

Formation of Professional Competence Among Students of Rural Institutions of Education in the Context of COVID-19

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ABSTRACT. The main purpose of the article is to study the main qualities of the formation of professional competence among students of rural institutions of education in the context of COVID-19. In the modern world, where knowledge and technology are updated faster than the life of one generation of people, the educational process should be directed not only to mastering basic knowledge but also to acquiring the need, skills, and abilities to independently assimilate new knowledge and information throughout life and effectively use them in practice. The research methodology involves the use of IDEF0 technology. The key result of the study is the presented methodological approach to modeling and the model itself. The novelty and value of the results obtained lie in the presented model and blocks.

Keywords: pedagogy, rural education, creative growth, coronavirus pandemic, modeling, methodical approach, diagrams.

Formação de competência profissional entre alunos de Instituições Rurais de ensino no contexto da COVID-19

RESUMO. O objetivo principal do artigo é estudar as principais qualidades da formação de competência profissional entre estudantes de instituições rurais no contexto da COVID-19. No mundo moderno, onde o conhecimento e a tecnologia são atualizados mais rapidamente do que a vida de uma geração de pessoas, o processo educacional deve ser direcionado não apenas para o domínio do conhecimento básico, mas também para a aquisição da necessidade e habilidades para assimilar de forma independente novos conhecimentos e informações ao longo da vida, e usá-las efetivamente na prática. A metodologia de pesquisa envolve o uso da tecnologia IDEF0. O principal resultado do estudo é a abordagem metodológica apresentada para modelagem e o próprio modelo. A novidade e valor dos resultados obtidos residem no modelo e blocos apresentados.

Palavras-chave: pedagogia, educação do campo, crescimento criativo, pandemia do coronavírus, modelagem, abordagem metódica, diagramas.

Formación de Competencias Profesionales entre Estudiantes de Instituciones de Educación Rurales en el Contexto del COVID-19

RESUMEN. El artículo tiene como propósito principal estudiar las principales cualidades de la formación de la competencia profesional entre estudiantes de instituciones de educación superior rurales en el contexto del COVID-19. En el mundo moderno, donde el conocimiento y la tecnología se actualizan más rápido que la vida de una generación de personas, el proceso educativo debe estar dirigido no solo a dominar los conocimientos básicos, sino también a adquirir la necesidad, destrezas y habilidades para asimilar de manera independiente nuevos conocimientos y información a lo largo de la vida y utilizarlos eficazmente en la práctica. La metodología de investigación implica el uso de la tecnología IDEF0. El resultado clave del estudio es el enfoque metodológico presentado para el modelado y el modelo en sí. La novedad y valor de los resultados obtenidos radica en el modelo y bloques presentados.

Palabras clave: pedagogía, educación rural, crecimiento creativo, pandemia de coronavirus, modelado, enfoque metódico, diagramas.

Introduction

The concept of competence-based education and educational competence came to us from foreign countries, where it is widely used. Researchers understand human competence as a specially organized complex of knowledge, skills, and abilities acquired in the learning process. They allow a person to define, that is, to identify and solve, regardless of the situation, the problems characteristic of a particular field of activity (Hanke, Ifenthaler & Seel, 2011).

In modern conditions, domestic researchers use the concepts of "competence" and "competence". An analysis of the scientific literature concerning this problem gives grounds to note that the concept of "competence" is traditionally used in the sense of "the terms of reference and rights", and "competence" is usually associated with awareness, authority, qualifications, or "the totality of the necessary knowledge and personality traits, which gives the right to professionally approach the solution of issues in a certain area.

Considering professional competence from the standpoint of acmeology, it is advisable to single out the following main types of it: special competence, which ensures possession of professional activities at a high level and the ability to design further development; social competence, which determines the possession of a common (group) professional activity, appropriate forms of communication, pedagogical interaction; personal competence, which ensures the mastery of the methods of personal self-expression and self-development, which oppose the professional deformation of the personality. The presence of the above types of competence means the maturity of a person in professional activities, communication, the formation of a professional personality, in the formation of his skills (Glover et al., 2016; Sylkin, 2021).

But, highlighting atomic competencies concerning professional competence, it should be noted that professional competence is not a total set of certain atomic competencies but is a hierarchical system of interrelated atomic competencies that tend to change over time.

The competency-based approach focuses on the final result of the educational process and aims to form a future specialist's readiness to effectively use potential opportunities and external resources to achieve the set goals.

