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ПСИХОЛОГО-ПЕДАГОГІЧНЕ ЗАБЕЗПЕЧЕННЯ УМОВ ПІДГОТОВКИ МАЙБУТНІХ УЧИТЕЛІВ ПРИРОДНИЧИХ ДИСЦИПЛІН ДО ЗДОРОВ'ЯЗБЕРЕЖУВАЛЬНОЇ ДІЯЛЬНОСТІ

Анотація. На основі здійсненого контент-аналізу наукових джерел, вивчення передового педагогічного досвіду вчителів, у статті описано психолого-педагогічні умови підготовки майбутніх учителів природничих дисциплін до здоров'язбережувальної діяльності у закладах загальної середньої освіти. Автор наголошує на пріоритетності здоров'я, здорового способу життя та здоров'язбереження, який визначається за результатами організованого цілеспрямованого педагогічного впливу й співпраці усіх суб'єктів освітньої взаємодії. Вказується, що за вказаних реалій якісна здоров'язбережувальна освіта виступає необхідною умовою підготовки майбутніх фахівців у галузі природничої освіти, вчителя, який здатний зберегти психічне й фізичне здоров'я здобувачів освіти у процесі навчання в складних умовах воєнної доби.

Обґрунтовано необхідність цілеспрямованої підготовки майбутніх учителів до організації освітнього процесу на засадах здоров'язбереження, дотримання традицій та цінностей здорового способу життя. У статті використано методи наукового аналізу й синтезу з метою вивчення досвіду діяльності ЗЗСО щодо організації здоров'язбережувальної діяльності педагогів, контент-аналіз сприяв опрацюванню великих масивів наукової літератури для узагальнення підходів до визначення психолого-педагогічних умов підготовки майбутніх педагогів до здоров'язбережувальної діяльності роботи із здобувачами шкільної освіти. Визначено психолого-педагогічні умови діяльності педагогів та основні структурні компоненти. Автор наголошує, що готовність майбутніх учителів природничих дисциплін до здійснення здоров'язбережувальної діяльності виступає важливою соціально-педагогічною проблемою, вирішення якої охоплює актуальні питання як окремої спільноти, так і суспільства загалом. Адже в сучасних умовах особливого значення надають укріпленню й збереженню здоров'я здобувачів шкільної освіти та розширенню їх орієнтації на те, щоб проводити здоровий спосіб життя.

Ключові слова: готовність, підготовка, психолого-педагогічні умови, здоров'я, дисципліни природничого циклу, майбутні вчителі природничих дисциплін.

PSYCHOLOGICAL AND PEDAGOGICAL SUPPORT FOR THE CONDITIONS OF TRAINING FUTURE NATURAL SCIENCE TEACHERS FOR HEALTH-SAVING ACTIVITIES

Abstract. Based on the content analysis of scientific sources, the study of advanced pedagogical experience of natural sciences teachers, the article describes the main psychological and pedagogical conditions for training future natural science teachers for health-saving activities in general secondary education institutions. The author emphasizes the priority of health, healthy lifestyle and health saving, which is determined by the results of organized purposeful pedagogical influence and interaction of all subjects of educational interaction. It is indicated that in these realities, high-quality healthkeeping education is a prerequisite for the training of future specialists in the field of natural science education, a teacher who is able to preserve the mental and physical health of schoolchildren in the process of learning in rather difficult conditions of wartime.

The necessity of preparing future teachers to organize the educational process on the basis of health saving, observance of traditions and values of a healthy lifestyle is substantiated. The article uses the methods of scientific analysis and synthesis to study the experience of general secondary education institutions (GSEI) in organizing health-saving activities of teachers, content analysis contributed to the processing of large amounts of scientific literature in order to summarise approaches to determining the psychological and pedagogical conditions for preparing future teachers for health-saving activities with school students. The main structural components of the process of training future teachers to implement health keeping tasks are defined, the psychological and pedagogical conditions of this type of activity are outlined. The author emphasizes that the problem of future natural sciences teachers' readiness to carry out health-saving activities is an important socio-pedagogical problem, the solution of which covers topical issues of both the individual community and society as a whole. In today's environment, it is of particular importance to strengthen and save the health of school students and to expand their



focus on leading a healthy lifestyle. After all, in modern conditions, particular importance is attached to strengthening and preserving the health of school students and expanding their orientation towards a healthy lifestyle.

