
ensuring the high quality of acquired knowledge. In order to achieve these strategic goals, it is necessary to implement appropriate pedagogical conditions, in particular, updating the content of education and using the latest technologies. The formation of project competence of future specialists in the field of information technologies is based on important principles, such as humanism, democracy, innovativeness and personal goal setting. At the same time, the main directions for the development of such competence are the creation of favorable learning conditions, an emphasis on a person-oriented approach, and the introduction of information technologies into the educational process.

The field of information technologies is characterized by rapid development, and in order to maintain the gained pace, high-class specialists are becoming more and more necessary. At the same time, specialists should meet the requirements without which they will not be able to successfully cope with their professional tasks. First of all, specialists should have an inclination towards mathematical sciences, informatics and working with technology, including computers. They need to have an analytical mind, a good memory and the ability to work with a large amount of information. Indispensable qualities of all employees in this field, regardless of their position, are responsibility, organization, stress tolerance, and the ability to learn independently.

References:


Література:


