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# ARTÍCULO DE INVESTIGACIÓN

# Desarrollar la preparación profesional de los futuros profesores para el trabajo pedagógico

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### Resumen

Este artículo examina detalladamente el problema de la preparación de los licenciados para la enseñanza profesional, tanto desde la perspectiva de la literatura científica como de la práctica pedagógica. En particular, se enfoca en explicar el concepto de "preparación de los licenciados para las actividades profesionales y pedagógicas" en instituciones educativas que ofrecen programas de formación profesional secundaria. El artículo establece las condiciones pedagógicas necesarias para desarrollar la preparación de los licenciados en este tipo de actividades. Se presenta un modelo metodológico fundamentado en teoría para el desarrollo de la preparación de los licenciados en la enseñanza profesional en instituciones de formación profesional. Además, los autores describen el desarrollo y la implementación de un sistema metodológico para preparar a los licenciados en la enseñanza profesional, el cual incluye una serie de medidas destinadas a mejorar el nivel de preparación de los futuros profesores. En la parte final del artículo se ofrecen recomendaciones metodológicas para el desarrollo de la preparación de los licenciados en la enseñanza profesional, con un enfoque práctico en el proceso educativo. En resumen, este artículo representa una valiosa contribución al campo de la ciencia y la práctica pedagógicas al proporcionar un enfoque integral para preparar a los licenciados para una labor efectiva en el ámbito educativo. Este estudio será de utilidad tanto para profesores, metodólogos y directores de instituciones educativas, como para investigadores interesados en temas de educación profesional y formación docente.

**Palabras clave:** sistema educativo, condiciones pedagógicas, recomendaciones metodológicas, formación profesional secundaria

### Abstract

# Develop the professional preparation of future teachers for the pedagogical work

This article provides an in-depth analysis of the issue of preparing graduates for professional teaching roles, as discussed in scientific literature and pedagogical practice. It primarily focuses on explaining the essence of the concept of "preparing graduates for

professional and pedagogical activities" in educational organizations offering secondary vocational training programs. The article establishes the necessary pedagogical conditions for developing graduates' preparedness for such activities. A theoretically grounded methodological model is presented for developing the preparation of graduates for professional teaching activities in vocational education organizations. Furthermore, the authors describe the development and testing of a methodological system to prepare graduates for professional teaching activities. This system includes a set of measures aimed at enhancing the level of preparedness of future teachers. The final part of the article provides methodological recommendations for developing the preparedness of graduates for professional teaching roles, with a focus on practical application in the educational process. Overall, the article represents a valuable contribution to the field of pedagogical science and practice by offering an integrated approach to preparing graduates for effective work in the educational domain. This study will be beneficial for teachers, methodologists, educational institution directors, as well as researchers interested in issues related to professional education and teacher training.

**Keywords**: educational system, pedagogical conditions, methodological recommendations, secondary vocational education.

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### 1. Introduction

In the modern educational environment, special attention is paid to the training of highly qualified teaching staff capable of effectively coping with the dynamically changing requirements of the educational sphere. A key aspect in this process is the formation of professional readiness of future teachers. This topic occupies a central place in pedagogical science and practice, since it is readiness for professional activity that determines the effectiveness of the pedagogical process and the quality of education in general.

The development of professional readiness covers a wide range of aspects: from theoretical knowledge and methodological training to practical skills and psychological adaptation to the future profession. It is important to recognize that professional readiness is not limited to just academic knowledge; it also includes the development of personal qualities, emotional intelligence, the ability to work in a team and find an individual approach to each student (Novoa, A., 2017).

In the modern educational context, it is important to emphasize innovative teaching methods, including the use of digital technologies and interactive pedagogical

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approaches. This is necessary in order to prepare future teachers to effectively conduct the educational process in an ever-evolving and technologically saturated world.

As part of this work, the complex structure of professional readiness of future teachers will be considered, the key components and mechanisms of their development will be identified. Modern approaches and strategies in education aimed at improving the quality of teacher training, which is an integral part of the strategy for the development of the educational system, will also be explored (Sahlberg, P., 2011).

Particular attention in the work will be paid to the issues of integrating theoretical knowledge with practical skills, as well as developing the ability of future teachers to self-learn and professional self-development. In the context of these aspects, it will be considered how educational institutions can contribute to the formation of full-fledged professional readiness in their students, which will ultimately lead to improved quality of education and training in general.

In conclusion, it will be emphasized that preparing future teachers for professional activities is a complex and multifaceted task that requires coordinated efforts from both educational institutions and students. Only through such a joint approach can the goal be achieved - training qualified, motivated and ready for new challenges teachers who are able to contribute to the development of the educational sector.

