



REVIVING THE PROFESSIONAL COMPETENCIES OF PROSPECTIVE TEACHERS TO PROVIDE SOLUTIONS TO CREATIVE TASKS WITH THE HELP OF HEURISTIC ASSOCIATIONS

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ABSTRACT

this article provides information about the possibilities of developing perception, imagination, judgment and creative thinking in future teachers with the help of heuristic tasks. There are also opinions about pedagogical thinking, its formation and development, and about the productivity of heuristics and heuristic rules. Specific directions of development of creative thinking in future teachers, reflection, analysis, comparison, generalization, evaluation and empathy process on pedagogical phenomena are described.

KEYWORDS: Future teacher, professional competencies, professional knowledge, heuristic assignments, pedagogical thinking, creative thinking, logical thinking.

INTRODUCTION

The development of unique perception, imagination and judgment skills in each individual takes place directly in the educational process. In many ways, this indicates that the intuitive thinking of learners is highly developed. Such people are considered creative. One of the main characteristics of a creative person is the ability to generate ideas.

Even today, in educational institutions at all levels, not enough attention is paid to the development of students' and students' ability to generate ideas. Our observations show that professors and teachers have been paying attention to assignments by directing students to search for logical solutions to assignments. In the process of solving creative tasks, pedagogical processes aimed at expanding the possibility of logical thinking of students are organized. If the methods of solving creative tasks known in pedagogy are divided into groups based on leading principles, and the types of activities corresponding to them are classified, they form two large groups.

1. Methods encouraging logical thinking. Within this method, students perform activities such as analysis, comparison, generalization, classification, induction, deduction.
2. Heuristic methods.

In order to gain a deep understanding of the specifics of the heuristic method, it is possible to present a number of rules for structuring by means of words. In this, ideas about what actions to perform and what should be done in this process are expanded, mainly heuristic in nature. A diverse set of activity rules can be divided into two large groups: a) algorithms or a set of heuristics consisting of algorithms, b) heuristic instructions, that is, they include recommendations about the choice of action methods. In this process, heuristics expands the possibility of searching for problems, shows its tactics and strategies, but does not guarantee that the student will succeed in this direction.

Heuristic methods of solving creative tasks mean a system of rules and principles. It embodies the strict tactics and strategies of demand activity and directs their intuitive thinking to the process of finding solutions to problems. Accelerates the process of solving creative tasks of a certain type based on the generation of ideas.

The rules for performing creative tasks are recognized as heuristic rules. The rule of performing isolated creative tasks is called heuristics.

When thinking about the productivity of heuristics and heuristic rules, inventive and rationalizing activities are meant. However, in most cases, these terms are not used interchangeably. This complicates the use of heuristic assignments in pedagogical practice. That is why professional competences are formed in students by accustoming them to perform creative tasks. The use of the trial and error method in the systematic organization of future teachers' work on heuristic tasks in the process of higher pedagogical education allows to ensure productivity. In Russian and foreign pedagogy, the trial and error method is mainly used to develop students' inventive skills (Busha G.Ya., G.S. Altshullera). In this process, experts recommend using brainstorming and synectics methods.

The well-known brainstorming method was developed by the American expert A. F. Osbornom entered the pedagogical problem. Heuristic dialogue helps to accelerate the mental activity of learners and is implemented based on a number of pedagogical and psychological laws. Our observations show that students are able to generate ideas more easily in groups than individually. In normal situations, the future teacher's creative activity is formed as a result of overcoming existing pedagogical and psychological barriers, openly or secretly. This situation can be expressed using the "gateway" model. Within this model, future teachers' interactions, dialogues, cooperative activities, exchange of ideas in the process of solving heuristic tasks are shown. The student's creative activity is more evident within this model. When faced with trial and error, students move on based on the professional competence they have developed. In the "Gateway" model, pressures in mutual relations, student's reputation in the group, status, traditions, habits, lack of manifestation of positive emotions are also important. Dialogue between students, mutual exchange of ideas, and brainstorming situations eliminate obstacles in the process of performing creative tasks and ensure that students show activity.

To date, there are several variants of brainstorming modifications.

A direct attack on the brain. Within this method, solutions to creative tasks are sought based on collective generation of ideas. The main goal of using this method is to collect as many ideas as possible, to free thinking from inertia, to eliminate the movement of initial thought during creative tasks. The main focus of this method is not to criticize the ideas presented by the students, and also to encourage humorous comments. The successful use of this method depends to a large extent on the professional skills of the professor who manages the student's discussion processes.