Keywords: readiness, training, psychological and pedagogical conditions, health, disciplines of the natural cycle, future natural science teachers.

INTRODUCTION

The problem formulation. The general trend of humanization of science and society in the modern realities of wartime determines the priority of research related to the preservation of the health of a growing personality. The problem of health saving of school students in modern pedagogical theory and school practice occupies a leading place, which is determined by its relevance in the educational space.

One of its insufficiently researched aspects is the issue of training future natural science teachers during their studies in pedagogical higher education institutions to preserve and develop schoolchildren's health. After all, the priority of health, healthy lifestyle and health saving is determined by the results of organized purposeful pedagogical influence and interaction of all subjects of educational interaction.

The study is also relevant because the pedagogical activity of teachers of natural science subjects (teachers of geography, natural history, health basics, ecology, valeology, biology, integrated courses «Learning about Nature», «Natural Sciences», «Health, Safety and Wellbeing», etc.) differs from the activity of teachers of other subjects in its practical orientation and specifics of the organization of the educational process. These subjects become especially relevant in the context of martial law, which has a significant impact on the comprehensive development and education of students and the process of forming the mental health of a growing personality.

Analysis of recent research and publications. The importance of future teachers' understanding of the relevance of working on career growth and constant readiness for professional development and self-development is emphasised by domestic scholars O. Dubaseniuk (2011), E. Khrykov (2011), S. Litvinchuk (2002) and others. The organisation of work aimed at preserving the health of students in modern GSEI is studied by Y. Boichuk (2015), M. Honcharenko (2004), L. Khomych (1998), I. Shcherbak (2015) and others.

The theoretical and methodological bases of the problem of health of a growing personality, the formation of the foundations of a healthy lifestyle of school students, psychological and pedagogical conditions for the formation of future teachers' value attitude to health and health saving are becoming the field of research of such well-known Ukrainian scientists as N. Valko (2020), P. Dzhurynskyi (2012), N. Zhitennyyova (2019), V. Onipko (2011), K. Osadchenko (2019) and others. At the same time, it should be emphasized that the importance of the issues we have outlined is determined by the rapid transformation of educational paradigms and the dynamics of social development aimed at optimizing the processes of future teachers' self-realization in their professional activities, meeting the modern needs of both society and individuals. At the same time, the emphasis is placed on diagnosing not only losses and damage to health, but also on preserving and strengthening the healthy life potential of a growing personality.

The issues of training pedagogical personnel to solve the problems of forming, strengthening and preserving the health of schoolchildren were implemented in the research of G. Meshko (2014), V. Orzhekhovska (2006), O. Savchenko (2012). Regional approaches to solving the problem of health-saving education have become the subject of research by scientists N. Bakhmat & M. Romanyak (2024), M. Yevtukh (2002), I. Chervinska (2013).

Thus, our review of the scientific literature shows a steady interest in the problem of forming, strengthening and preserving the health of participants in the educational process and optimizing the training of future teachers to organize life-saving activities for schoolchildren and their parents.

AIM AND TASKS OF THE RESEARCH

Based on the content analysis of scientific sources, studying the advanced pedagogical experience of natural science teachers, to highlight the main psychological and pedagogical conditions for preparing future natural science teachers for health-saving activities in general secondary education institutions.

RESEARCH METHODS: analysis and synthesis to study the experience of GSEI in organizing health keeping activities of teachers, content analysis of scientific literature to summarize approaches to determining the psychological and pedagogical conditions for preparing future teachers for health-saving activities with school students, methods of summarizing the results of the study.

RESULTS OF THE RESEARCH

Presentation of the main material. The new paradigm of health saving pedagogy shifts the focus of the problem from the formation of knowledge, skills and abilities to the holistic comprehensive development of a growing personality with the formation of appropriate health keeping competences. In such realities, the role of the socio-pedagogical component of preserving schoolchildren's health in the process of education is significantly increasing and leads to the search for new ways to train teachers who are professionally ready to implement the outlined tasks during academic and extracurricular activities.

