Research Article

PERSONALIZED APPROACHES TO DEVELOPING STUDENTS' COGNITIVE ACTIVITY IN THE PROCESS OF TEACHING SPECIALIZED SUBJECTS

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ABSTRACT

The article talks about the level scheme of distribution of personality-oriented approaches in the development of cognitive activity of students in the process of teaching specialized subjects, the theoretical foundations of personality-centered education. The student's activity in the learning process, self-change, self-development activities, active human interaction with the outside world, as well as the main ideas of didactic approaches are also presented.

KEYWORDS

Cognitive, cognitive, process, approach, didactic, cognitive, complex, cognitive cognitive, knowledge-oriented, cognitive cognitive, informative cognitive.

INTRODUCTION

The process of teaching specialized subjects to students in higher education institutions involves the use of a didactic approach that meets certain requirements, aimed at developing cognitive activity, increasing the efficiency of teaching, and taking into account the identified psychological and pedagogical characteristics of the student population.

Analyzing current trends in the development of modern education allows us to conclude that the implementation of a personalized approach serves as a method of humanizing both pedagogical activity and education in general. It is necessary to view the teacher's preparedness to implement a personalized approach in pedagogical activity as an important factor in the humanization of education. In addition, today E.V. Bondarevsky considers the personalized approach

as the main way to modernize contemporary education [2].

Nowadays, an educator should not limit themselves to merely imparting knowledge and developing practical skills; they should teach students to acquire knowledge independently, engage in research, and make optimal decisions in solving pedagogical tasks. This requires a different approach to the educational process. In particular, the teacher must adjust their attitude towards both the students and the subject matter. We explore the possibilities of meeting these requirements by organizing a personalized learning process.

The theoretical foundations of personalized education include the following:

• Defining the learner's role in the educational process and focusing on personal development;

• Setting normative requirements for the learner's professional development, which are reflected in state education standards and qualification requirements;

• The teacher's creative abilities and skills are of great importance in organizing the educational process;

• The application of personalized educational technologies in the learning process is required.

The issue of the teacher's readiness to implement a personalized approach requires discussion of the teacher's role in a personalized education system.

Modern educators are compelled to focus not on acquiring new knowledge, skills, and competencies, but on freeing themselves from quickly outdated and non-functional knowledge. However, despite the paradoxical nature of this idea, it is necessary to organize a learning process in real educational settings that is designed and oriented towards educational objectives, where both teachers and learners are able to understand and be prepared for modern requirements.

To achieve this, we must direct our professional skills not only towards controlling students' knowledge and skills but also towards diagnosing their activities in order to timely address the difficulties they may encounter when acquiring and applying knowledge, skills, and competencies. This pedagogical activity is significantly more complex than traditional education, requiring higher levels of expertise and adherence to the following principles of personalized education:

• The student's position is recognized, with the student actively participating and self-assessing as a distributor of subjective experience;

• The subjective experience of each student is taken into account in the educational process;

• The student's personal development is not satisfied merely by normative activity but is continuously enriched through the acquisition of new experiences, expanding the sources of personal development.

Thus, personalized education can be defined as subject-centered education, as it requires organization, identification, and development. Furthermore, the implementation of personalized

education must meet the following conditions and requirements:

• The development of all participants in the educational process, providing opportunities for students, teachers, and administrative staff;

• Attention to and development of the professional qualities necessary for the learner's personal growth;

• The application of modern pedagogical and psychological technologies for personal development in the educational process;

• Ensuring positive learning outcomes by creating educational situations that foster achievement for students;

• Offering academic and methodological support for the professional development of the educational participants, including ongoing psycho-diagnostic assessments;

• The development of differentiated education, which plays a crucial role in students' self-awareness and development, and is widely implemented;

• The creation of pedagogical conditions, such as modern workshops, laboratories, and classrooms designed for practical training;

• Identification of the key personal characteristics and professional qualities of future specialists.

The above theoretical analyses allow us to understand personalized education as a process designed to enable learners to fully reveal and realize their potential, taking into account their preparedness, abilities, and psychophysiological characteristics, thereby fostering their ability to self-educate, acquire knowledge, and develop autonomy.