Competitive specialists must have professional skills based on modern specialized knowledge of a particular industry and a high level of professional competence based on critical thinking and the ability to apply theoretical achievements in practice (Brenner, 2016).

One of the leading tasks of rural education institutions at the present stage of modernization of the higher education system is the search for forms of its integration with science and production, increasing the role and responsibility of a specialist, ensuring the quality of training specialists at the level of international requirements, in particular, overcoming the gap between the level of theoretical knowledge of students and practical skills of their application in the process of professional activity (Schott & Seel, 2015).

It should be noted that there are some gaps in the scientific and practical literature that we seek to correct. For example, scholars such as Brenner (2016) and Azano (2019) propose a number of areas for improving rural education and professional competence but present this without a proper methodological approach.

Taking this into account, the main purpose of the article is a theoretical study of the current features of the formation of professional competence among students of rural institutions of higher education in the context of COVID-19.

Methodology

The main purpose of the article is a theoretical study of the current features of the formation of professional competence among students of rural institutions of higher education in the context of COVID-19. For this, a number of methods were applied, which form the research methodology. The study was carried out using the following theoretical methods: systems analysis and synthesis, induction and deduction, comparison, classification, generalization, systematization, idealization, and abstraction. In addition, the IDEF0 functional modeling method was used to graphically display the results obtained.

Systematization, generalization, and abstraction concerned the information received during the analysis of the literature and were used to form conclusions.

Functional modeling IDEF0 is a technology for describing the educational system as a whole as a large number of interrelated actions, or functions within it (for example, professional and professional competence). It is important to note the functional orientation of IDEF0 - the blocks of the educational system are studied independently of the objects that ensure their implementation. The functional point of view makes it possible to separate the aspects of the purpose of the system from the aspects of its physical implementation.

Research Results

Rural education has played and continues to play a special role in society, constituting the domestic educational system, influencing the social, economic, cultural, and spiritual, development of the village, and solving problems associated with the harmonious development of the individual in conditions of social transformations.

The problems of the rural school are increasingly becoming the focus of attention of the state and the public (Bansak & Starr, 2021):

- how to create an attractive and sufficiently serious system of education in the village, giving priority to the differentiation and individualization of education?
- how to draw public attention to the need for rural education?
- how to prevent the collapse of the network of small-scale rural educational institutions?
- how to avoid the impact of demographic changes that annually devastate villages and rural educational institutions?

At the present stage, according to the recommendations of UNESCO, on the transition to the concept of human competence and the provisions of the National Qualifications Framework, the term "competence" is becoming the leading term in assessing the level of qualification of an employee, the most important criterion for vocational training and an integral indicator of the quality of the workforce.

The relevance of the problem of developing competence among future skilled workers in the process of choosing and implementing a professional career is because the system of rural education should provide graduates with an effective tool for adapting to life in changing social and production conditions, namely: to form practical skills that support any professional functions, significant for the life of a person and society; stimulate the ability to work effectively in a team; interact productively with the social educational environment; constantly improve yourself. The problem of the formation of social and professional competence of students of future skilled workers is very relevant in the context of preserving and maintaining the psychological health of the nation (Kryshtanovych, Gavrysh, Khltochina, Melnychuk & Salnikova, 2020).

In accordance with the modernization of rural education, the main goal of vocational education is to train a qualified worker of the appropriate level and profile, competitive in the labor market, competent, responsible, fluent in his profession, capable of effective work in his specialty at the level of European standards, ready for professional growth. A modern

student-future skilled worker plans his future professional activity, which requires him to have professional competence, cultural, socio-psychological, developing, and projective functions that ensure the development of the individual in the context of human-centrism. The formation of these features depends on the state of professional training of future skilled workers in rural education, where not only special professional qualifications should be provided, but also the formation of a future skilled worker - a person of culture. Essential in the process of forming the competence of future skilled workers in the context of choosing and implementing a professional career is a combination of traditional and innovative teaching methods (Arlinwibowo, Retnawati, Kartowagiran & Kassymova, 2020).

Professional competence is a fundamental and integral cognitive, social, and professional activity. By fundamentality, we mean the main or main characteristics that form a kind of framework of the human personality and provide an understanding of the world, worldview, self-determination, self-knowledge, self-esteem, and self-development of the individual. In turn, integrality acts as a quality of personality, characterized by multilevelness, complexity, connectedness of personal qualities, and characteristics that manifest themselves holistically and combine many indicators.