In modern conditions of rapid development of industries, a special role is assigned to the teacher who provides high-quality professional training for mid-level specialists. This problem can be solved provided that the bachelor's readiness for professional and pedagogical activities in technical specialties in professional educational organizations is formed (Meyer, H., 2010).

Modern requirements for the future vocational training teacher are enshrined in the educational standards of higher education. In this regard, one of the criteria for determining the quality of a teacher's readiness for professional pedagogical activities in technical specialties is the level of development of professional pedagogical knowledge and skills, professionally significant qualities. Achieving a high level of bachelor's readiness depends on the coordination of goals, content, methods, organizational forms, methods, pedagogical and production technologies used in higher education.

# 2. Methodology

As a result of the analysis of scientific literature and dissertations on the research topic, the methodological foundations of the formation of teachers' readiness for professional activities were studied, namely: the importance of the concepts of a teacher's professional readiness for professional and pedagogical activities was revealed (Korthagen, F. A. J., 2004), (Meyer, H., 2010), (Novoa, A., 2017), (Sahlberg, P., 2011), (Wenger, E., 1998), (Biesta, G., 2015), (Day, C., 2004), (Niemi, H., & Nevgi, A., 2014),

(Darling-Hammond, L., & Lieberman, A. (Eds.), 2012), (Menter, I., et al., 2010), (Zeichner, K., & Liston, D., 2013), (Tatto, M. T. (Ed.), 2015).

The reliability of the results, conclusions and recommendations obtained during the study was ensured by the theoretical and methodological validity of the main idea of the study, based on regulatory documents in the field of higher and secondary vocational education.

Implementation of professional training for bachelors, as well as mid-level specialists; long-term nature of experimental work; the comprehensive nature of the use of research methods, corresponding to the goals and objectives of the study; confirmation of the hypothesis put forward to study the problem; quantitative and qualitative research results.

However, we have not identified any studies that would reflect the problem of developing the readiness of bachelors for professional and pedagogical activities in technical specialties. The feasibility of research in this direction is evidenced by the contradictions between:

- The need of society for professionally trained teachers of vocational training of a technical profile, capable of using pedagogical and production innovations in the educational process and the insufficient level of formation in them of readiness for professional pedagogical activities;
- Increased requirements of professional educational organizations for the quality of vocational training and insufficient validity of the theoretical foundations for the formation of bachelors' readiness for professional and pedagogical activities in technical specialties;
- The objective need of teaching practice for a qualitatively new system for the formation of professional knowledge, skills, personal and professionally significant qualities of the future teacher and the insufficiently developed methodological foundations for their design and use in the educational process of higher education.

These contradictions, the social significance of developing the readiness of bachelors for professional and pedagogical activities in technical specialties, and the insufficient justification of the research problem in pedagogical theory and practice determined the topic of the study.

The methodological basis of the study was:

- A systematic approach that allows for a comprehensive study of the process of developing the readiness of bachelors for professional and pedagogical activities as an integral system;
- A competency-based approach, focused on mastering the system of professional competencies of bachelors necessary for organizing and managing the educational process in professional educational organizations;

- A synergetic approach aimed at the process of self-organization of the student's personality through self-determination, considered as an adaptation of the individual's internal needs to the conditions of the real situation, methods of various types of activities;
- An activity-based approach that ensures the orderly action of a vocational training teacher in organizing and managing various types of activities of students in the learning process;
- A personality-oriented approach aimed at the development of each subject of the educational process based on the creation of certain conditions, taking into account the individual qualities of the student's personality.

These methods are used in various combinations depending on the specific objectives of the study. The key aspect is the choice of methods that will most effectively help to study and analyze various factors and conditions affecting the professional readiness of future teachers. It is also important to ensure that the methods chosen are consistent with ethical guidelines and scientific research standards.

The purpose of the article is to substantiate the theoretical and methodological foundations and experimentally test the effectiveness of the methodological system for developing the readiness of bachelors for professional teaching activities.

Object of the article: professional and pedagogical training of bachelors in higher education.

Subject of research: methodological foundations for developing the readiness of bachelors for professional and pedagogical activities in technical specialties.

### 3. Results

Research hypotheses:

- It is possible that the content of the concept "readiness of bachelors for professional-pedagogical activities in technical specialties" can be clarified on the basis of a semantic analysis of key research concepts related to pedagogical, professional and professional-pedagogical activities;
- It is possible that the proposed pedagogical conditions will ensure an effective process of developing the readiness of bachelors in higher education;
- It is possible that the proposed model will ensure the implementation motivational, content-based, professional-technological and personal-developmental components aimed at developing the levels of readiness of bachelors for professional and pedagogical activities in technical specialties in professional educational organizations;
- It is possible that the proposed methodological system will provide a phased and multi-level formation of the readiness of bachelors of automotive specialization for professional and pedagogical activities in technical specialties;

– It is possible that the developed methodological recommendations will have a practical orientation, which will allow university teachers to use them in the process of preparing for lectures, practical and laboratory classes.

