

DEVELOPMENT OF GENERAL PROFESSIONAL COMPETENCIES IN FUTURE SPECIALISTS THROUGH DIFFERENTIATED TRAINING

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Abstract

This article highlights the possibilities of using differential education in the formation of universal competencies of future specialists.

Keywords

general professional competence, differentiated training, ability, typological group, education, individualization.

Introduction

In society, every individual should engage in activities that align with their strengths, striving to maximize their abilities. This approach not only fosters personal growth but also ensures the optimal utilization of each member's potential, ultimately addressing the challenge of effectively harnessing the opportunities available within the community.

Methods

During this research, the methods of studying and analyzing pedagogical, psychological and methodical resources, didactic materials, curriculum and programs, educational-regulatory documents, textbooks and educational-methodical literature, conversation, observation, pedagogical experience, processing of research results were used.

As the theoretical and methodological basis of this article, the analysis of literature and scientific articles, the opinions of scientists, and observation of processes was carried out, which shed light on the formation of general professional competence of future specialists based on a differential approach.

Results

On the basis of the researches of local and foreign scientists, we drew attention to the fact that general professional competence based on differential education is an important component of professional competence, a practical and humane

direction that is implemented in systematic interdisciplinary, personal and functional areas.

The essence of the differential approach to the formation of general professional competence of students is that the relatively independent components of general professional competence are considered not separately, but in relation to others; in this case, any object is considered both as a system and as an element of a larger, encompassing system.

In this regard, the organization of education on the basis of differentiation implies the conditional distribution of typological groups of students based on a certain criterion or a set of criteria.

It should be noted that there are different approaches to determining the basis for the differentiation of education. We found it necessary to mention some of them in the article (Table 1).

Criteria for dividing students into typological groups

No	The author	Differentiation criteria
1	Babansky Yu.K.	<ul style="list-style-type: none"> - Learning abilities of students (intellectual, emotional, biological (working)); - Learning skills; - Basic relationships; - Readiness; - Moral and volitional qualities.
2	Kasatkina E.S.	<ul style="list-style-type: none"> - Individual psychophysiological characteristics of students (cognitive style, superiority of cerebral spheres); - Education level of students; - Orientation of students to science; - Orientation to the planned career in life.
3	Mosteller F. and others.	<ul style="list-style-type: none"> - Level of development of study skills; - Level of abilities.
4	Osmolovskaya I.M.	<ul style="list-style-type: none"> Psychophysiological characteristics of the person; - Training; - Special abilities; - Cognitive abilities; - Interests and inclinations; - Professional directions; - Ethno cultural characteristics; - Relation to religion.
5	Pokrovskaya S.E., Purysheva Shakhmaev N.M.	<ul style="list-style-type: none"> Cognitive interests; - General and special abilities; - Results achieved in training and development; - Planned professional activity.
6	Rabunsky E.S.	<ul style="list-style-type: none"> - Success rate;

		- Level of cognitive independence; - Level of effectiveness of interest in learning.
7	Sarigo N.V.	- features of perception: auditory, visual, thetic.
8	Tomlinson K.A.	- Level of preparation of students; - Learning styles; - Cognitive needs of students.
9	Unt I.E.	- Learning ability (general mental and special abilities); - Learning skills; - training (knowledge outside the program); - Cognitive interests (on the background of general educational motivation).
10	Cheredov I.M.	- Ability to learn; - Educational effectiveness.

Analysis of the criteria presented in the table for dividing students into typological groups allows us to conclude that they can be conditionally associated with the following integrative features:

- 1) Individual psychophysiological characteristics of students (cognitive style, emotional modality, predominance of functions of the cerebral hemispheres, type of temperament);
- 2) Educational opportunities (characterized by the level of learning, the formation of intellectual abilities and cognitive independence) and as a combination of educational efficiency (characterized by physical indicators, attitude to learning, cognitive interests, persistence and purposefulness);
- 3) General and special abilities, professional directions and planned professional activities.

However, According to I.M.Osmolovskaya, when choosing personal characteristics that can be taken as a basis for differentiation, it is important to first identify those that are most important for the educational process. In addition, the importance of individual characteristics as a basis for differentiation may differ at different stages of learning. One thing is certain: a necessary condition for differentiated education is a systematic psychological-pedagogical diagnosis of students, and the algorithm of the teacher's activity will be as follows (Fig. 1).