In this understanding, the professional competence of a person is his personal, integrative properties that form the quality, manifested in the adequacy in decision-making when performing professional tasks in various social and professional situations.

The process of formation of professional competence among rural students in the context of choosing and implementing a professional career is facilitated by industrial practice under the guidance of teachers of professionally oriented disciplines and masters of industrial training in modern production conditions. During vocational training in the rural education system, students-future skilled workers acquire professional skills, discover ways and means

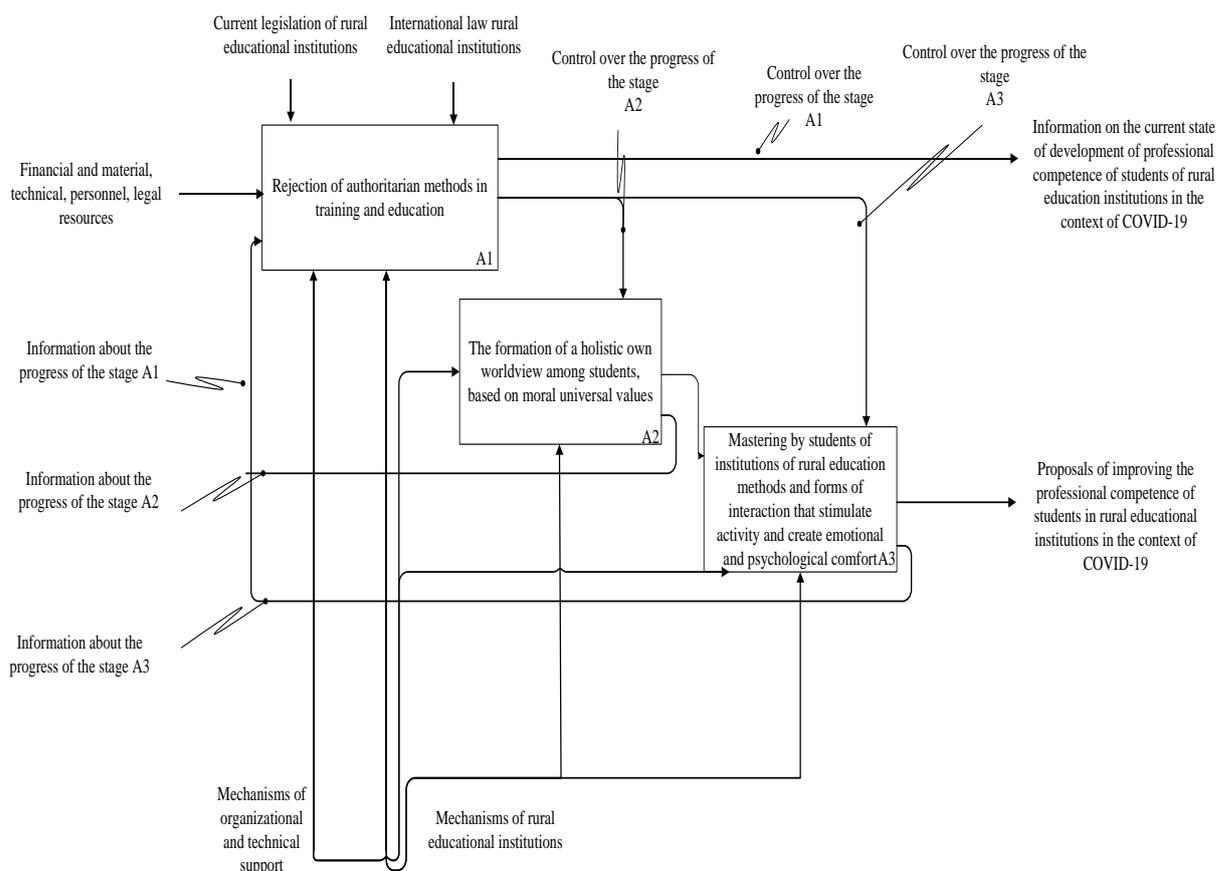
formation of knowledge, and professional skills in the future working profession in the context of a professional career.