We considered the readiness of a bachelor for professional pedagogical activity from the position of a bachelor-graduate in the role of a teacher of vocational training through his functional responsibilities, based on the integration of two types of activities in professional educational organizations: a teacher of general professional disciplines and interdisciplinary courses; master of industrial (practical) training, in our case, in the specialization: "Service and operation of road transport."

### 4. Discussion

Deepening the study of the essence of the professional pedagogical activity of a vocational teacher in professional educational organizations made it possible to formulate the content of the concept of "readiness of bachelors for professional pedagogical activity in technical specialties," which we considered as: "an interactive quality of personality, expressed by a system of formed knowledge, skills and professionally significant qualities necessary for the implementation of secondary vocational education and vocational training programs in professional educational organizations" (Korthagen, F. A. J., 2004).

The presented model for the formation of bachelors' readiness for professional and pedagogical activities in technical specialties is a graphic representation of the goal, content, didactic principles, methodological approaches, main components, pedagogical conditions, stages of formation of a future specialist, criteria, indicators and level of formation of bachelors' readiness (Menter, I., et al., 2010).

The strategic goal is aimed at training a competitive specialist; tactical goals contribute to obtaining the maximum positive result in the development of bachelors, shaping their readiness for future activities; operational goals contributed to the daily and systematic formation of professional pedagogical knowledge and skills, professionally significant qualities.

A functional analysis of the professional and pedagogical activity of the future vocational education teacher made it possible to identify the main components of readiness: motivational, content-based, vocational-technological, personal development. Based on the results of the analysis of scientific sources and practical experience, the most significant pedagogical conditions for the formation of bachelors' readiness for professional and pedagogical activities in technical specialties were identified, including: the formation of positive motivation for bachelors to master the system of professional competencies necessary for the high-quality training of mid-level specialists; mastering production and pedagogical innovative technologies; ensuring the

development of the student's creative potential in the process of subject-subject interaction.

Criteria and indicators have been developed that determine the content of the maturity of the components of the model; the levels of preparedness of bachelors for professional and pedagogical activities in technical specialties have been determined (basic, sufficient, high) (Tatto, M. T. (Ed.), 2015).

The proposed methodological system for developing the readiness of bachelors for professional and pedagogical activities in technical specialties is a set of interrelated structural elements such as: goals, content, organizational forms, methods and technologies of training, which are most consistent with the development of technical and technological thinking and are aimed at developing the skills to make optimal solutions in non-standard situations (Wenger, E., 1998).

In the practice of higher education, to develop the readiness of bachelors for professional pedagogical activities, it is advisable to use game, project, case, information and communication technologies and cooperation technologies, which are aimed at achieving positive results in the formation of a system of professional pedagogical knowledge and skills, the development of professionally significant qualities (Iasechko S., Pereiaslavska S., Smahina O., Lupei N., Mamchur L. and Tkachova O., 2022).

The data obtained during the formative stage were summarized and compared with the results of the ascertaining stage of the pedagogical experiment. The result of the analysis of the achievements of the motivational component at the formative stage of the experiment revealed that the number of respondents with a high level of motivation reached 46.0%, which is 10.3% more compared to the results of the ascertaining stage of the experiment; the number of respondents with a sufficient level increased by 45.2%, which is 14.1% more compared to the results of the ascertaining stage, and with a basic level of motivation the number of respondents decreased significantly, which indicates the reliability of the differences. Consequently, a comparative analysis of the results obtained indicates that significant changes have occurred in the positive motivation of bachelors.

The results obtained at the ascertaining stage of the pedagogical experiment were the basis for determining the content of the formative stage of the experiment. During the formative stage of the pedagogical experiment, the effectiveness of introducing a methodological system for developing the readiness of bachelors for professional and pedagogical activities in technical specialties into the educational process in higher education was checked.

The dynamics of the formation of bachelors' readiness for professional and pedagogical activities in the content component in the experimental group at the formative stage of the pedagogical experiment in comparison with the ascertaining one

indicates that the number of bachelors with a high level increased to 20%, with a sufficient one by 7.1%, and with a basic level the number of bachelors decreased to 27.1%. This is confirmed by statistically significant differences ( $\chi^2=5.773$ ), i.e. it is practically equal to the threshold value and it can be argued that there are significant differences in the parameters under consideration. A comparative analysis of the results of the technological component to professional and pedagogical activities in professional educational organizations revealed that with a high level at the formative stage, compared with the ascertaining one, there were 17.1% more respondents, with a sufficient level there were 4.3% more respondents, and with the basic level the number of respondents decreased by 21.4%. The difference is statistically significant ( $\chi^2=6.10134$ ) at level = 0.05.

