

ORGANIZATION OF INFORMATICS AND INFORMATION TECHNOLOGIES ON THE BASIS OF COMPETENCY APPROACH

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Abstract. *The article analyzes the function and significance of the competence-based approach in the evolution of the philosophy, methodology, and practice of secondary school computer science instruction.*

Keywords: *informatics, information, education, information technology, competence.*

ОРГАНИЗАЦИЯ ИНФОРМАТИКИ И ИНФОРМАЦИОННЫХ ТЕХНОЛОГИЙ НА ОСНОВЕ КОМПЕТЕНТНОСТНОГО ПОДХОДА

Аннотация. *В статье анализируются функция и значение компетентностного подхода в эволюции философии, методологии и практики обучения информатике в средней школе.*

Ключевые слова: *информатика, информация, образование, информационные технологии, компетентность.*

INTRODUCTION

At the moment, the essence of the normative documents aimed at modernization and improvement of the country's system of continuing education in general secondary education: universal knowledge, skills, and a new system of independent activity and personal responsibility of students, aimed at developing their skills. The educational goals thus, defined include teacher orientation in the learning process organization, a competency-based approach, changes in the requirements for existing educational technologies, criteria for evaluating teaching and learning outcomes, and take it to a qualitatively new level.

THE REFERENCE REVIEW

In this article various types of scientific works of the following scientists, such as N.Sh. Turdiev, Yu.M.Asadov[1], F.M.Zakirova[2], A.A.Qarshyev[3], and from commonwealth scientists, I.Ya. Lerner[4], V. V. Kraevskiy, G. P. Shchedrovitskiy, V. V. Davydov, R.M.Baskayev[6], B.A.Krasilnikova[5] and their followers have been used.

Researchers such as A.Fishman[8], V.A. Bolotov[9], V. V. Serikov[9], S. E. Shishov[13], B.E.Gaibova[7], V. Xutorskoy[12] have identified key areas in the process of introducing a competency-based approach in high school. However, the lack of approaches to defining core competencies, as well as the lack of a didactic framework for universal skills and competencies, make developing and applying the technologies that shape these core competencies difficult.

METHODS OF THE RESEARCH

Thus, there is a conflict between the demands of the strategy of education modernization and the lack of development of its methodology, theory, and practice in the teaching of computer science, in particular, the relevance of the issue, in the competency-based approach to the educational process and outcomes. based on the research that was done.

Competence, "competence," and "competency-based approach" have all been increasingly often used words in recent years. Particularly in view of the requirement to update educational material, their extensive use is wholly acceptable. According to the Strategy for Modernization of the General Education Content, for instance, "the main output of an educational institution should not be a system of knowledge, skills, and competencies in itself." Students should have a foundational understanding of law, intellectual property, and other topics. This subject is covered in specialized articles.

Instead of learning specific knowledge and abilities, the competency-based approach makes the assumption that learners pick up knowledge and skills in a complicated fashion. The system of teaching approaches is described differently in this regard. The structure of the pertinent competencies and the roles they play in education are the foundation for the choice and design of the instructional strategies. General secondary school cannot develop students' skills in all areas of activity and in all specific situations, especially in a rapidly changing society, to effectively address the challenges that arise in new areas of activity and in new situations. The school's purpose is to develop core competencies. A competency-based approach, in other words, is founded on the concept of "competence." The variety of approaches to defining these terms creates unique challenges in understanding them and the content of a competency-based approach. These concepts have been identified in the research environment (V. V. Bolotov[6], V. S. Lednev, N. D. Nikandrov, M. V. Ryjakov, E.F.Zeep[10]) or different. Considering this issue in detail by I. A. Zimnyaya [11], he emphasizes the competency-based approach: -practical, effective side, and the approach based on the concept of "competence" is in fact personal (motivation, motivational-will, etc.), explains that the quality of lim is more broadly defined in relation to humanistic values.

An explanatory dictionary edited by D.N.Ushakov [14] defines the word "competence" as "awareness, authority", "knowledge in any field" and defines "competence" as follows:

- 1) 1) the scope of issues and events over which the person has authority, knowledge, and experience;
- 2) technical assignment, field of issues, and events pertaining to someone's behavior (law).