The professor-teacher should determine the direction of the discussion and ensure its effective passage. It is also required to ask students guiding questions, to create favorable conditions for helping them, to be able to effectively use jokes and replicas. Group members can be from 5 to 10 people. The members of the student group should be able to put forward different approaches, present many ideas, engage in active dialogue, and have motivation to engage in dialogue situations. Cases of direct attack on the brain can last from 15 minutes to half an hour.

Ideas are selected, sorted and evaluated in two stages by designated experts. Experts first select unique, productive ideas, and then try to sort out optimal ideas.

Mass brainstorming method. It serves to increase the efficiency of generation of new ideas in the student group. This method was originally developed by an American specialist Dj. Used by Donald Phillips. The peculiarity of this modified method is that students in the audience work in small groups. The last subgroup organizes a session to attack the brain directly. The activities of the members of the small group can be different. The time allocated for their activities is determined by professors and teachers. The ideas presented by the members of the small groups are evaluated after they are generated. After that, unique ideas are isolated.

Dialogue-based brainstorming method. The unique aspects of the dialogue are that it allows students to realize their creative potential and generate ideas that they present together.

During the dialogue process, the following actions are performed step by step:

1. Small groups are formed based on psychological and numerical compatibility.
2. A group of students is formed to analyze problematic situations, preliminary creative tasks are formed in general, all participants of the dialog process are informed about the assessment of the quality of creative tasks.
3. Based on the method of direct brainstorming, the ideas presented by the process participants are generated. Special attention is paid to creative processes.
4. Systematization and classification of ideas. In this place, unifying ideas are studied and classified and divided into groups based on these signs. Ideas belonging to a certain group are shown, which are divided into subgroups according to which principle they belong to. On this basis, approaches to creative assignments are selected.
5. Disruption of ideas, transition from one order to another. It evaluates practical ideas. At this point, brainstorming is mainly focused on situations that prevent the implementation of the proposed ideas.
6. Evaluation of the critical opinions expressed by the students in the previous stages and compilation of ideas used in practice. Critical opinions are included in this list only in cases where they are not denied during the statement process.

The effectiveness of the pedagogical process is ensured only when all students perform heuristic tasks with equal distribution of workload. All ideas put forward by students are divided into three groups. 1) generated ideas; 2) ideas evaluated based on the analysis of problem situations; 3) optimized ideas.

The method of collective search for unique ideas is based on a number of pedagogical and psychological laws.

1. Future teachers' cooperation in solving heuristic tasks. The professor-teacher leading the pedagogical process, using the democratic method of communication, stimulates students' unique ideas, makes unexpected associations, directs students to show creative activity for the birth of unique ideas, and he himself appears as a co-author of these ideas. For this, professors and teachers should have highly developed creative cooperation and interpersonal relations. Then student's opportunities to perform creative tasks of heuristic nature will expand.

2. Approaching future teachers with confidence in each other's abilities and creative potential is one of the main laws and important principles of the pedagogical process aimed at this goal. In this process, all students enter into creative cooperation on the basis of mutual equality. professors and teachers support them and encourage even the smallest initiatives.

3. The principle of successfully combining students' intuitions and logical thinking is of particular importance. In pedagogical situations aimed at generating optimal ideas, logical thinking and any intuition are slowed down. This requires a certain degree of attention to certain rules, such as not allowing any kind of criticism and putting an end to immediate logical and critical evaluation of generated ideas.

The advantage of searching for unique ideas as a team is that it ensures equality among all members of the student group, which professors operating in an authoritarian style cannot apply such assignments. In the process of completing such assignments, students' laziness, regular monotonous thinking, rationalism, and emotional excitement are put an end to. A comfortable pedagogical and psychological environment in the auditorium develops the perception and intuition of future teachers and creates favorable conditions for them to show creative activity.

The main disadvantage of this method is that as a result of its application, students should find a creative idea in a general way. Because this method does not allow you to work on ideas in detail. That is why it requires a special pedagogical skill: acmeological activity in professors and teachers. Improvisation and humor skills of future teachers have a positive effect on the pedagogical and psychological environment in the audience. In the process of using this method, it is impossible to overcome the obstacles in students' thinking. Because when solving creative tasks of a heuristic nature, a number of reliable methods, methods, and tools are used improperly.

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