

Opportunities For Developing Students' Creative Thinking Skills

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Abstract: This article presents information on opportunities to develop students' creative thinking skills.

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Introduction: Currently, a number of noteworthy works are being carried out aimed at the methods of teaching special subjects, the use of pedagogical and information technologies in the new educational process, and problems of educational and methodological support. In particular, seminars and scientific-practical conferences are held with the participation of leading specialists and qualified teachers from foreign countries on issues of improving the higher education system and the application of modern pedagogical technologies in the educational process.

Students will need to study specialized subjects in depth to develop specific professional skills and master their chosen specialty. Specialized subjects have their own unique characteristics compared to general education subjects and are crucial for teaching their specialization. A different approach is required to organizing the process of teaching specialized subjects, choosing teaching methods, conducting theoretical and practical classes, and creating educational and methodological complexes.

Development of the content of a special subject in order to form in students professional-polytechnical and professional-technical concepts, as well as professional-polytechnical principles and techniques for operating equipment and machines for a specific industry; sequence of implementation of production technologies; scientific foundations of the organization

of professional activity; opinions are expressed about the need to comply with the economic principles of labor activity in the industry [1].

Specialised subjects include knowledge that forms the basis of the skills and qualifications that students need for professional development in a specific field of production, such as engineering or technological processes. Educational literature created for specialized disciplines should comprehensively cover methods of activity, recommend various methods of independent learning, ensure the practical application of acquired knowledge and interdisciplinary integration.

Specialized subjects must include the knowledge, skills and qualifications that a student needs to acquire in his or her chosen profession. As a result of studying specialized disciplines, students acquire knowledge, skills, and abilities related to determining the quality of manufactured products, technical maintenance of machinery and equipment, labor organization and execution of work according to operating methods, analysis of technical documentation, installation, adjustment, and repair of equipment. Students are also taught to comply with occupational health and safety requirements, industrial sanitation and fire safety, organize the workplace, increase student productivity, and independently and creatively improve the quality of work. The theoretical part of the educational material for specific subjects should be developed in conjunction with practical classes, or the developers of

educational material for practical classes should carefully study the theoretical educational material and ensure its coherence.

Another characteristic of specialized subjects is the predominance of visual aids aimed at fully conveying the subject's content. For example, in teaching, the use of drawings, diagrams, and charts in educational materials facilitates understanding of the text. Teaching materials should include a system of different types of questions and tasks to ensure that students acquire sufficient knowledge and skills in the methods of activity related to a particular subject. When developing educational material, the leading component of the special subject "Methods of Activity", clarification of educational goals, distribution of theoretical and practical content in an interdependent order, construction of the text in a clear and logical form, to facilitate the learning process, it is necessary to pay attention to adding pictures, diagrams and drawings, as well as developing topics from simple to complex.

Activity is important when teaching specialized subjects. This manifests itself in students consciously adjusting their actions according to a given model, independently choosing methods of activity that lead to positive results, planning their work, analyzing and correcting errors. The students' activity consists of their ability to visualize the internal processes in the operation of a machine, unit, or device based on external signs and, based on the analysis of these signs, to make appropriate decisions, when necessary, to correct it; this is the ability to optimize acquired methods of activity, think independently, and act skillfully in changing conditions. Students' proactivity is demonstrated by their assimilation of educational material and the completion of theoretical and practical assignments in classrooms, laboratories, workshops, and industrial settings. Proactivity is closely linked to the development of students' independence in their studies and work. Independent thinking is important in everyone's life. Therefore, all forms of classroom training: theoretical, practical, laboratory classes, practice, extracurricular work, During scientific research, students develop skills of independent thinking, and it is important that they are developed by a teacher or scientific supervisor [2].

Independent thinking of students in professional colleges is one of the important factors in effective learning, development of knowledge, skills and competencies, providing them with ample opportunities for independent thinking. The following statement by the methodologist S. Matchanov is also very appropriate: "Only a person who has developed the skills and abilities of reading

and learning can thoroughly master knowledge." When students actively participate in learning and have the opportunity to do so, they develop independent thinking. They also become interested in the opinions of others and sometimes even criticize them.

R.V. Glintershchik established that educational activity leads to methodological activity: in lessons, such a student values only moments of emotional and intellectual tension, clearly and distinctly understands that he has studied the literature well, and tries to control and direct his intellectual activity. The process of developing professional skills and abilities through independent work is always conscious and deliberate. To acquire the skill of independent work, a student must not only understand the purpose of their work but also master learning methods and techniques, and acquire the skills to apply their knowledge in practice. When developing skills and abilities, it's especially important for students to acquire knowledge about how to act in specific situations. Such knowledge is essential for mastering effective methods and techniques for completing practical and intellectual tasks. According to psychologists, acquiring independent work skills is the acquisition of learning methods. It is through cognitive activity that students begin to master the actions and methods necessary to solve various learning problems, using their knowledge of how to act. However, not all skills can be mastered solely through demonstration and verbal explanation. Some practical skills can only be mastered through direct practice. Therefore, it is necessary to consider the need to create conditions conducive to students' mastery of independent work [3].