We will consider in detail each stage of the algorithm of the teacher's activity in organizing the process based on the principle of differentiation. The goals of differentiated education are as follows: first, to prepare each student according to his abilities; secondly, adapting teaching to the characteristics of different groups of students. Therefore, the description of the algorithm is carried out by us on the example of a holistic criterion such as "learning opportunities" of the student.

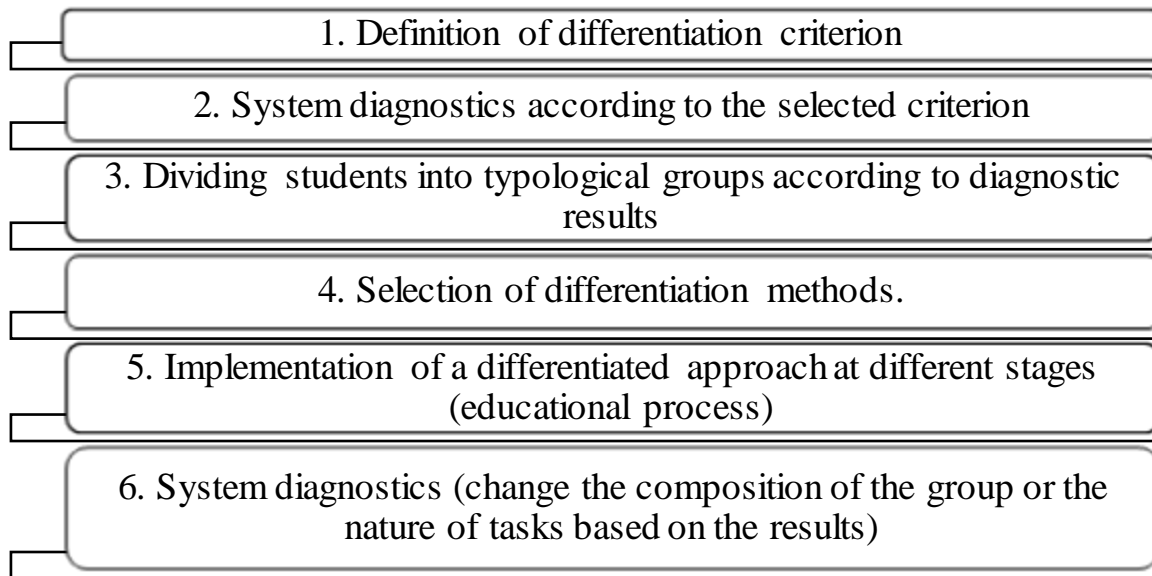


Figure 1. Diagnostics of the teacher's activity in the organization of the educational process based on the differential approach.

Discussion

Step 1 – defining the differentiation criterion. The selection of a criterion or set of criteria for differentiation depends on the teacher's goals.

If the teacher's goal is to develop the educational and cognitive activity of students, the integral criterion "educational opportunities" is selected, which is especially important for the adolescent period.

"Educational opportunities are an integral indicator of the educational process that reflects the achieved and potentially possible levels of knowledge, activity and personal development of students, as well as the level of effectiveness of organizing their educational and cognitive activities".

Learning opportunities are represented by two components: learning ability and learning performance. This should be taken into account by the teacher during the learning process (Fig. 2).

After determining the criteria for dividing students into typological groups, the teacher moves to the second stage of his activity.

Step 2 – systematic diagnosis of students according to the selected criteria. Based on the diagnosis of the components of educational opportunities, the teacher can not only evaluate the effectiveness of the organization of the educational process, but also analyze the success of the educational and cognitive activities of each student (talented and unsuccessful). Based on the scheme presented in Figure 2, diagnostic methods are selected, questionnaires and interviews are conducted with other teachers, medical staff and students working in the studied group.

Systematic diagnosis is carried out at the beginning of the academic year. In addition, at this stage, the psychological service of the educational institution should participate, they should comprehensively analyze the students in this group. The reason for this is that pedagogues-psychologists conduct psychological-pedagogical diagnostics more competently, correctly interpret the obtained results, make a diagnostic map of the group and give recommendations.

