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# PROFESSIONAL-METHODICAL PREPARATION OF THE FUTURE INFORMATIC TEACHER.

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**Abstract:**

The article is based on the relevance of the problems of teaching computer science in educational institutions. There are also scientific conclusions and recommendations on the main directions for improving the methodological training of computer science teachers in the modern information and educational environment.

**Keywords:** innovative methods, pedagogical support, teacher's activity, modern teacher, active teaching methods, interactive teaching methods.

New goals in the education system make humanity a priority, which should become the main value. These guidelines are manifested in the variability and personal orientation of the educational process (designing individual educational trajectories); practical orientation of the educational process with the introduction of interactive, active components. In such conditions, the question of professional and methodological training of an informatics teacher arises especially sharply. The contradiction between the social order of society for informatics teachers of elementary, basic, specialized and elective courses, owning appropriate teaching methods, and the existing level of their professional competencies requires the development of a computer science teacher training system. Any focused training gives the child a certain education. "Education" comes from the word "image". By education we will understand the whole process of the physical and spiritual formation of the personality, a process consciously focused on some ideal images, on historically determined social standards. In this understanding, education acts as an integral part of the life of all societies and all individuals without exception and becomes identical to the concept of "education" in the broad sense of the word [1]. The structure of the education system, the content of the educational process, the activities of teachers and students, as well as the results of functioning, depend on what historical type of society this system belongs to. In separate historical periods, one or another set of approaches to solving the problems of education and training prevailed - the paradigm of education. By the paradigm of education we will understand the initial conceptual scheme, a model for posing problems and their solutions, adopted during a certain historical period in the scientific and pedagogical community and defining the basic elements of the pedagogical system. Each stage of the development of human society entails the search for a new education paradigm. Thus, "pedagogical", "behavioristic", "cultural", "andragogical", "acmeological", "communicative", "humanistic" and other educational paradigms were proposed, in which, however, some attention was paid to the development of any side of the personality . Recently, an understanding has come that it is necessary to develop a personality as a whole, while applying achievements, methods and advanced technologies of various educational paradigms. The "old", "traditional", "pedagogical" education paradigm has been replaced by a new, developing, personality-oriented one, in which the basic elements of the pedagogical system are aimed at providing conditions for self-determination and self-realization of the student's personality. Under its influence, all school and university subjects are developed, the corresponding teaching and upbringing methods. The methodological system of teaching computer science has not only successfully adapted to the new paradigm, goals and values of training, but also in many cases acted as a "catalyst" for the processes of their formation. Computer science was the first among other school subjects to realize the profile and level differentiation of the content of education at various levels of school education, proving in practice the feasibility and effectiveness of many new teaching methods and forms aimed at implementing a personality-oriented approach to learning [1].

The basis of the definition of a social order for the preparation of a teacher of a modern computer science course and the refinement of a specialist model is an

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analysis of scientific, scientific, methodological and practical work on the content and methodology of teaching school computer science. In the analysis process, special attention was paid to the requirements for knowledge, skills, and types of teacher's activities in the field of computer science, theory and methods of teaching computer science and the use of NIT in teaching, as well as the teacher's methodological system. The analysis made it possible to determine professionally methodological requirements for a teacher of a multi-stage computer science course.

In the field of computer science, teachers of primary, secondary and specialized schools require knowledge at different levels of areas such as information processes, information modeling, information management fundamentals. For an elementary school teacher, only the basic level of this knowledge and knowledge of software environments is sufficient for the formation and development of the logical thinking of students (for example, Logo-Worlds). High school teachers should have a basic knowledge of computer science. Teachers of a specialized school are required knowledge at an advanced level and additional knowledge of computer science for the design of various elective courses. Computer science teachers should also know the rules of organizing students' activities at the computer and a list of computer programs suitable for use in the learning process.