Along with independent thinking, we'll also explore a number of ideas about creative thinking. Creative thinking is a cognitive strategy that draws on a variety of possibilities and leads to entirely new solutions to problems and challenges. Its psychological mechanism is linked to divergent thinking. It is expressed in the formation of a subjectively new skill, as well as in the creation of novelty in the cognitive activity itself. It differs in nature from reproductive thinking. According to N. Muslimov and Sh. Sharipov, the development of creative thinking in students requires an individual approach to each of them. One of the most important methods for developing creative thinking is engaging students in solving problematic issues or tasks of varying levels of complexity and teaching them to independently find solutions. In practice, problematic issues or tasks can be used in the process of developing creative thinking.

Creative thinking manifests itself in a person's approach to the processes, events, and

phenomena occurring around them, and in the ability to solve various problems using a variety of methods. Creative abilities cannot be developed simply by memorizing scientific formulas, theorems, and definitions. The development of creative thinking is a process carried out through an individual approach to each student. According to U. Sodikov, one of the most important methods for developing creative thinking is involving students in solving the following non-traditional problems of varying levels of complexity, teaching them to search for unique and original solutions [4]:

Questions with insufficient background information;

- Questions with redundant information;
- Questions with contradictory or incorrect information;
- Questions with unclear questions;
- Questions with a time limit.

This grouping of non-standard problems by difficulty level takes into account students' psychological and creative abilities. According to psychologists, if a student studies a problem based on their theoretical and practical knowledge, 70–80% of the problem remains in their memory for a long time. In his study, O. Koisinov, in order to determine students' abilities for independent and creative thinking, divided students' ability to identify important features of general educational material into high, medium, and low levels and characterized them as follows:

High level – easily and quickly identifies important features of the material being studied.

Intermediate level – can generally identify the main features of the material being read, but makes some errors. Low level – usually cannot describe the main features of the material being read.

In his opinion, in order to develop independent and creative work of students at these levels, an individual approach is necessary for each of them. Today, in addition to developing the necessary knowledge, skills, abilities, and qualifications of students in vocational colleges, introducing them to scientific and technological achievements and the fundamentals of science, it is imperative to develop their ability to independently and appropriately apply the acquired knowledge in specific practical situations. One of the leading factors in the formation of a well-rounded personality is the technological activity of students in the production of products in general professional and specialized subjects. At the same time, theoretical knowledge obtained in specialized subjects is consciously applied in practice independently and finds practical embodiment in the manufacture of products.

Thus, by combining physical and mental work in students' activities, their creative abilities are developed.

In K. Abdullaeva's study on the topic "Design, modeling and artistic design of garments" information is given for the first time about the methods of decorating a product, that is, the types of decorations, the methods of their production, application. The student can then be tasked with selecting embellishments for the design based on the fabric used and the type of garment. For example, after learning how the twist knot can create a modern look and how to make it, the student can creatively work on embellishing the garment [5].

In this way, each student develops their own unique creative approach to clothing decoration and strives to create a piece in the form of a new product. The development of science and technology opens up great opportunities for the development of technical creativity among young people. At the same time, this development also generates a need for technical creativity. The prospects for scientific and technological development depend on the extent to which it is provided with creative "human resources".

Research analysis and practical experience show that one of the main areas of development of independent and creative activities of students in specialized subjects is the development and practical implementation of problem-based creative tasks. The concepts of "learning task," "creative task," or "problem" are widely used in pedagogical literature and scientific research.

According to P.I. Pidkasisty, students' ability to acquire knowledge is developed through the process of independently searching for solutions to problematic tasks and their independent implementation [6].

S.L. Rubinstein, analyzing the concept of a task, analyzes the categories of motive, attitude, goal and conditions: motive reveals the student's attitude to the educational task, leads students to the goal, initiates actions. The ability to solve academic problems is a skill that reflects a person's ability to think and reason. By solving academic problems, students develop problem-solving skills for their future professional careers. "A person's conscious activity consists of carrying out orders. In accordance with the instructions, goals and conditions given in the order, it is accepted and resolved".

A.N. Leontiev defined the concept of a task as follows: "A task is a goal given on the basis of certain conditions" [3].

Ya. A. Ponomarev, in interpreting the concept of "task," relies on the category of "task situation." He analyzes

the subject performing the task, the intellect, in the context of the "task situation." "The situation of activity arises from the existence of a subject and an object. The subject supplements, refines, and develops their knowledge based on the complexity of this situation".

L.M. Friedman defines a task as follows: "A task is understood as a written model of a problematic situation".