A detailed interpretation of these terms is given by A. V. Khutorskoy:

- Competence is assigned to a specific set of objects and processes and is required for a high level of development of interconnected personality traits (knowledge, skills, habits, methods of activity)
- quality production activities in relation to them; competence is the possession and possession of relevant powers by a person, including his personal attitude toward him and the subject of activity. As a result, having competence means being aware of a specific knowledge, quality, or thing; competence means having specific skills in any field.

A.Tsetsorin considers competence as a set of "powers acquired by an individual" [8]. Based on all of the above definitions, we can conclude that A. V. Khutorskoy provided the most comprehensive interpretation of the concepts of "competence" and "competence," which we will use in this work.

As a result, a competency-based approach can be defined as follows: A competency-based approach to teaching is characterized by the student's comprehensive acquisition of knowledge and skills, as well as a focus on the acquisition of education and upbringing.

Competence, translated from Latin, refers to a variety of issues about which a person is familiar, has knowledge, and experience. A competent person in a specific field has the necessary knowledge and skills to evaluate the field rationally and act effectively in it.

There is currently no comprehensive list of the fundamental human skills that should be cultivated in general secondary education. However, the following species are acknowledged based on these classifications:

- value-semantic competencies;
- general cultural competencies;
- educational and cognitive competencies;
- information competencies;
- communication skills;
- social and labor competencies;
- personal self-improvement competencies.

So how is computer science different from other subjects?

- Firstly, special technical devices, most notably a personal computer for each student, as well as office equipment and multimedia tools involved in the learning process, are available.
- Secondly, the computer classroom is organized in an unusual way: each student has an individual workspace while also having access to common resources; answers on the board are less practiced than in other lessons, but they are more accepted; and even visual communication between students and the teacher is structured differently than in other classes. This creates unique conditions for the development of communicative skills.
- Thirdly, the teacher can naturally organize active independent activity in computer science classes, such as the creation of one's own personal, one-of-a-kind product.
- Finally, fourthly, students are highly motivated in computer science. That is, young people should be excited about this lesson because they are envious of adults who study computer science. In this case, "creating an interesting development" on the computer and working on it will provide a good starting point for computer science teachers to develop goal-setting competencies in the classroom.

ANALYSIS AND RESULTS

Let's take a look at how a teacher can plan activities to help students develop each of the computer science core competencies.

As previously stated, computer science classes are undoubtedly intended to influence the formation and development of information competencies. Here are the activities:

Knowledge of the computer as an information processing device, as well as technical skills in working with a variety of devices (headsets, speakers, printers, scanners, webcams, etc.).

1. Ability to work with information:

- search in directories, search systems, hierarchical structures;
- receive information from various media;
- systematization, analysis and selection of information (sorting, filters, queries, file system structuring, database design, etc.);
- technical skills of data storage, deletion, copying, etc.
- information conversion (from graphic to text, from analog to digital, etc.).

- ability to work with a variety of information devices (multimedia directories, electronic textbooks, Internet resources, etc.).
- ability to be critical of the information received, to highlight the main points, to assess the level of reliability (relevance of the request, network fraud, etc.).
- ability to use information and telecommunications technologies to solve a wide range of educational problems.

When it comes to communicative competence, we can highlight the following types of activities in this area that are specific to computer science classes:

- Have oral forms (ability to ask questions, present evidence in an oral answer, discuss, defend a project, etc.).
- “person” - “technical system” dialogue (understanding the principles of interface construction, working with dialogs, setting environment parameters, etc.).
- Ability to present themselves orally and in writing, to have stylistic methods of text design (e-mail, online search, creation of template text documents, rules for presenting information in presentations, etc.).
- Have telecommunication facilities to communicate with remote speakers (understand different types of communication capabilities, how to use them, etc.).
- Understanding the fact of language diversity, language proficiency, linguistic competence (including - official languages, coding systems, programming languages; knowledge of them at the appropriate level).
- Ability to work in a team, search for and find compromises (working on a joint software project, network interaction, client-server technology, application collaboration, etc.).
- Tolerance, ability to communicate in learning (network presence, telecommunications with remote interlocutors, etc.).

CONCLUSION

We have discussed the key competencies that have traditionally been prioritized in computer science classes. It is the ability to set personal goals, understand and realize the meaning of one's activities, relate it to outside world tasks, and in many ways determine one's success, particularly in the field of education. Thus, the ability to formulate their own learning objectives is the essence of competence in the form of activity (in general, the objectives of the study of the subject, the study of the topic, project design, selection of topics for lectures, etc.).

Based on this, we have discovered that a competency-based approach can be used to implement a computer science course.

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