

Tools and Methods of Formation of Professional Competence of Future Teachers of Computer Science and Information Technologies

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Abstract: This article analyzes the process of effective use of methods and tools aimed at building professional competence in the process of professional competence, qualification requirements for modern professionals, training of teachers of computer science and information technology.

Key words: Competence, professional competence, modern specialist, insert method, traditional course, professional training, professional activity.

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The concept, study, place and importance of a competent approach. The term competence is a term widely used in the modern literature to cover issues such as education, staff selection, performance appraisal, educational success, professional orientation, and so on. Today, it is considered undefined in terms of meaning. In the 1970s, it emerged in many Western European countries, where competence marked a new direction in professional training. The term "competence" refers not only to the acquisition of individual, technical or experimental knowledge and skills, but also to the set of abilities and skills that an individual can serve as a basis for further personal development. But the idea is different in all European countries. In Germany, for example, since the 1980s, the phrase "professional competence" has been used to describe a goal that must be achieved through basic vocational training. This training course consisted of a combination of interdependence, technical complexity, and general knowledge, which allowed the graduate to continue working

in a variety of workplaces. This general skill cannot remain unchanged, it must evolve, because the requirements and conditions of the labor world also change in the interests of the individual and society. [1]

Competence - the ability to do something effectively, to perform according to the standards applicable to a particular profession.

The following types of competencies are available:

- Behavior (individual)
- Technical
- General
- Special
- Primary
- "Executor."
- Differential

1. Behavioral competence - the competence that characterizes the individuality of a person in the performance of his professional duties. It includes interpersonal relationships, management style (style), analytical skills, goal-oriented. These are "soft requirements" or "soft". competencies.

2. Technical (professional) competence is a competence that is directly related to the results of labor, standards of professional performance. These are referred to as 'strict requirements' or 'strict competencies'.

3. General competence - is the competence that characterizes all people engaged in a particular profession. For example: people involved in management. At the same time, it does not matter what organization a person works for or what position he holds.

4. Special competence - means the competence required to effectively perform specific professional duties.

5. Primary competence - the basic competencies that the employee needs to perform the assigned professional tasks.

6. Performance competence - is the competence that determines the quality of the result achieved. According to W. Woodraf, it is difficult to feel the difference between primary and executive competencies. This requires a certain level of competence.

7. Differential competence - it is the competence that helps to distinguish effective performers. This type of competence exists in the form of models that are influenced by how one should behave in the performance of one or another professional task. This may be done with the consent of the manager and the executor performing professional duties.

Use of teaching methods and tools aimed at developing competence in the teaching of computer science and information technology.

The following conditions, defined in the State Educational Standards of Higher Education, were taken as a basis for the development of a model of the educator based on the requirements for the individual [10]:

□ areas of activity of the teacher: education; management

□ types of pedagogical activity: teaching; methodical; educational;

organizational; scientific (leadership); staffing; entrepreneurship; expertise and others.

□ pedagogical institutions: pre-school education; general secondary education; secondary special, vocational education; higher education; postgraduate education; extracurricular education; education authorities. The content of the requirements for the teacher's personality was substantiated and a description of each of them was given.

The information provided should be relevant to the content of the lesson, as well as tasks and tasks that provide students with the necessary skills and competencies, determine the amount of information that students need to master, presented in a logical system, must conform to the principles of continuity and continuity, and finally be able to respond to the principle of structurality. It is also important that the information is relevant to the students' level of preparation.

The means of modern information technology include: computer, scanner, video camera, LCD projector, interactive whiteboard, fax modem, telephone, e-mail, multimedia, Internet and Intranet networks, mobile communication systems, database management systems, artificial intelligence systems.

The problem with teaching methods is briefly "how to teach?" can be expressed using the question. But the answer to that question is, "Why teach?", "What should I teach?" and "Who should be taught?" You need to have enough information on issues such as This is the only way to solve the problem of choosing teaching methods that fully meet the purpose and content of teaching, the level of thinking activity of students.

Teaching methods are multifaceted. That is why there are so many classifications. In these classifications, methods are grouped by one or more characters.

1. Traditional classification. A source of knowledge is taken as a general sign.

-Practical: Experiment, Exercise, Independent work, Laboratory work.

-Exhibition: Illustration, Observation.

-Oral: Explanation, Storytelling, Conversation, Lecture.

- Work with the book: Reading, Quick Review, Quote, Narration, retelling, Abstract.

-Video method: Preview, Exercise.

