NEW INFORMATION TECHNOLOGIES
IN THE CONDITIONS OF DISTANCE EDUCATION

НОВІ ІНФОРМАЦІЙНІ ТЕХНОЛОГІЇ
В УМОВАХ ДИСТАНЦІЙНОЇ ОСВІТИ

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ABSTRACT

The article examines the possibilities of using new information technologies in the professional activity of a subject teacher, with the aim of improving various approaches to learning, focused on the development of the student's intellectual potential in the conditions of distance education.

Competence - includes a set of interconnected qualities of a person (knowledge, abilities, skills, methods of activity) that are set in relation to a certain range of subjects and processes and necessary for high-quality productive activity in relation to them.

Competence is a person's possession of appropriate competence, which includes his personal attitude towards it and the subject of activity.

Competency approach is an approach that focused on the result of education, and the result is not the amount of information learned, but the ability of a person to act in various problem situations.

In our work, we focused on the issue of formation and development of informational competence of subject teachers. By the information competence of the subject teacher, we will understand not only the use of various information tools, but also their effective application in pedagogical activities in the conditions of distance education.

According to the new regulation on certification, if a teacher does not own a computer, he cannot be certified to the first or higher category. To increase the level of the teacher's information competence, it is recommended to: participate in seminars of various levels regarding the use of new information technologies in educational practice; participate in professional contests, online forums and forums; use a wide range of digital technologies and tools (text editors, image processing programs, presentation preparation programs, electronic spreadsheets) in preparation for lessons, electives, and project activities; ensure the use of Internet resources; form a bank of educational tasks that are performed with the active use of new information technologies; to develop own projects regarding the use of new information technologies in the conditions of distance education.

It is also considered how the use of new information technologies facilitates the activity of the teacher in conducting classes. Possibilities of using new information technologies at all stages of conducting a modern lesson in the conditions of distance education.

Key words: *new information technologies, information competence, multimedia presentation, distance education.*

Introduction. In accordance with the Concept of Modernization of National Education, the main goal of teaching staff training is the formation of a qualified employee of the appropriate level and profile, competitive on the labor market, competent, responsible, fluent in his profession and oriented in related fields of activity, possessing modern pedagogical and information technologies, capable of constant professional growth, social and professional mobility [2].

Analysis of current research. The transition to an information society entails the development of the information culture of all members of society. Pedagogical studies by L. Bakhtiyarov, M. Vikulin, G. Kruchynina, E. Kulik, S. Markova, S. Maiorova, L. Shevtsova and others show that the development of students' information culture is the concern of teachers of all subject areas.

By information culture, we understand the achieved level of organization of information processes, the degree of people's satisfaction in information communication, the level of efficiency in the creation, collection, storage, processing, transmission, presentation and use of information that provides a holistic vision of the world, predicting the consequences of decisions made [1–6].

Thus, there was a need for a new model of education, built on the basis of the use of new information technologies, which implements the principles of person-oriented education. In connection with the reorganization of education in Ukraine, the active processes of informatization as one of the leading directions of modernization of education, increasing the role of information as an important resource, the importance of teacher training in the field of effective use of new information technologies in the conditions of distance education is increasing. One of the main directions of informatization of education is the use of new information technologies in order to improve various approaches to learning, focused on the development of the student's intellectual potential in the conditions of distance education. A modern teacher must possess the basic qualities of a subject teacher (basic ICT competence), that is, possess the knowledge and skills necessary to solve educational tasks with the help of new information technologies. The subject teacher must have subject-oriented information competence, that is, master specialized technologies and resources developed in accordance with the requirements for the content of one or another educational subject, and also form readiness for their implementation in educational activities during distance education.

Research methods and techniques. The main research method of this article is analytical. The formation of conclusions is possible under conditions of careful analysis of the current state of the problem.

Results and discussions. The introduction of information technologies into the professional activity of teachers is inevitable nowadays. Teacher professionalism is a synthesis of competencies that include subject-methodical, psychological-pedagogical and informational components [5].