From the field of theory and methodology of teaching informatics, teachers should have knowledge about the methodological system of teaching informatics, in the center of which the student should be, and the skills to select available educational material for the appropriate level of training, be able to apply the principles of modular presentation of educational material and implement inter-subject communications. Teachers are also required to know the age-related psychological and pedagogical characteristics of students in propaedeutic, basic or specialized courses, the ability to select and apply appropriate teaching methods using the principles of personalized learning, modify and even design (in the case of elective courses) the computer science course taught by them.

Depending on the training time that is allocated for the course "Theory and Methodology of specialized training in computer science", the depth of the study of individual points of the algorithm by students can be different. Work on the project can be organized both individually and in groups. Educational design ends with the presentation of the developed elective course in computer science. The documentation for the course is presented, and one of the classes is held in the form of a business game. Analysis of the results of training activities on the design of the course is carried out in the form of a generalized review.

During the preparatory phase at seminars in order to develop students' skills to determine conceptual positions, local measured goals, the content of specialized and elective courses, it is necessary to give them tasks on the analysis of courses of various authors proposed in the scientific and methodological literature. Analyzing these goals, students should correlate them with the goals facing the subject of computer science and specialized courses. Content analysis is carried out according to the evaluation criteria of the main content lines of the course. At the same time, the degree of reflection of the fundamental postulates of computer science, the success (logic) of the choice of content, the concepts studied, the name of the course are evaluated; the applied methods of cognition, content issues related to knowledge and methods of activity are identified. After that, students pay attention to possible changes and additions to the course content for vocational guidance and effective preparation of school graduates for mastering higher professional education programs, taking into account the expected class profile and possible student professions.

The principles of personalized learning are assimilated in the process of constructing at the seminars tables of correspondence of teaching methods to the age and personality characteristics of senior pupils, their profile interests; designing laboratory exercises in the classroom taking into account the personal characteristics of students; performing personal research, student counseling, etc. In order to develop interpersonal relationships, especially important for the future teacher, students work on the development of lessons-seminars, business games, project tasks, etc. can be performed in pairs or groups.

Classes of the elective course include a lecture cycle, practical and seminar classes, a laboratory workshop, a significant part of which is devoted to the design of an elective computer science course for senior classes by students. At will, students can choose the topic of personal research, the result of which can be a presentation at a seminar, student scientific conference, term paper or thesis. For personal research, students are offered, for example, the following topics:

Requirements for the teacher of a profile computer science course.

Socialization of students at the senior level of computer science education at school, including taking into account the real needs of the labor market.

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Active forms of teaching computer science in high school.

Modular training technologies in a specialized computer science course.

Identification and support of the most gifted, talented children in teaching computer science at the senior level of the school.

Possible individual educational trajectories for students (humanitarian, physical, mathematical or other profiles) when teaching computer science.

Paired and group training in computer science at the senior level of the school.

The method of projects in specialized and elective courses in computer science.

Organization of seminars and round tables on computer science at the senior level of the school.

Organization of computer science debates at the senior level of the school.

Organization of computer science conferences at the senior level of the school.

The development of interpersonal relationships in teaching a specialized course in computer science.

The use of contextual education for career guidance of students at the senior level of computer science education at school.

Methodology for studying the optional section in the computer science course of one of the profiles. Students study the choice of "Theory and Methodology of Teaching Computer Science at the Initial Stage" or "Theory and Methodology of Profile Education for Computer Science" after mastering the main course "Theory and Methodology of Teaching Computer Science". As a result of studying the main course, they already know: the goals and objectives of studying the course of computer science in high school; the concept of a methodological system and structure of teaching computer science at school, a general description of its main components; subject and objectives of the teaching methods of computer science, the standard of school education in computer science, its purpose and functions; basic methods of teaching and studying computer science; and they know how to: draw up thematic plans and lesson notes; prepare demonstration electronic didactic materials for lessons, simulate and analyze lessons. Classes in elective courses for future computer science teachers form the missing competencies for teaching elementary or core computer science courses in a personality-oriented education paradigm.

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