



METHODOLOGY FOR ENSURING THE INTEGRATION OF EDUCATION, SCIENCE AND PRODUCTION IN THE TRAINING OF MIDDLE-LEVEL PERSONNEL

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Abstract: This article analyzes methodological approaches aimed at ensuring the integration of education, science and production in the training of middle-level personnel from a scientific, theoretical and practical perspective. The increasing demand for middle-level personnel and the importance of developing their professional competence in the changing conditions of the modern economy are emphasized. The article considers the concept of integration, its relationship between education, science and production, as well as methodological tools and methods aimed at ensuring this integration. As a result of the study, recommendations are made on the development of effective integration strategies in the training of middle-level personnel.

Keywords: Middle management, professional competence, education, science, production, integration, methodology, industry, management, technology.

Аннотация: В статье анализируются методические подходы, направленные на обеспечение интеграции образования, науки и производства в подготовке кадров среднего звена с научно-теоретической и практической точки зрения. Подчеркивается возрастающая потребность в кадрах среднего звена и важность развития их профессиональной компетентности в изменяющихся условиях современной экономики. В статье рассматривается понятие интеграции, взаимосвязь образования, науки и производства, а также методические инструменты и методы, направленные на обеспечение этой интеграции. В результате исследования даны рекомендации по разработке эффективных стратегий интеграции в подготовке кадров среднего звена.

Ключевые слова: Среднее звено управления, профессиональная компетентность, образование, наука, производство, интеграция, методология, отрасль, управление, технологии.

Sustainable economic development and modernization of industry depend, first of all, on the qualifications and training of middle-level personnel. The potential of this personnel plays a decisive role in increasing the efficiency of production processes, introducing new technologies and ensuring economic





growth. Ensuring the integration of education, science and production is an important task in improving the system of training middle-level personnel. Integration is the combination of various elements into a single system and increasing their mutual effectiveness. This article considers the methodological foundations and practical directions for ensuring the integration of education, science and production in the training of middle-level personnel.

The training of highly qualified specialists in the modern education system, based on the specificity of educational areas, requires future educators of preschool educational organizations to determine the requirements for the development of their professional knowledge. At the same time, it requires the constant introduction of new complex technologies and innovative teaching methods into the education system when providing future educators of preschool educational organizations with knowledge in the field of information technologies. In addition to teaching in the classroom and outside the classroom, it also requires the preparation of students for professional activity in preschool educational organizations.

In the formation of a national system of informatization, in the use of modern information complexes and technologies (ICT), computer equipment and telecommunications in all spheres of education and social life, the teaching of the subject "Information Technologies in Professional Activity" is of great importance. This methodological manual is written based on the curriculum and subject plan of the subject "Information Technologies in Professional Activity" and is intended for students studying in the areas of educator specialties of pedagogical colleges of the vocational education system and educators of preschool educational organizations. The main goal of teaching the subject "Information Technologies in Professional Activity" is to deeply and comprehensively familiarize students with modern technical means, principles and methods of automating computing processes, and developing media literacy using innovative technologies.

Nowadays, there is a growing interest in the use of interactive methods, innovative technologies, pedagogical and information technologies in the educational process. While until now, students have been mainly taught to acquire ready-made knowledge, modern technologies teach them to search for the knowledge they acquire themselves, to study and analyze it independently, and to draw conclusions on their own, if possible. In this process, the teacher creates conditions for the development, formation, acquisition of knowledge and





upbringing of the individual, and at the same time performs the function of management and guidance.

Innovation is an English word that means innovation, novelty. Innovative technologies are innovations and changes in the pedagogical process and the activities of students and teachers, and interactive methods are mainly used in its implementation.

Interactive methods are based on collective thinking and are methods of pedagogical influence, which are an integral part of the content of education. The uniqueness of these methods is that they are implemented only through the joint activities of the teacher and the student. Interactive teaching is a special organizational form of developing cognitive activity, which is characterized by the fact that in the process of interactive teaching the student turns from the object of teaching into the subject of interaction, actively participating in the learning process.

The effective course of any educational process, the successful organization of professional activity depends on the factors affecting it. Accordingly, during the research period, it is advisable for professors and teachers to use modern interactive teaching methods in activities aimed at acquiring the necessary professional competencies by students.

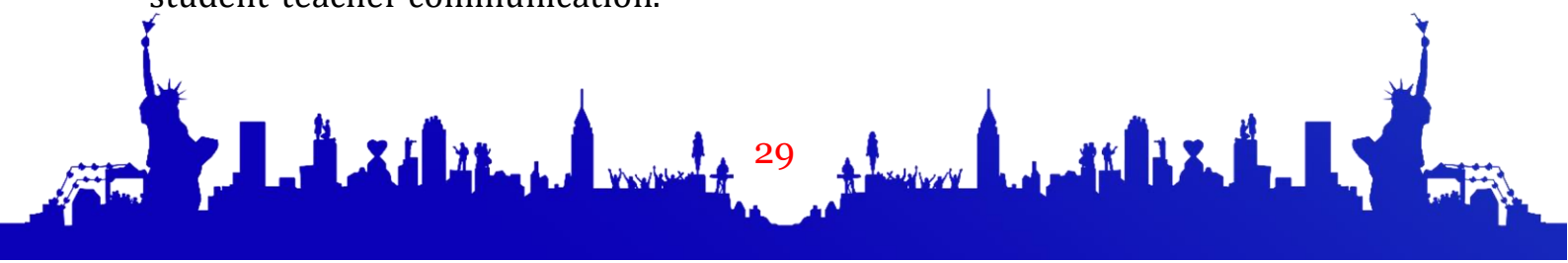
The process of conducting internships was carried out based on a methodology that helps to model and implement the process of developing students' production and technological competencies.