Possessing information competence, the teacher should not only strive to use new information technologies in the conditions of distance education, but also model and design information and educational activities.

By the information competence of the subject teacher, we will understand not only the use of various information tools, but also their effective application in pedagogical activities during distance education.

For the formation of basic information competence, it is necessary: the presence of ideas about the functioning of PCs and the didactic possibilities of new information technologies; mastering the methodical basics of preparing visual and didactic materials using Microsoft Office tools; use of the Internet and digital educational resources in pedagogical activities; formation of positive motivation to use new information technologies in the conditions of distance education.

The use of new information technologies significantly facilitates the teacher's activities: keeping various documentation (planning, lesson notes, reports, etc.); a subject teacher can prepare various didactic materials using a computer; the teacher can use a multimedia projector, interactive whiteboards, and electronic magazines. A very important role is played by the use of electronic textbooks in lessons, as well as in extracurricular activities. Thanks to the interactive presentation of the material, students develop a creative approach to learning, the student acquires the skills of independent work, the level of perception of the material increases, the student takes an active position during the entire lesson, when studying any topic; the subject teacher can independently develop tests, control programs, using the following software (in the Linux OS – Keduca, in the Windows OS - Delphi, Java Script, Turbo Pascal); the subject teacher can learn the technologies of creating sites and the basics of Web design using the HTML hypertext markup language or the Java Script scripting language; the use of the Internet opens up wide opportunities for the teacher (distance learning; online testing; participation in distance Olympiads; conferences; virtual excursions; searching for various information.

The teacher's information competence, as part of his professional competence, determines the ability to solve professional problems that arise in real situations of pedagogical activity, and a competent subject teacher must use new information technologies in the conditions of distance education.

The main methodological problem of teaching shifts from «how best to tell the material» to «how best to show». Learning knowledge related to a large volume of digital and other specific information through an active dialogue with a personal computer is more effective and interesting for a student than studying boring pages of a textbook. With the help of educational programs, the student can simulate real processes, which means – see causes and consequences, understand their meaning.

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The creation of multimedia presentations by both the teacher and students, the performance of creative and research works, as well as the project activities of students using new information technologies contribute to learning, cooperation, group work, the formation and development of students' analytical skills, and the improvement of information literacy.

Multimedia presentations are used so that the speaker (student or teacher) can visually demonstrate additional materials to my message on a large screen or monitor, for example, a video recording of an excerpt from a feature film, pictures, illustrations, diagrams, etc.

Performing creative tasks (writing notes, miniature works, essays with photos, illustrations, arranging interviews, creating a school newspaper in electronic form, lesson booklets, diagrams, tables), scientific research works for defense at a scientific-practical conferences of schoolchildren with the possibility of checking these works by the teacher and for further use of this material in the educational process.

The use of new information technologies in education allows for the formation of special skills in children with different cognitive abilities, allows to make lessons more visual and dynamic, more effective from the point of view of learning and development of students, facilitates the work of the teacher in the lesson and contributes to the formation of key competencies of students.

The project method allows students to develop their research skills, activate their activities, and use the knowledge they have acquired in practice. Information technologies can be used very widely when creating mini-projects for the lesson.

Checking the mastery of the material can be quickly carried out by frontal or individual testing with subsequent analysis, displaying the results in an electronic journal on the teacher's computer. This form of work allows you to have operational information about the state of the process of assimilation of knowledge on this topic by each student. The students' interest in the studied subject is growing. The motivation of students' cognitive activity increases due to the multimedia capabilities of the computer.

ICT can be used at all stages of the lesson:

When explaining new material: presentations; informational Internet sites; information resources on disks.

When practicing and consolidating skills: computer training programs; computer simulators; puzzles; computer games.

At the knowledge control stage: computer tests (open, closed); crossword puzzles (with automatic result processing).