2. There are currently three major groups of teaching methods:

- methods of organization and implementation of educational activities;

- methods of control and self-control of learning activities;

- methods of stimulating and motivating learning activities;

It is well-known that teaching methods perform the following functions in the educational process:

- teacher (the purpose of teaching is achieved by means of a method)

- Developer (using the method, the pace and level of development of students is achieved).

- educational (using the method of educational results are determined in advance)

- Motivation or motivation (for the teacher, the method is a means of motivating the student to study and stimulating cognitive activity)

- control-correction (using the method the teacher diagnoses the course and results of the learning process).

As you know, the main task of the subject "Computer Science and Information Technology" is to acquaint students with some general ideas of modern information technology, the practical application of information technology and the role of computers in modern life. However, taking into account the didactic principles, it is necessary not only to give students a solid scientific

explanation of the facts, but also to use a variety of interesting teaching methods.

One of the main goals today is to educate students to think independently. The solution to this problem depends in many ways on the use of interactive teaching methods. First of all, let's define the concept of "interactive". The word "interactive" comes from the English word "interact." "Inter" means mutual, "act" means to work, to work. Such methods are designed to reach everyone in the audience, requiring collaboration. The essence of interactive teaching is to organize the learning process in such a way that all students are involved in the learning process and have the opportunity to think freely, analyze and think logically.

In addition to pure learning objectives, the following aspects are important for the organizers of interactive teaching:

- to understand the abilities of others in the process of interaction of students in the group; - the need to interact with others and the need for their help;

- Development of competitive mood in students.

Therefore, using interactive methods, there are two main functions that need to be performed in order to be successful in training groups:

- The condition for solving the problem of learning with a pragmatic aspect of teaching;

- Solving educational problems (assisting team members in the process of joint work, the formation of behavioral norms).

An example of an interactive method is the Insert method. This method is designed to work with new text and includes:

1. Read the text with a pencil.

2. Make special marks in the text while reading:

+ I know that;

- I didn't know that;

? I wanted to know this perfectly;

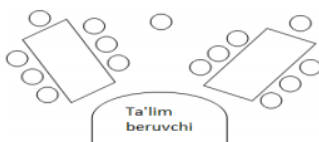
3. After reading the text, the following table is filled: Table of insert technology

I knew that	I didn't know that	I want to know more
+	–	?

Development of a course on the basis of a working curriculum in the subject of databases

Topic: Creating queries in Microsoft Access.	
Class time - 2 hours	Number of students: 15
Form of training	Informative report
Lecture plan	1. Query creation and its importance. 2. Create simple queries. 3. Query constructor.
Course Objectives: To give students an idea of how to create queries in Microsoft Access, its importance, the use of the query constructor, data management using queries,	
<i>Pedagogical tasks:</i> - Give an idea of the queries; - Demonstrate the stages of creating a query and its capabilities; - To develop students' knowledge of the ability to work with queries in Microsoft Access.	<i>Learning Outcomes:</i> - Able to tell about queries; - Describes the stages of creating a query and its possibilities; - Microsoft Explains the process of creating queries using Access.

The group will be divided into 2 groups and one excellent student will be selected for export. It is located as follows



TECHNOLOGICAL MAP OF TRAINING

Work phase bee and time	Activity content	
	educator	students
1. Introduction to the topic (20 minutes)	1.1. Says the topic name, topic plan, purpose, and demonstrates through a slide. 1.2. Introduces key words and phrases related to the topic; gives a list of references for independent work. 1.3. Introduce the methods and tools used in the course, assessment criteria	They listen, they record. They find out, they ask questions
2. Basic phase (50 minutes)	2.1. Explains the main theoretical aspects of the topic by showing and interpreting slides using Power Point	They listen, they write. Answers questions. They work in groups. Fill in the tables in the application

	<p>2.2. To reinforce the theme, the groups wrote "Two-part daily" table</p> <p>2.3 Describe the procedure for organizing the educational process in accordance with the plan and structure of the report.</p> <p>2.4 The teacher reinforces the topic with the students using the "Why" scheme. to be filled.</p> <p>2.5 Using the "brainstorming" method, a new topic is reinforced</p>	
3. Final stage (10 minutes)	<p>3.1. Answers students' questions on the topic, makes a final conclusion.</p> <p>3.2. Students' grades are announced according to the evaluation criteria. 3.2. Gives a task for independent work: "Resume" table</p>	Asks questions. Records the task.

In conclusion, the process of covering each subject and topic, first of all, focusing on the formation of high-level knowledge and high professional competence of students, will help them to develop into high-potential and competitive professionals in the future. First of all, it is a key factor in the development of society. The training of highly qualified pedagogical staff will ensure the development of potential young people in the future, first of all, in the field of education and upbringing.

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