The dynamics of the preparedness of bachelors for the personal development component in the experimental group at the formative stage of the experiment, in comparison with the ascertaining one, revealed that the number of respondents with a high level increased by 20%, with a sufficient level of respondents increased by 7.1%, and with a basic level the number of respondents decreased by 27.1%. The resulting differences are statistically significant ( $\chi^2 = 6.02317$ ) at the level = 0.05.

Thus, the results obtained confirmed the hypothesis and evidenced the achievement of the goal and assigned tasks.

## 5. Conclusion

Thus, in statistics, the improvement of the concept of "formation of the readiness of bachelors for professional and pedagogical activities in technical specialties in professional educational organizations in which programs of secondary vocational education and vocational training are implemented", as a subject of scientific knowledge in the context of the competence paradigm and the functional content of professional and pedagogical activities. A methodological system for developing the readiness of automotive bachelors for professional and pedagogical activities in technical specialties has been developed, justified and experimentally tested; it reflects the dynamics of the formation of professional and pedagogical knowledge, skills, and professionally significant qualities through the implementation of goals (strategic, tactical, operational); content of training future vocational teachers; the use of modern forms of organizing the educational process, active and interactive teaching methods (problem-based, training, moderation method); innovative technologies (games, design, case studies, information and communication technologies, cooperation technologies). A set of pedagogical conditions has been developed and introduced into the practice of an educational organization to promote the formation of bachelors' readiness for professional and pedagogical activities in technical specialties (formation of positive motivation for mastering the system of competencies; mastering production and pedagogical technologies; ensuring the development of the creative potential of students in the process of subject-subject development of interaction; scientific and methodological provision for the formation and improvement of theoretical knowledge and practical skills).

Based on a qualitative and quantitative analysis of the results of the pedagogical experiment, indicators were established that confirm the trend towards positive dynamics in the formation of professional pedagogical knowledge, skills, and professionally significant qualities at three levels (basic, sufficient, high).

Thus, the dynamics of the formation of bachelors' readiness for activities in the content component in the experimental group at the formative stage of the pedagogical experiment, in comparison with the ascertaining one, indicates that the number of bachelors with a high level increased to 20%, with a sufficient level by 7.1%, and with a basic level the number of bachelors decreased up to 27.1%. This is confirmed by statistically significant differences (x2 = 5.773); A comparative analysis of the results of diagnosing the levels of formation of the professional-technological component for professional-pedagogical activities in technical specialties revealed that with a high level at the formative stage, compared with the constant level, there were 17.1% more respondents, with a sufficient level - by 4.3%, and with the base number of respondents decreased by 21.4%. The difference is statistically significant (x = 6.10134) at level = 0.05; The dynamics of the formation of the readiness of bachelors of the personal development component in the experimental group at the formative stage of the experiment, compared with the constant one, revealed that the number of respondents with a high level increased by 20%, with a sufficient level, more by 7.1%, and with a basic level, the number of respondents decreased by 27.1%. The results obtained confirmed the hypothesis and evidenced the achievement of the goal and assigned tasks.

Based on the results of the study, methodological recommendations were prepared regarding the formation of bachelors' readiness for professional teaching activities in professional educational organizations. They reflect the methodology of organizing and managing the educational process; innovative, organizational forms, methods and technologies of training are considered in technical specialties; the main approaches to conducting lectures, practical and laboratory classes, industrial and pedagogical practices, and self-educational activities of students are considered.

The reliability of the results, conclusions and recommendations obtained during the study was ensured by the theoretical and methodological validity of the main idea of the study, based on regulatory documents in the field of higher and secondary vocational education; implementation of professional training for bachelors, as well as mid-level specialists; long-term nature of experimental work; the comprehensive nature of the use of research methods, corresponding to the goals and objectives of the study; confirmation of the hypothesis put forward to study the problem; quantitative and qualitative research results (Tsilmak, O., Iasechko, S., Poplavska, M., Motlyakh, O., & Kabanets, O., 2022).

Based on the results of the study, methodological recommendations were prepared regarding the formation of bachelors' readiness for professional teaching activities in professional educational organizations. They reflect the methodology of organizing and managing the educational process; innovative, organizational forms, methods and technologies of training are considered in technical specialties; the main approaches to conducting lectures, practical and laboratory classes, industrial and pedagogical practices, and self-educational activities of students are considered.

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