At the stage of students' independent work: digital encyclopedias; dictionaries; directories; tables; templates; electronic textbooks; integrated tasks.

For students' research activities: digital laboratories; Internet.

Color and multimedia design is an important means of organizing the perception of information material. Students imperceptibly learn to note one or another feature of an informational message that (seemingly involuntarily)

reaches their consciousness. Instead of magnets and buttons, illustrations on cardboard, chalk on a blackboard, the image on the screen comes.

Conclusions. As a result of learning with the help of new information technologies, we can talk about a change in priorities from students' assimilation of ready-made academic knowledge during the lesson to independent active cognitive activity of each student, taking into account his capabilities. By organizing work with tests in class and outside of class, in electronic form, students develop basic «informational» competencies, and for many, they are the most relevant today and will be necessary for them in the future. At the same time, the level of learning of weak students rises, and strong students are not provided.

The use of new information technologies in distance education allows: to develop students' research skills, creative abilities; increase the motivation of learning; to form among schoolchildren the ability to work with information, to develop communication skills; actively involve students in the educational process; qualitatively change the control over the students' activities; bringing the schoolchild to the achievements of the information society.

The use of new information technologies in the conditions of distance education necessarily leads to positive learning results, namely: knowledge acquires the quality of systematicity; skills become generalized, contribute to the complex application of knowledge, their synthesis, the transfer of ideas and methods from one science to another, which is the basis of a creative approach to the scientific and artistic activity of a person in modern conditions; the worldview orientation of students' cognitive interests is strengthened; their convictions are formed more effectively, comprehensive personality development is achieved; the optimization and intensification of educational and pedagogical activities is increasing.

A modern teacher must make full use of the opportunities provided by new information technologies in the conditions of distance education in order to increase the effectiveness of pedagogical activities.

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АНОТАЦІЯ

У статті розглянуті можливості використання нових інформаційних технологій у своїй професійній діяльності вчителя-предметника з метою вдосконалення різних підходів до навчання, орієнтованих на розвиток інтелектуального потенціалу учня в умовах дистанційної освіти.

Компетенція включає сукупність взаємопов'язаних якостей особистості (знань, умінь, навичок, способів діяльності), що задаються по відношенню до певного кола предметів і процесів, необхідних для якісної продуктивної діяльності.

Компетентність – володіння людиною відповідною компетенцією, що включає його особисте ставлення до неї і предмета діяльності.

Компетентнісний підхід – це підхід, який акцентував увагу на результаті освіти, причому результатом розглядається не сума засвоєної інформації, а здатність людини діяти в різних проблемних ситуаціях.

У своїй роботі ми спинились на питанні формування та розвитку інформаційної компетентності вчителів-предметників. Під інформаційною компетентністю вчителя-предметника ми будемо розуміти не тільки використання різних інформаційних інструментів в умовах дистанційної освіти.

Згідно з новим положенням про атестацію, якщо вчитель не володіє комп'ютером, то він не може бути атестований на першу або вищу категорію. Для підвищення рівня інформаційної компетентності вчителя рекомендується: брати участь у семінарах різного рівня щодо застосування нових інформаційних технологій у навчальній практиці; професійних конкурсах, онлайнових форумах і педрадах; використовувати при підготовці до уроків, на факультативах, у проєктній діяльності широкий спектр цифрових технологій і інструментів (текстових редакторів, програм обробки зображень, програм підготовки презентацій, електронних таблиць); забезпечити використання ресурсів Інтернет; формувати банк навчальних завдань, які виконуються з активним використанням нових інформаційних технологій; розробляти власні проєкти щодо використання нових інформаційних технологій в умовах дистанційної освіти.

Також розглянуто, як використання нових інформаційних технологій полегшує діяльність вчителя у проведенні занять. Можливості використання нових інформаційних технологій на всіх етапах проведення сучасного уроку в умовах дистанційної освіти.

Ключові слова: *нові інформаційні технології, інформаційна компетентність, мультимедійна презентація, дистанційна освіта.*