In our opinion, to improve the process of forming professional competence among students of rural educational institutions, we used the methodology of functional modeling. The first step in the formation of this model is the creation of a tree of nodes for achieving the ultimate goal - "Improving the professional competence of students in rural educational institutions in the context of COVID-19" (Fig. 1). For convenience, we denote this goal by the symbol A0.

Source: Development by authors.

The final stage of the modeling process is the creation of a decomposition of the first level of achieving the ultimate goal A0 - "Improving the professional competence of students in rural educational institutions in the context of COVID-19" (Fig.3).

Figure 3 - The decomposition of the first level of achieving the ultimate goal A0 - "Improving the professional competence of students in rural educational institutions in the context of COVID-19".



Source: Development by authors.

All diagrams and graphs were created by appropriate vector modeling programs. The blocks were formed taking into account the data from scientific and practical sources and the involvement of experts in rural education.

Professionally significant personal properties of the formation of social and professional competence in students - future skilled workers acquire self-confidence, exactingness, tolerance, etc. The need of young people for self-determination and self-

realization, the desire for self-affirmation, and self-improvement are not only stimulated by the processes taking place in society but also require social and professional-pedagogical support in determining their place in the system of educational relations. In this context, the development of the social and professional competence of young students is becoming one of the priority tasks of the modern system of integrated lifelong rural education (Kryshtanovych, Chorna-Klymovets, Semeriak, Iryna Mordous & Zainchkivska, 2022).

The problem of developing professional competence is the subject of analysis of many areas of scientific knowledge at the same time, has different approaches to its solution, and gives rise to a wide variety of theoretical generalizations that are not always consistent with each other. Interest in the problem of socio-professional competence arose in the theory of speech communication, sociology of management, and socio-professional psychology.

Thus, it can be argued that professional competence is the internal potential of a person (knowledge, abilities, representation abilities, algorithms of actions, systems of value strategies), which then manifests itself in the competence of students of future specialists in the chosen specialty (Geng, Law & Niu, 2019).

The study of the phenomenon of professional competence in pedagogical science is just beginning. So the researchers put forward a number of provisions that emphasize the complexity of the study of this phenomenon: today there are no age models of social and professional competence; when determining socio-professional competence, such factors as the attractiveness of a person, grooming, clothing, physical skills are not taken into account; it is very difficult to diagnose professional competence; no developments are substantiating the influence of social and professional interaction on the development of professional competence (Mair, Battilana & Cardenas, 2012).

The complex issues, the solution of which is of significant theoretical and practical interest, is to find and substantiate the principles of educational work as a way to develop professional competence among students of rural educational institutions in the process of obtaining vocational education.

Discussion

Thus, four interrelated components can be distinguished in the structure of professional competence: motivational, cognitive, behavioral, and value-semantic (Azano & Biddle, 2019). The motivational component reflects the readiness, interest, desire, and need

to be guided by the behavior of generally accepted norms in society, in cooperation with colleagues, to perform professional tasks. Building the hierarchy of this terminological construction, we define "competence" as a component of a person's general and professional culture, as a willingness to carry out complex culturally appropriate activities (Helesh, Eremenko & Kryshtanovych, 2021).

It is incompetence that the procedural activity and behavioral component of the professional culture of students of future qualified specialists studying in rural areas is clearly expressed.

Based on this, the leading criterion for the quality of training is its "competence", reflecting not only the possession of a system of knowledge, skills, and abilities necessary directly for productive work and a comprehensive approach to the process and results of labor but also the development of the personal, social, intellectual potential of the employee, its professionally important qualities allow in the future, in accordance with the increasing demands of the market, to evaluate and master the new content of the professional activity. As practice shows, with the development of forms of ownership, the requirements for workers in the labor market also change. The complication of production equipment and technological processes causes an increase in demand for the level of qualification and quality of the workforce. The professional personal qualities of specialists who are in special demand in the labor market are independence, creativity, professional mobility and flexibility, the ability to solve social and professional problems, analyze various situations, mastery of cooperation techniques, the ability to manage resources (including time), interact with others people, groups and collectives, to be ready for civil responsibility for the decisions made and the consequences of their professional activities (Kryshtanovych, Kryshtanovych, Chubinska, Khromova & Sylkin, 2022).

In this regard, the main result of the education of a graduate of rural education institutions should be universal qualities and characteristics, including learning outcomes, a system of values, incentive forces for a particular type of activity, behavior, cultural acquisition, interaction with the surrounding reality (Johnson, Kuhfeld & Soland, 2021).

