ЗМІСТ ОСВІТИ

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MODEL OF THE METHODOLOGICAL SYSTEM FOR PROFESSIONAL TRAINING OF CHEFS TO WORK IN EXTREME CONDITIONS

Purpose. The purpose of the study is to scientifically substantiate and model a methodological system of professional training of chefs to work in extreme working conditions based on the integration of systemic, activity, competence, problem-based, resource and axiological approaches. The leading concept of the study is to organize professional training of chefs to work in extreme conditions through the formation of professional competence in solving a system of problem production situations classified by structural elements of activity.

Methods. The methodological basis is a combination of theoretical and applied research methods: system analysis - to determine the structure and interrelationships of the components of the model; modeling - to create a holistic methodological system; functional analysis - to describe the mechanisms for implementing each component; and structural-functional modeling - for the development of activity and thinking models for solving problematic production situations. The complex of applied methods ensured the integrity, consistency and practical orientation of the developed model.

Results. A model of the methodological system for professional training of chefs to work in extreme conditions has been developed. It includes interrelated components: motivational-target, content, process-activity and control-regulation. The scientific novelty is the proposed problem-based training method, the implementation of which is based on an activity (structural-functional) and thinking model, which combines technical patterns of system functioning with cognitive mechanisms of professional thinking. This approach ensures consistency between the technical logic of production processes and the intellectual activity of the cook when solving problematic production situations.

Conclusions. The proposed model of the methodological system is a theoretically and methodologically sound basis for training chefs to work in extreme working conditions. Its implementation ensures the integration of professional knowledge, practical skills and value orientations, forms adaptability, flexibility of thinking and the ability to self-regulate when solving problematic production situations.

KEY WORDS: *methodological system; professional training; problem-based training; extreme conditions; professional thinking.*

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Introduction

The professional activity of a chef is carried out in restaurant establishments, at public catering enterprises, in production or field conditions, where various methods of cooking are used [10]. A qualified specialist not only reproduces traditional technologies, but also improves cooking methods, creates new recipes and organizes the work of the kitchen based on innovative principles.

However, modern reality significantly complicates the professional activity of chefs. War events, natural disasters, man-made accidents and humanitarian crises create situations where cooking takes place in conditions of resource scarcity, lack of time, increased risk and constant threat to life. These factors transform the content and nature of the chef's work, giving it an extreme nature and requiring new approaches to professional training [7].

According to the hygienic classification, working conditions are divided into optimal, permissible, harmful and dangerous (extreme) [3]. It is the extreme conditions, determined by the levels of production factors that can cause acute injuries or threaten the life of the employee even during one work shift, are of particular interest in the context of the study of chef training.

Despite regulatory requirements and safety standards, the cook's activities in real conditions often come close to extreme due to high labor intensity, resource scarcity, time limitations, environmental instability and increased responsibility for the result. Such factors form the need for special professional training, which takes into account not only technological, but also psychological, resource and axiological aspects of activity.

In this context, a scientific and practical problem arises - the development of a methodological system of professional training of cooks, capable of ensuring their readiness to work in extreme working conditions.

The effectiveness of the use of problem-based training and situational modeling in forming the ability of specialists to solve complex professional tasks is confirmed by the results of modern pedagogical research by Ukrainian and foreign scientists, in particular V. Pavlenko [8], T. Pyatnichuk [9], R. Costa, S. Hirata [2], A. Koçoğlu, S. Kanadlı [4] and others. Scientists note that involving students in the analysis of real or simulated situations stimulates the development of analytical and adaptive thinking, increases the ability to act effectively in conditions of uncertainty and change.

The effectiveness of the use of structural-functional modeling in the development of the content of training technologies is reflected in the works of M. Lazarev [6]. Overcoming the challenges of the modern world, according to Y. Wu, X. Lu and C. Lin [11], is associated with the development of cognitive abilities of specialists that go beyond the narrow disciplinary specialization. In their research, the authors prove the need to form integrative thinking as a key higher-order competence, which involves the ability to analytically evaluate and creatively synthesize diverse ideas, information and approaches to achieve a holistic and innovative understanding of the problem.