The problem of training future natural science teachers is widely reflected in the psychological and pedagogical literature, in particular in the works of domestic scientists. For example, in the works of N. Khomych, S. Shcherbyna (Khomych, 1998 & Shcherbyna, 2023) considerable attention is paid to the peculiarities of organizing the educational process, which is conditioned by the training of future natural science teachers. In this context, S. Shcherbyna states that «the transition of higher education to a new concept of training future specialists should provide for the provision of their fundamental scientific and practical training, raising the level of their professionalism, competence, and intellectual culture.



In the process of studying the natural sciences, higher education applicants should acquire fundamental natural science knowledge, understanding of the broad integration links between educational components and develop systemic thinking» (Shcherbyna, 2023).

In these realities, quality health-saving education is a prerequisite for the training of future specialists in the field of natural science education, a teacher who is able to preserve the mental and physical health of schoolchildren in the process of learning in rather difficult conditions of wartime.

In this context, we point out that there is a dependence between the level of health of school students and the level of teachers' readiness to address the problems of health preservation and promotion, which is determined by the requirements for the provision of educational services under martial law and the quality of professional training of future natural science teachers in health-saving education, the foundations of which are laid during their studies at higher education institutions (HEIs).

It is worth noting that the current state of training of future natural science teachers in most cases does not take into account the complex realities of martial law and the peculiarities of organizing the educational process and leisure time, the specifics of conducting lessons in a blended or distance format. Currently, there is no integrated system of effective professional training of teachers in health-saving education for school students in the context of hostilities. There are no effective psychological and pedagogical means of influencing a growing personality - a child or young person who lived or lives in the areas where hostilities are taking place, where sirens and alarms are heard. The above should be included in the content of the educational process aimed at forming the readiness of future teachers to organize health-saving education on the basis of health-saving pedagogy.

As noted by researchers I. Shorobura and O. Chubrei in their article «Professional Identity and Teacher's Skill» (2019), «the effectiveness of training future geography teachers for professional activity...is achieved through the creation of a set of appropriate psychological and pedagogical conditions» (Shorobura & Chubrei, 2019). Accordingly, the concept of «psychological and pedagogical conditions» means a set of internal and external circumstances that will contribute to the effectiveness of the comprehensive process of preparing future teachers for professional activity in general secondary and out-of-school education institutions.

Psychological and pedagogical research thoroughly analyses the conditions of professional training, reveals effective mechanisms of their creation and interaction in terms of influence on the comprehensive development of a future teacher and the formation of the personality of a school student. In our opinion, the interpretation of pedagogical conditions by researcher I. Filimonova is interesting, as she notes that «pedagogical conditions are a dynamic formation that changes in accordance with the content of the educational process related to the needs of society and the labour market» (Filimonova, 2018). Therefore, there is a need for periodic review and clarification of the content of pedagogical conditions as a guarantee of quality training of future teachers.

The Ukrainian pedagogical dictionary defines «conditions» as «features of real reality under which something happens or is carried out; provisions that underlie something» (Honcharenko, 2019). Under certain circumstances, conditions are the main driving force, an effective stimulus for the development of any process.

In the large explanatory dictionary of the modern Ukrainian language, the concept of «conditions» is interpreted as «necessary circumstances, features of reality that make it possible to implement, create, form something or contribute to something» (Busel, 2001).

Also, «pedagogical conditions» are defined as «circumstances on which the valuable productive pedagogical process of professional training of specialists depends and takes place, which is mediated by the activity of an individual, a group of people» (Semenova, 2007, p.243).

In this context, the considerations of Y. Babansky are significant for us, who defines that «pedagogical conditions are: such circumstances under which the components of the integral pedagogical process of professional training of specialists are mediated by the activity of an individual or a group of people; a reflection of the relationship of the pedagogical process to those factors due to which it arises and there is a need to transfer social experience to the younger generation; the need to train pedagogical personnel to implement this goal; factors influencing the selection of teaching and education technologies, its organization» (Babansky, 1984).