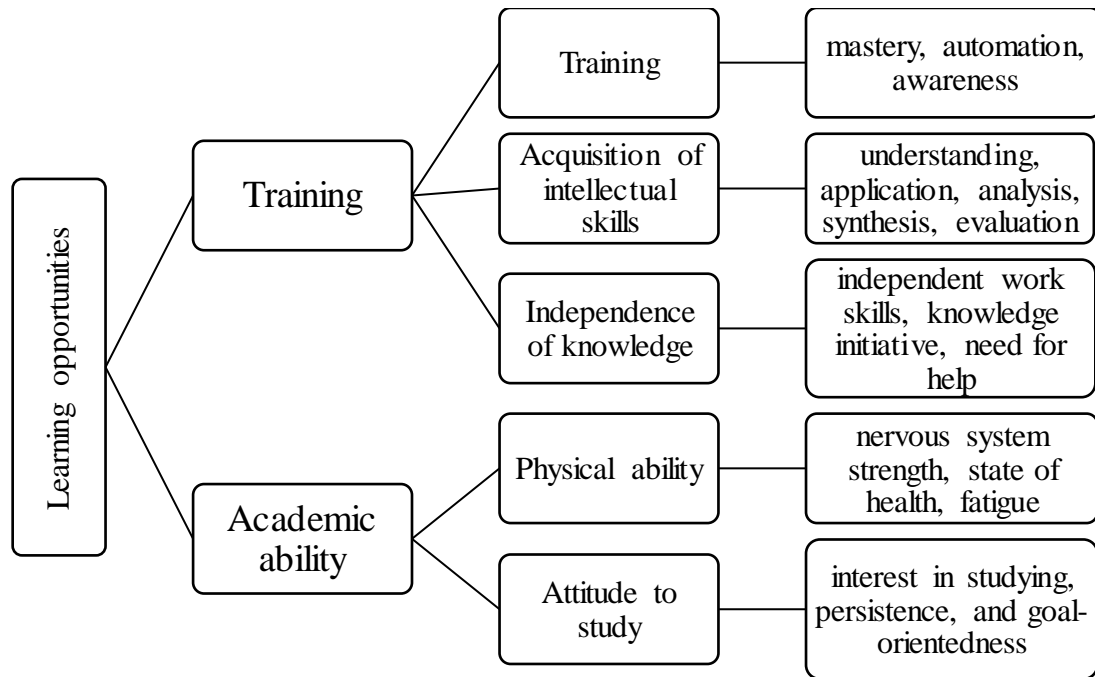


Figure 2. Features that make up educational opportunities.

Step 3 - dividing students into typological groups according to the results of the diagnosis. At this stage, the teacher, together with pedagogues-psychologists, determines the level of learning ability of each student, the level of reliability of self-assessment, which typological group he belongs to, based on the "Diagnostic group map". This stage ends with the identification of typological groups according to the level of learning opportunities ("strong", "medium-strong", "medium", "medium-weak" and "weak"), a description of each typological group is given (Table 2).

Characteristics of typological groups according to the criterion "Educational opportunities".

No	T-typological group	Features of the typological group
1	"strong" students	High learning ability. Performing tasks of a creative nature; able of intense and long-term intellectual work, independent work without being forced by the teacher; can ask problematic questions; quick learning of general action methods, flexible critical

		king; high level of education; sustainable educational and initiative motives of self-education. They are purposeful, sensible, creatively connected with education; high interest in learning, conscientiousness and responsibility. There are many talented students in this group.
2	"medium-strength" students	Take the initiative to complete creative tasks; rarely needs revision from teachers and adults. Having experience in creative activities allows to successfully solve independent tasks; there are few and insignificant errors that can be corrected independently when performing actions. According to the level of work ability, two groups can be distinguished among them: the first includes students with high work ability, who achieve good results due to purposefulness, persistence and long-term work ability; the second group - students with high learning ability, but low work ability, which is caused by their lack of interest in educational activities.
3	"middle" students	They have an average level of learning ability, because they have gaps in knowledge, low level of intellectual abilities, weak motivation for learning and an average level of academic performance, which is manifested by lack of interest in tasks, absence of long-term intellectual stress. They apply knowledge in familiar situation and model; is very sensitive to help and requires special encouragement from adults.
4	"medium weak" students	They absorb the educational material at a reproductive level and partially repeat it; they are characterized by the level of knowledge of the subject from the learning material governed by the rules and algorithms specific to a particular discipline, they make frequent mistakes, they show a low level of cognitive initiative, low motivation and sensitivity to learning. The support provided requires constant monitoring; cannot correct errors independently; there are deviations in physical development, but only with small loadings.
5	"weak" students	They have difficulties with special, general intellectual abilities and methods of cognitive activity, they do not have the mechanism of transfer and application of knowledge, skills in a new educational situation, value assessment is subjective; needs the teacher's constant support; lack of cognitive initiative, strong willed actions and weak motivation to learn; frequent breaks in work are required, which is associated with both the specific characteristics of psychophysiological development and negative factors of the social environment.