The purpose of the study is the scientific substantiation and modeling of a methodological system for professional training of cooks for work in extreme working conditions based on the use of problem-based training, the formation of a system of problem production situations, the use of mechanisms of structural-functional modeling and integrative thinking to solve them.

Methodology

The object of the study is the process of professional training of cooks for work in extreme working conditions, and the subject is a methodological system aimed at the formation of professional competence by gradually solving a system of problem production situations, built on the elements of the structure of professional activity.

The methodological basis is a combination of theoretical and applied research methods aimed at creating a holistic model of professional training, which reflects the system-technological logic of the specialist's activity. The use of system analysis made it possible to determine the structure, functions and relationships between the components of the methodological system, as well as to identify their consistency with the

key elements of the professional activity of a cook. The modeling method was used to build a methodological system as an open dynamic structure, within which the motivational-target, content, process-activity and control-regulatory components interact. Functional analysis was used to reveal the mechanisms of implementation of each component of the model and determine their role in the formation of professional readiness of cooks. Structural-functional modeling provided the development of activity and thinking models for solving problematic production situations, which reproduce the sequence of actions of the cook in the activity and cognitive aspects, from the analysis of conditions to the evaluation of results. The set of applied methods ensured the integrity, consistency and practical orientation of the research.

Research results

The methodological basis of the methodological system of professional training of cooks for work in extreme conditions is a set of approaches: systemic, activity, competence, problem-based, resource and axiological [5]. Their combination ensures the integrity, practical orientation and adaptability of the educational process, as well as consistency between the technological logic of production and the cognitive logic of professional thinking.

The system approach allowed us to consider professional training as an open dynamic system in which the goals, content, methods, forms and results of training are interconnected. The activity approach made it possible to model the professional activity of a cook in extreme conditions through a system of problematic production situations built on the structural elements of activity: goal, means, subject, object, conditions, technology, product and result. The competency approach determined the structure of professional competencies necessary for solving problematic production situations, and the problem-based approach ensured the construction of a system of problematic situations that reproduce the real conditions of the cook's activity in extreme working conditions. The resource and axiological approaches combine the development of the internal resources of the individual with the formation of humanistic guidelines and professional responsibility.

The professional training of cooks is considered as a holistic system that includes motivational-target, content, process-activity and control-regulatory components. Their coordinated interaction ensures the implementation of the leading concept of the study - the formation of professional competence in solving a system of problematic production situations in extreme working conditions. The model of the methodological system of professional training of cooks for work in extreme conditions is shown in Fig. 1.

The first structural element of the methodological system of professional training of cooks for work in extreme conditions is the motivational and goal-oriented component, which covers the general goal and specific goals of professional training. The general goal is to form professional competence in solving a system of problematic production situations. Specific goals are aimed at developing the ability of future cooks to act effectively in problematic production situations, classified by structural elements of activity.

The specified system covers problematic situations related to:

– the purpose of the activity, which involves the formation of an adapted food purpose in the conditions of environmental changes and consumer needs;

– the subject of activity, which reflects the ability to use food ingredients of various types, in particular alternative, canned and wild;

– the subject of activity, which is characterized by the ability to mobilize personal resources - motivational, resources of resilience and self-regulation;

– the means of activity, which involve the use of field kitchens and improvised devices, including equipment and inventory in the process of cooking;

– with the conditions of activity, which require the ability to organize meals under the influence of adverse physical, chemical and biological environmental factors;

– with the technology of activity, which involves the adaptation of technological processes of cooking to available resources, specific conditions, for the food quality requirements and consumer needs;

– with the product and result of activity,

which determine the ability of the cook to assess the quality of finished dishes in conditions of limited control possibilities.

All other components of the methodological system are consistent with the motivational and goal-oriented component and ensure the implementation of the specified goals, forming a holistic logic of professional training focused on developing the ability of future cooks to effectively act in extreme working conditions.