Choosing interactive teaching methods. Lessons organized using interactive teaching methods encourage students to think creatively, actively process the information received, express their thoughts freely, take the initiative, find solutions to problems in groups, work together, and express their thoughts in writing.

Interactive teaching methods are methods that implement the learning process within the framework of mutual communication and interaction of students. The word "interactive" is derived from the English word "interact", that is, "inter" means "mutual", "act" means "action, influence, activity".

Interactivity is the interaction of two people, that is, in this case, the learning process takes place in the form of a dialogue (using a computer) or based on the interaction of the student.

Interactivity occurs in the process of mutual activity, action, influence, student-teacher communication.





The main goal of interactive teaching methods is to create an environment for active, free thinking of the student by creating the most favorable conditions for the learning process. It manifests its intellectual potential and ensures an increase in the quality and efficiency of the learning process.

In the process of using interactive teaching methods, students have the following opportunities:

- work in a group or team;
- creative approach to solving a problem;
- achieve spiritual closeness with their group or teammates;
- be able to fully demonstrate their internal capabilities and abilities;
- think, summarize thoughts, select the most important ones;
- control and independently evaluate their activities;
- gain confidence in their capabilities and strengths;
- master the skills of navigating in different situations and getting out of difficult situations.

In vocational education, it is advisable to use modern interactive educational methods in the process of preparing future secondary school specialists for professional activity based on an integrative approach. Below we will consider several integrated educational technologies aimed at preparing future secondary school specialists for professional activity.

Flipped Classroom: Teachers prepare lesson materials for home teaching, and more time is allocated in the classroom for discussion and practical exercises. This method encourages active participation of students.

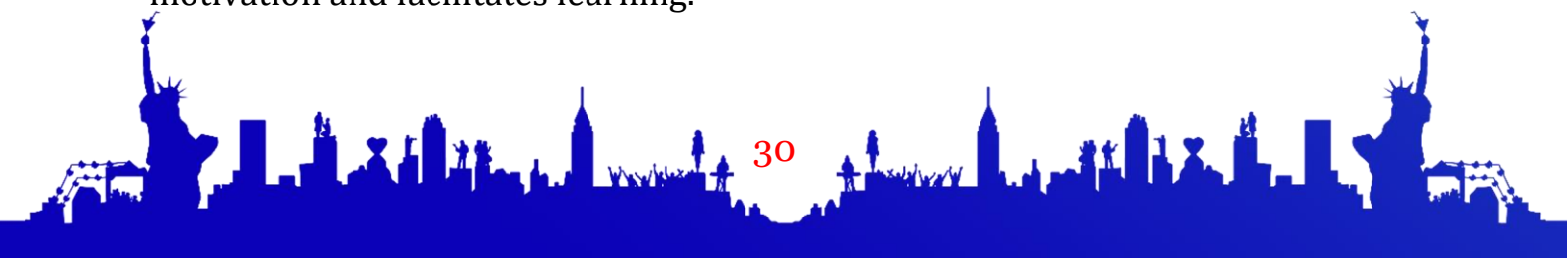
Project-Based Learning: Students work on projects to solve real-life problems. This method develops self-study and teamwork skills.

Problem-Based Learning: Students acquire knowledge and skills through problem-solving. This method focuses on analyzing problems and finding solutions.

Inquiry-Based Learning: Students learn by asking questions and conducting their own research. This method encourages self-study and analytical thinking.

Collaborative Learning: Students share their knowledge by working in groups. This method develops teamwork and communication skills.

Game-Based Learning: Making the learning process interesting and effective through games and interactive activities. This method increases motivation and facilitates learning.





Cooperative Learning: Students work in small groups, which develops teamwork and mutual assistance. Students learn from each other and achieve goals together

VAK Learning: Combines visual, auditory, and kinesthetic learning methods. Students work with materials that match their learning style.

Ensuring the integration of education, science and production in the training of middle-level personnel is of crucial importance for increasing the competitiveness of the Uzbek economy and introducing new technologies. To implement this integration, it is necessary to adapt vocational education programs to industrial requirements, establish strong cooperation between science and production, widely use practice-oriented teaching methods, improve the skills of teachers and mentors, and effectively use modern ICT. This comprehensive approach will allow the formation of a high level of professional competence of middle-level personnel, their successful operation in the labor market and contribute to the sustainable development of the country's economy.

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