In literature, didactic approaches are understood as follows:

• "A central principle for structuring educational content and choosing the methods to achieve its goals, which integrates and is based on a series of other principles."

• "A specific concept-based process and its elements (goals, content, methods, forms of organizing the educational process), considered in design and aspect."

Didactic principles are understood as:

• The primary guidelines for teaching in all subjects at all levels of education;

• The fundamental rules that define the content, organizational forms, and methods of the educational process according to its overall goals and laws;

• The fundamental rules expressing the relationship between the methods of achieving educational goals and the general laws of education throughout the existence of a particular socio-economic formation;

• The system of general requirements for the educational process that ensures its effectiveness.

Thus, didactic principles that apply equally across all subjects and levels of education are the general and

most important rules that define the content, forms, and methods of educational work according to its goals and laws.

A.A. Rean mentions scientific, humanistic, activity-based, personal, axiological, cultural, anthropological, socio-anthropological, holistic, systemic, complex, paradigmatic, polyparadigmatic, interparadigmatic, civilizational, ecological, hermeneutic, evolutionary-gnoseological, cognitive-informational, reflexive, synergetic, and parametric approaches [1]

However, not all of them equally contribute to the development of cognitive activity, and considering the psychological and pedagogical characteristics of technical school students with a natural science profile, they provide flexible tools for individualizing the teaching process.

Using a hierarchical method of classifying didactic approaches, we distinguish levels used to develop cognitive activity for computer science, dividing them into three levels. The first level (Figure 1) consists of four main educational approaches: personal, informational, systemic, and activity-based.
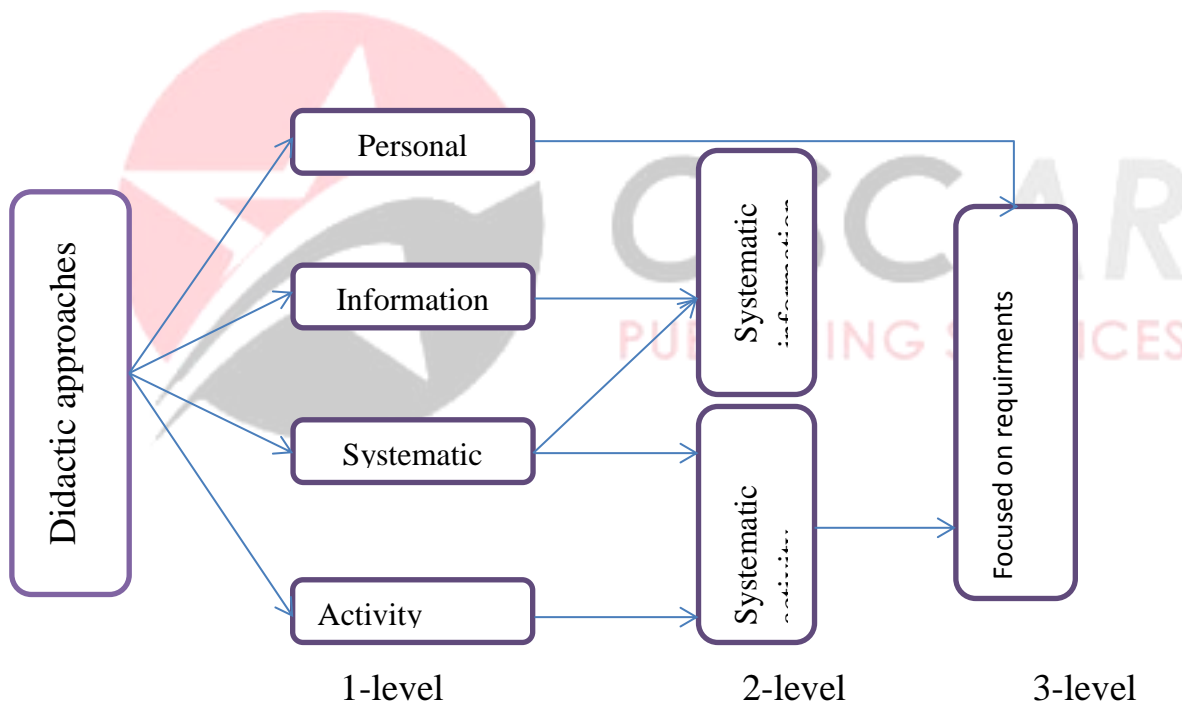