In the context of our scientific research, we associate the determination of the specifics of psychological and pedagogical conditions with specially created, purposefully directed pedagogical circumstances that contain a system of pedagogical means and contribute to the process of training future teachers of natural sciences, through the direction of all components (goal, objectives, principles, forms, methods and content of educational components) to the formation of their readiness to carry out health-preserving work in the process of professional activity.

The analysis of psychological and pedagogical conditions of future natural science teachers' preparation for health-saving activities allows us to assert that the humanistic mission of adhering to the rules of a healthy lifestyle and the corresponding program and content of health-saving education require new approaches to the professional training of future teachers, which allow them to form a new educational experience of independent construction of an educational strategy and restructuring of their own life philosophy from the position of subjectivity, reflexivity, and focus on preserving the health of school students.

The article proposes a set of psychological and pedagogical conditions that will contribute to the successful implementation of the functional model of training of higher education applicants in the natural sciences to organize health-saving education of schoolchildren.

In order to implement the outlined research objectives, the described psychological and pedagogical conditions must meet the following requirements:



- ensure a positive impact on the effectiveness of the educational process, which will contribute to the preparation of future natural science teachers for professional activity;
- meet the requirements of the organization and specificity of the study;
- to take into account the results of the analyzed experience of training future specialists to work in educational institutions.
- to highlight the advanced trends in the formation of educational space and health-saving requirements of sustainable development of society.

Thus, the psychological and pedagogical conditions for the preparation of future teachers of natural science disciplines for professional activity include:

1. Updating the educational content of the educational and professional program for preparing future teachers for professional activities in accordance with the requirements of the information and digital society and educational transformations.

2. The use of innovative learning formats (blended learning, distance learning), interactive methods and innovative technologies in the process of training future specialists.

3. Formation of a system of value orientations, norms and rules of behaviour in future teachers in accordance with the chosen type of professional activity.

4. Continuing work on the formation of critical thinking and the basics of media education and media literacy.

5. Improvement of the practical component of training by extending the terms of various types of practice (propaedeutic, educational, introductory, local history, pedagogical production, etc.), expanding practice bases, optimizing the tasks of the cross-cutting practice program.

6. The use of health-saving technologies in the educational process in order to increase the effectiveness of their impact on the formation, strengthening and preservation of the health of school students as an integral complex of conceptually interrelated tasks, content, forms, methods and techniques of teaching aimed at the comprehensive development of schoolchildren through the organization and observance of healthy lifestyle rules.

The proposed list of psychological and pedagogical conditions will contribute to the effective implementation of the functional model of training of higher education applicants in the natural sciences to organize health-saving education of schoolchildren and will form students' readiness to optimise health-saving education of schoolchildren.

The analysis of educational and professional programs in natural sciences implemented by modern HEI suggests that health saving of young people should be a component of professional training, which should ensure the development of the ability to solve practical problems related to health.

The program includes a list of educational components, the content of which includes topics on the formation of a healthy lifestyle and health saving for students of general secondary education institutions (normative disciplines, which include general training cycles and a vocational training cycle. Vocational training includes disciplines of the theoretical block and practical training; the second section is elective educational components or components of free choice of the student. Among these educational components, we can see the content of health-saving topics and problems of human life and health saving.

In this context, it is worth paying attention to the use of a propaedeutic program to update the content of higher education in the study of psychological and pedagogical disciplines, specialized disciplines, and to saturate the content of the integrative block of elective educational components, which includes disciplines related to healthy lifestyles and health saving. A special emphasis is placed on ensuring the continuity of all types of internships that will develop the practical component of future teachers' training.

All professional training programs for future natural science teachers contain great potential opportunities that ensure the formation of content and practical blocks of the structural and functional model of the process of training future teachers to implement health-saving activities in general secondary education institutions (GSEI).

The process of training future teachers is presented in the form of a functional and structural model, which includes target, subject, content, functional, organisational and evaluation components (blocks).