The content component of the methodological system is represented by the model of the content of professional training of cooks for work in extreme conditions. This model includes two interrelated components. The first is formed by transforming the professional activity of a cook in extreme conditions into a system of production situations that arise within each structural elements of activity. The second component reflects the mechanism for solving certain groups of production situations integrated into the general logic of professional activity. Such content of professional training forms the basis of problem-based training in disciplines of professional theoretical and professional practical training aimed at forming the ability of specialists to effectively act in extreme working conditions.

The sequence of content presentation in the structure of the educational process can be carried out according to two models. Each of them determines the method of integrating the system of problematic production situations of professional activity in extreme conditions into the content of educational disciplines. The first model involves the inclusion of this content into the discipline as a separate block on solving problematic production situations, which directly corresponds to a certain structural element of activity and is consistent with the content of the corresponding educational discipline (Fig. 2). This approach creates conditions for the consistent organization of the educational process, when problem-oriented learning is integrated into the content of the disciplines gradually, taking into account the logic of their study, defined by the curriculum.

The second model (Fig. 3) involves building the training content as a single integrated system aimed at forming the ability of students to solve problematic production situations. It can be implemented in the format of an optional course or an elective course. Within the framework of this model, problem-oriented learning systematically covers the entire spectrum of problem situations, ensuring the gradual complication of training tasks – from basic to complex.

Thus, the study presents two models of presentation of the content of professional training of cooks for work in extreme conditions in the structure of the educational process (Fig. 2, Fig. 3).

At the next stage of the study, we will describe the procedural and activity component of the model of the methodological system of professional training of cooks for work in extreme conditions. This component includes a training method that reflects educational activities for mastering the methodology for solving a system of problematic production situations, as well as appropriate didactic tools and forms of organizing the educational process.

Since any method is a system of conscious sequential actions of a person aimed at achieving a result that meets a specific goal [1], the training method implemented in the developed methodological system should reflect the algorithm for solving a problematic production situation as a whole unit of content that models the real professional activity of a cook.

In this regard, there is a need to develop an algorithm for quasi-professional learning and cognitive activity of students aimed at solving a problematic production situation. It is this algorithm that should define the sequence of professionally approximate actions implemented in the educational process and act as a method of training future cooks to solve a system of production tasks characteristic of their activities in wartime conditions.

To organize learning and cognitive activity, which in structure, logic and functional load corresponds to the real professional activity of a cook, two key ideas for building a method have been identified.