Figure 1. A Tiered Diagram of Didactic Approaches Aimed at Developing Cognitive Activity

The second tier, based on the logic of research, is represented by the results of combining key ideas from the first-tier approaches, as well as revealing cause- and-effect relationships between pedagogical processes and phenomena: system-information, system-activity.

The third tier is expressed by a learner-centered approach, which is based on the first-tier, system-activity, and system-information approaches from the second tier, emphasizing the importance of a personal approach.

Given the current needs of societal development, the personal approach holds special significance, as it places the learner at the forefront. The connection between the processes of personal formation and the interaction between the individual and their activity naturally generates interest in this category within pedagogy. This leads to a strong interest among teachers and researchers in the development of activity-based approaches.

A systematic approach represents a set of methods of activity that considers any issue from a systemic perspective. In education, the systematic approach establishes the interconnectedness of all participants in the educational process by clearly formulating the objectives and requirements for learning outcomes. Many educators are engaged in implementing a systematic approach in education.

One of the goals of the concept of standards at all levels of education is "to form the readiness for lifelong independent learning," which is impossible without a high level of cognitive activity development.

The essence of the system-activity approach lies in the fact that students must independently "extract" new knowledge through research activities. In this case, the teacher's task is to develop the content of the learning material and organize the learning process in a way that transforms the student's individual abilities into the development of cognitive activity, utilizing various forms of collaboration. From the beginning, the student should take an active role, engaging all their potential—from perception of information to the level of social activity. Only in this way can the educational information be integrated into the experience of future professional and socio-cultural activities.

This shift is primarily driven by the changing demands of society for the educational process of modern students: techniques and methods aimed at developing the ability to independently acquire and master new knowledge through creative activity are becoming increasingly relevant.

Thus, the goal of the educational system is shifting from simply imparting "knowledge" (where the objectives and outcomes of education are knowledge, skills, and competencies) to the organization of learning that is personalized, with the primary goal being the development of the student's abilities and talents.

As noted by academic A.M. Novikov, the problem of "activating" the motivational and need-based mechanisms of the student's self is one of the main didactic challenges of modern education. The "development of the student's personality as a subject and its improvement is a factor in the quality of education, which is achieved through a learner-centered approach" [3, p. 19].

In the works of N.I. Pak, learner-centered education is defined as "a system aimed at creating conditions that ensure informal education and motivation for learning, as well as a humanistic attitude toward the student. It requires the student to actively and responsibly participate in constructing their own learning trajectory, selecting the pace of learning, and choosing
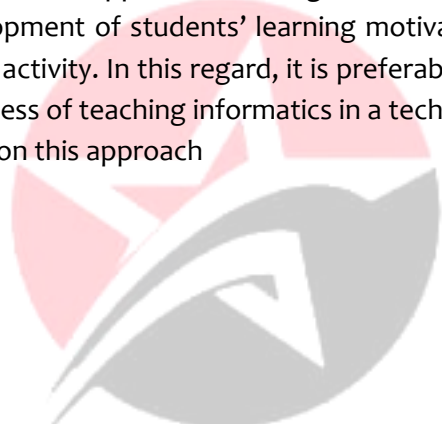
the means and methods to achieve educational outcomes" [4].

According to the learner-centered approach, the student's personality is "the center of their development, including the sources and driving forces of growth; the resources necessary for self-assertion; the ability to choose an individual path of self-realization and to manage overall development." Thus, the student is capable of adjusting the learning process according to their abilities, educational needs, and professional requirements.

The learner-centered approach has the greatest impact on the development of students' learning motivation and cognitive activity. In this regard, it is preferable to build the process of teaching informatics in a technical school based on this approach

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