Step 4 - selection of differentiation methods. At this stage, the teacher chooses a pedagogical strategy for organizing students' knowledge for each typological group. Pedagogical strategies - "support", "stimulation", "guidance", "cooperation",

"co-creation" - determine the organizational scenario of interaction between the teacher and students.

Step 5 - implementation of a differentiated approach at different stages of the educational process. At this stage, the teacher chooses teaching methods and methods for each typological group, multi-level tasks, and determines his support. For example, for the typological group of "average students" for whom the "leadership" strategy is recommended, it is appropriate to use the method of problem-based presentation of educational material and use active forms of educational and cognitive activity.

The 6th stage is a systematic diagnosis, the results of which change the composition of groups and the nature of tasks. At this stage, reflection and correction of the organization of education is carried out, and the results of a new diagnostic survey on the educational activity of students are determined.

Thus, the teacher's adherence to this algorithm allows for the optimal organization of differentiated education. In the development of individual educational trajectories, it is necessary to rely on the characteristics of the student's thinking, his cognitive style as an internal plan of any actions and operations.

1. General professional competence does not mean the acquisition of separate knowledge and skills by a specialist, but the mastering of integrative knowledge and actions in each independent direction.

2. The personal component of general professional competence of a future specialist refers to the qualities of a specialist necessary for the successful implementation of professional activity, they are personal qualities of professional importance in pedagogy - the characteristics of the intellectual, emotional and social aspects of a person that determine the result of labor activity, his competence and personality.

3. General professional competence - it defines the scope of powers and functions of a person (future specialist) in the field of educational activity: it reveals the laws of formation of knowledge, skills and qualifications and experience, determines the size and structure of the content.

4. Improvement of the general professional competence of future specialists through the organization of their differential education requires order and systematic organization, work based on the individual trajectory of the student.

5. In the organization of differentiated education, the teacher divides the student group into typological groups; choose strategies that suit them; will have to develop training tasks in accordance with these groups.

On the basis of differentiated education, the main criteria for mastering the basic content of science knowledge were determined:

- the depth of mastering the educational material (corresponds to level I),
- generalization (corresponds to level II),
- awareness (corresponds to level III).

The selected criteria can serve as a basis for the development of control-diagnostic tasks for students involved in differentiated education: creativity, difficulty, size, the level of independence of students, the nature of helping students, and the form of educational activities require compliance with such criteria.

In addition to the main criteria, additional criteria can be included: student assessment of the result of differentiated education in the course of teaching subjects; assessment of the role of scientific knowledge in forecasting the future; emotional comfort in presenting new knowledge for the student.

Conclusions

1. Having concluded the content of the issue of differentiation and individualization of student education, we can formulate some conditions for its effective implementation:

- to know the individual and typological characteristics of individual students and groups of students;
- the ability to analyze the educational material, identify the difficulties that different groups of students may face;
- creating a detailed lesson plan, including questions for different groups and individual students;
- the ability to "program" different groups of students and the training of each student.

2. In differentiated teaching, the teacher collects information about the progress in the development of academic competences and skills of students, conscious and stable perception of the subject, using different methods of assessment, such as observation, student assessment sheets, independent and control.

3. Such information can help the teacher differentiate learning by making quick decisions, such as spending time memorizing a concept instead of completing planned exercises, or trying multiple exercises to keep students as engaged as possible.

4. When a teacher engages students' thinking, it helps them tailor instruction to individual learning styles and ensures that all students understand and improve on each element toward the end result.

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