The problem of future natural science teachers' readiness to carry out health-saving activities is an important socio-pedagogical problem, the solution of which covers the actual problems of both a separate community and society as a whole. After all, in modern conditions, the issues of strengthening and preserving the health of school students and expanding their orientation towards a healthy lifestyle are of particular importance.

Based on the analysis of the practical activities of the GSEI, we understand that the targeted health-saving work of natural science teachers with school students requires serious thorough training, which should begin during their studies in higher education institutions. The considerations of well-known scientists (Andrushchenko & Oleksenko, 2007; Yevtukh, 2002) and are in line with this. The researchers emphasise that «professional training is a process of accumulating a fund of knowledge, skills and abilities in a particular field of activity, a process of forming the readiness of a future teacher for professional activity with secondary school students» (Chobitko, 2006). Accordingly, the educational process of vocational teacher pedagogical education should be organized in such a way as to ensure that students not only know various aspects of health saving, but also develop their ability to independently design and apply the health-saving function of natural sciences in the educational process of GSEI.

After all, according to B. Shyian, «in order for a teacher to become a master in solving pedagogical problems, he needs to purposefully develop his or her general pedagogical and special (taking into account the specifics of his profession) abilities. A professional teacher should have knowledge of the theory of teaching and upbringing, the subjects of the



medical and biological cycle, the theory and methods of teaching his subject, the methods of using technical means of education, computer technologies, etc.» (Shyian, 2001, p. 372).

Every year, health saving education becomes a prerequisite for the training of a modern specialist in the field of education. Since a teacher is a person, a subject of the educational process, on whom parents, colleagues, school, region, and the whole country place special hopes in terms of the ability to preserve the health of students in the process of their education and organized leisure.

For teachers of natural science disciplines, health saving is a component of special professional training, which should contribute to the development of skills to solve vital practical problems that, under martial law, are related not only to maintaining good health of schoolchildren, but also to protecting them from various problems and challenges to preserve the health and life of the individual as the highest professional and pedagogical value.

According to researcher I. Chervinska, «The period associated with educational activities in higher education institutions is special in the formation of professional and pedagogical values. This is the time when adequate professional self-esteem and the level of aspirations are formed - a transition to a new stage of cognitive and personal development, significant social motives and aspirations appear. The peculiarity of this stage is the outlining of a range of personal values, as well as their emotional experience, awareness and consolidation in activity. Modern practice proves that the lack of ideas about the future prospects of the future profession reduces the activity of the individual, slows down the process of forming professional and pedagogical values, makes the person disoriented in their activities» (Chervinska, 2013).

Thus, obtaining health-saving education allows solving several important tasks related to the preservation of schoolchildren's health, which is the basis for ensuring the success of life.

Therefore, in the context of our study, we understand the health-saving activity of future natural science teachers as a specially organized and controlled type of pedagogical activity of an educational institution, the main purpose of which is to preserve and develop the health of participants in the educational process, aimed at implementing such forms, methods and means of teaching that, by improving the educational process, contribute to the preservation and promotion of schoolchildren's health. This process is based on the use of the latest pedagogical health-saving technologies and includes a system of educational and upbringing activities that guide schoolchildren to a healthy lifestyle by incorporating them into the life practices of a growing personality.

Based on the content analysis of psychological and pedagogical literature (Shorobura & Chubrei, 2019), the main basic principles of health-saving activities include:

- Creating an emotionally stable educational space of an educational institution that will protect schoolchildren from negative emotions and stressful situations.
- Knowledge of the psychological, physiological, age and social peculiarities of students' development.
- Applying an individual approach to each student in the educational process, in accordance with their actual state of physical health.
- Providing situations of success, problematic situations, mutual learning and self-analysis during the educational process and leisure activities.
- Formation of positive motivation through involvement in simulation techniques, methods of organizing a healthy lifestyle for schoolchildren, development of effective mechanisms for ensuring a health-saving environment.
- Selection of health keeping technologies both during school lessons and in the organization of leisure activities for school students.

The study of psychological and pedagogical conditions that contribute to the formation of future teachers' readiness for health saving of GSEI students involves the formation of certain features and professional qualities of the future teacher's personality, the totality of which is characterized by the concept of «readiness».