Modern scientific and pedagogical studies of professional competence are indicated by an increase in the effectiveness of future professional activity, an improvement in professional activity, an improvement in internal culture, and an increase in the ability to act in accordance with the norms of professional competence. The formation of the socio-professional competence of students-future qualified specialists is due to the improvement

of the process of modernization of the system for improving professional competence as a component of continuous professional integrated rural education, carrying out professional activities of students-future qualified specialists (Kryshtanovych, Kotyk, Tiurina, Kovrei & Dzhandha, 2020).

Joining the opinion of leading domestic and foreign scientists in the field of social professional competence, we believe that these professional properties provide the formation of social and professional competence in the context of a professional career.

Conclusions

Society needs rapidly adapting professionally competent young people capable of taking risks, independently choosing areas of activity, and success-oriented behavior. The main task of an educational institution in the context of the implementation of the «

new rural school» concept is not to teach, but to teach the student to learn, to master subjects and key competencies. But key competencies increase personal potential, expand employment opportunities, promote social integration, and promote active citizenship. The student does not acquire competencies in isolation, but when studying various subjects at all stages of education and in extracurricular activities. Now it is not enough to give the student knowledge. Student needs to be taught how to use them. Knowledge and skills associated with the student's value orientations form his life competencies necessary for successful self-realization in life, study, and work (Bosak, et al., 2021).

The formation of professional competence of students of rural educational institutions is one of the main tasks of an educational institution, which must create all the necessary conditions for this.

One of the most important components of high-quality training of specialists that meet the needs of the present is practical training since it contributes to a deeper perception of the chosen specialty and faster adaptation of graduates to working conditions in production in market conditions;

The system of organizational and methodological support of professional and practical training of students in the current economic conditions requires a significant reorganization to revive and increase the effectiveness of practical training of students.

Organizational and methodological support of professional and practical training of students of rural educational institutions provides for conducting targeted, systematic career

guidance work with young people throughout the entire period of study; optimization of forms of organization of training based on the activity approach; orientation of the content of educational material from the cycles of disciplines to the future professional activity of a specialist, to the development of professional motivation; ensuring the relationship between theoretical and practical training of students; systemic formation of motivational attitudes for independent work in mastering the future specialty by students.

It is also possible to identify the main factors influencing the formation of professional competence of students in rural educational institutions: professional and cognitive interest and professional orientation of the student, his value orientations; material and technical base of the educational institution; technology of training young specialists in higher educational technical institutions; professional competence of teachers; cognitive and special abilities of the student; content of practical training; forms and methods of practical training.

The research methodology involves the use of IDEFO technology. The key result of the study is the presented methodological approach to modeling and the model itself. The novelty and value of the results obtained lie in the presented model and blocks.

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Article Information

Received on July 17th, 2023

Accepted on July 20th, 2023

Published on October, 04th, 2023

Author Contributions: Sergii Chyrchuk: designed the study, prepared the plan, wrote the first draft of the manuscript and edited the final version. Alla Rudencenko: designed the study, prepared the plan, wrote the first draft of the manuscript and edited the final version. Oksana Poltavets – Guida: designed the study, prepared the plan, wrote the first draft of the manuscript and edited the final version. Volodymyr Tymenko: designed the study, prepared the plan, wrote the first draft of the manuscript and edited the final version. Volodymyr Tymenko designed the study, prepared the plan, wrote the first draft of the manuscript and edited the final version. All authors read and approved the final manuscript.

Conflict of Interest: None reported.

Article Peer Review

Double review.

Funding

No funding.

How to cite this article

APA

Chyrchuk, S., Rudencenko, A., Livshun, O., Poltavets-Guida, O., & Tymenko, V. (2023). Formation of Professional Competence Among Students of Rural Institutions of Education in the Context of COVID-19. *Rev. Bras. Educ. Camp.*, 8, 16955. <http://dx.doi.org/10.20873/uft.rbec.e16955>

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CHYRCHYK, S.; RUDENCENKO, A.; LIVSHUN, O.; POLTAVETS-GUIDA, O.; TYMENKO, V. Formation of Professional Competence Among Students of Rural Institutions of Education in the Context of COVID-19. *Rev. Bras. Educ. Camp.*, Tocantinópolis, v. 8, e16955, 2023. <http://dx.doi.org/10.20873/uft.rbec.e16955>