"We divide the tasks used in teaching into two groups. Tasks whose methods are known to students. We consider such tasks to be exercises. Tasks whose methods are unknown to students. We consider such tasks to be problematic".

A set of learning tasks reflects the basic problems that students solve independently with the help of a teacher. O. Rozykov defined a learning task as follows:

"...an learning task is a modified form of educational material that meets the needs of teaching and education" [4].

According to N. Muslimov, tasks that promote independent learning are designed to create favorable conditions for students whose mastery of concepts, motives, and values is at a low or unsatisfactory level. The very feeling of success creates a psychological state that encourages students to engage in independent learning. In our opinion, completing assignments creates excellent opportunities for transitioning to independent learning. Working on questions and assignments requires students to be creative, artistic, aesthetically pleasing, and proactive. By working on questions and assignments in a textbook, students work hard, seek, and find answers to their questions. Thus, knowledge obtained through hard work, acquired skills and abilities gradually and spontaneously form a scientific and life outlook, high moral qualities that are forever imprinted in the heart and mind of a person. In order for students to be interested in quickly and efficiently completing a particular practical task, it is important to direct their rationalization activities towards the creation of various devices that reduce the labor intensity of processes and increase labor productivity.

The teacher's setting of specific requirements for students' independent learning activities enriches their content. Learning tasks should be based on previously acquired knowledge. Creative tasks include creative exercises, creative independent work and various didactic games. If the knowledge obtained during creative exercises is applied in new learning situations, then creative independent work is characterized by the formation of new conclusions from factual data and the use of new methods of activity [4].

In the process of completing educational tasks, it is important to develop such skills as organizational skills (independent organization of educational activities), content-procedural (knowledge of the content and essence of educational activities and the development of personal qualities that determine the effective implementation of these activities), self-assessment) in the process of independent learning. An educational task is defined as an organizational form of independent learning and on its basis the requirements for the system of educational tasks are developed. When a teacher uses a problematic situation to reflect the contradictory characteristics of the phenomenon or process being studied, the objective problem becomes a learning problem. A learning task should be presented as a problem that is understandable to students. When developing learning assignments for independent and creative work, it is recommended to adhere to the following guidelines:

- assignments should be problem-oriented and address real-world situations;
- solving a problem in a learning assignment requires developing students' thinking skills using various methods;
- The content of assignments should reflect important connections between the events and processes they reflect;
- Assignments should provide opportunities to find solutions and strengthen connections between events or processes in students' minds;
- During the assignment process, students should be given the opportunity to derive more complex concepts from simple ones that they have not yet mastered;
- During the assignment process, simple concepts are analyzed in relation to concepts unknown to the student;
- When completing an assignment, the student processes concepts without changing their form or content, and also makes adjustments;
- New knowledge is formed through creative thinking.

The teacher constantly monitors the students' initial actions as they complete the assignments. By analyzing the solutions to the problems, the student learns general techniques for completing the tasks. The tasks should be made more challenging. Talented students with creative and research skills should be able to complete complex tasks, while less prepared students should be able to complete simple tasks, but they should also be able to work in a group. Students' independent and creative thinking skills can be divided

into the following three levels:

1. The student independently searches for solutions to problems and complete tasks, thinking and reasoning independently.
2. The student independently completes the assigned task or assignment, but does not apply a creative approach.
3. Solves problems independently as they progress, but does not monitor the accuracy of the results. May create similar problems or problematic situations.
4. Tries to use ready-made solutions to problems. Seeks help when difficulties arise in solving a problem.

Incapable of independently solving a problem or task. When teaching specialized subjects in vocational colleges today, developing students' technical creativity—that is, technical thinking, spatial imagination, design thinking, the ability to apply knowledge in specific problem situations, and other skills—is of great importance. Effective organization of independent work is of great importance in the formation and development of technical creativity of students in vocational colleges, since students can develop their creative abilities by independently completing assignments or exercises. Students who independently create a new product develop the personal qualities and skills necessary for creative work in the field of technology. In scientific and pedagogical literature, students' technical creativity is viewed as a technical activity that creates a product that is novel. For example, technical activities may include proposals for improving equipment and technology, industrial designs, sketches of finished models, and projects. Technological knowledge and skills are of great importance in shaping the technical creativity of future designers, fashion designers, engineers, and technologists. During the process, students must solve a variety of creative problems, demonstrating their professional skills. For example, it's important that students complete all the key stages of the process before the finished product is ready. Research conducted to develop independent work and creative thinking in students during the course of teaching "Costume Design and Graphics" has shown that: Through practical exposure, students develop technological and technical thinking, which ensures the development of independent thinking. The development of technological and technical thinking is characterized by sensitivity and logical thinking, clarity of signs, analysis and explanation of observations, vision of patterns and features of technical objects and technological processes, their understanding and

explanation. The development of independent and creative work skills in students, especially during industrial training organized in vocational colleges, creates greater opportunities for them to acquire independent work skills.

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