The analysis of scientific literature and research shows the lack of a common understanding of the interpretation of the issue of «teacher's readiness» by scientists. In particular, the concept of «readiness» is considered as: an attitude, as an ability, as personal education, as a quality or property of a person, as an emotional state of a person and as a pedagogical orientation of the teacher's personality education, which includes a system of interrelated structural components.

In general, readiness is «an integral, professionally significant quality of a teacher's personality, which includes a system of interrelated structural components that characterize both personal (motivation and interests) and procedural (professional knowledge and competences) aspects» (Starosta, 2019).

Thus, in the context of the studies we analyzed, «the future teacher's readiness to carry out health-saving activities is an integrative characteristic of personality qualities, which includes a holistic systemic organization of certain types of work and a complex multi-level structure, which is characterized by the interaction and interpenetration of physical, cognitive-motivational, practical (operational-activity) and reflective components, the degree of formation of which determines the health-saving nature and logic of pedagogical activity, the direction of professional growth of future teachers of natural sciences in GSEI» (Gavrish, 2005).

Thus, the components of a natural science teacher's readiness are as follows:

Motivational component of future natural science teacher's readiness for health-saving activities, which includes:

- Understanding of the relevance of the future teacher's health-saving activities both during lessons and during organized leisure time of school students.
- Motivation to master the theoretical and practical components of health-saving education in GSEI and improve health-saving competence.



- Motivational focus on the application of effective mechanisms of healthy lifestyle aimed at organizing effective promotion of healthy lifestyle, desire to pass them on to schoolchildren in the process of pedagogical activity.
- A creative approach to the use of rational methods of health-saving education, integration of advanced domestic and foreign practices (innovative methods, forms, technologies and teaching aids) into the educational process.
- Formation of value orientations and attitudes towards the basics of health saving in school students as an effective condition for improving the effectiveness of pedagogical activities.
- Development of interest in educational activities aimed at forming a healthy lifestyle, personal self-development and professional growth.

Physical component of the future teacher's readiness is determined by the state of physical fitness, level of physical development and professional performance. In particular: striving for physical development and self-improvement, physical education and resilience.

Cognitive component of readiness includes:

Mastery of theoretical and methodological knowledge of basic concepts and methodology for leading a healthy lifestyle, personal health, physical development.

Knowledge of the leading approaches to the education of a healthy personality, mastery of educational technologies aimed at intensifying the process of preserving the health of a growing personality.

The practice-oriented component of the future science natural teacher's readiness to organize and implement health-promoting activities involves:

- Mastering innovative personality-oriented methods of organizing practical activities.
- Formation of health-saving competences through their practical application and testing in the educational process of a modern educational institution.

The reflective component describes:

- Cognitive processes and the ability to analyze one's own pedagogical activity.
- Conducting periodic health diagnostics, studying school records, medical records of students, if necessary - health groups, etc.

It should be noted that all the components we have analyzed are interrelated. However, the motivational component is the basic one. It encourages the formation of all other components.

CONCLUSIONS AND PROSPECTS OF FURTHER RESEARCH

Psychological and pedagogical conditions are significant circumstances that contribute to the formation of professional competence and experience of pedagogical activity of a future specialist in the natural science education field of knowledge. However, it is worth noting that even their successful implementation does not guarantee the achievement of high professional results, as they only motivate and facilitate the process of professional formation of future teachers. Psychological and pedagogical conditions as components of a holistic pedagogical system of training specialists in the relevant educational field highlight the possibilities of the educational process, reveal the specifics of the educational environment, and have a certain impact on the personal development of a future teacher of natural science disciplines. In general, they support and ensure the effective functioning and development of the entire system of vocational education.

Our analysis of the psychological and pedagogical conditions of training future teachers of natural science disciplines will contribute to the analysis of the peculiarities of the educational process in the realities of martial law and optimization of the process of professional training for health-saving activities in modern general secondary education institutions. Further scientific research should be directed to the problem of preserving and improving the health of students as a subject of scientific discourse.

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