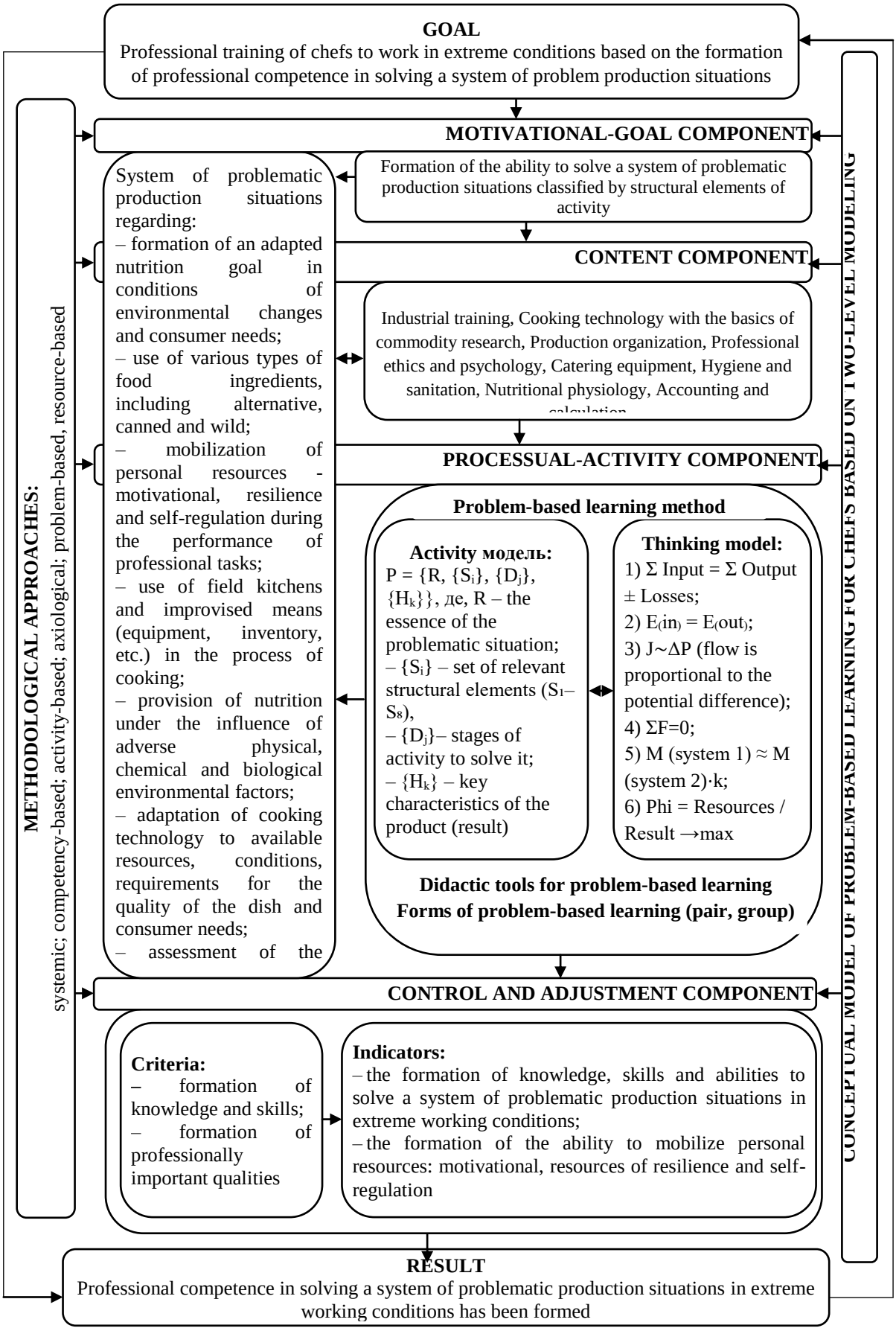

Fig. 1 – Model of a methodological system for professional training of cooks for work in extreme conditions

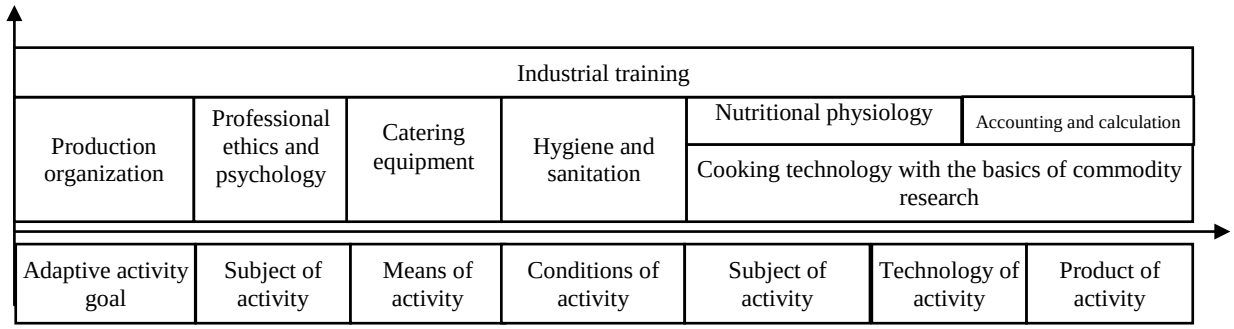

Fig. 2 – Variant of the sequence of content presentation in the structure of the educational process

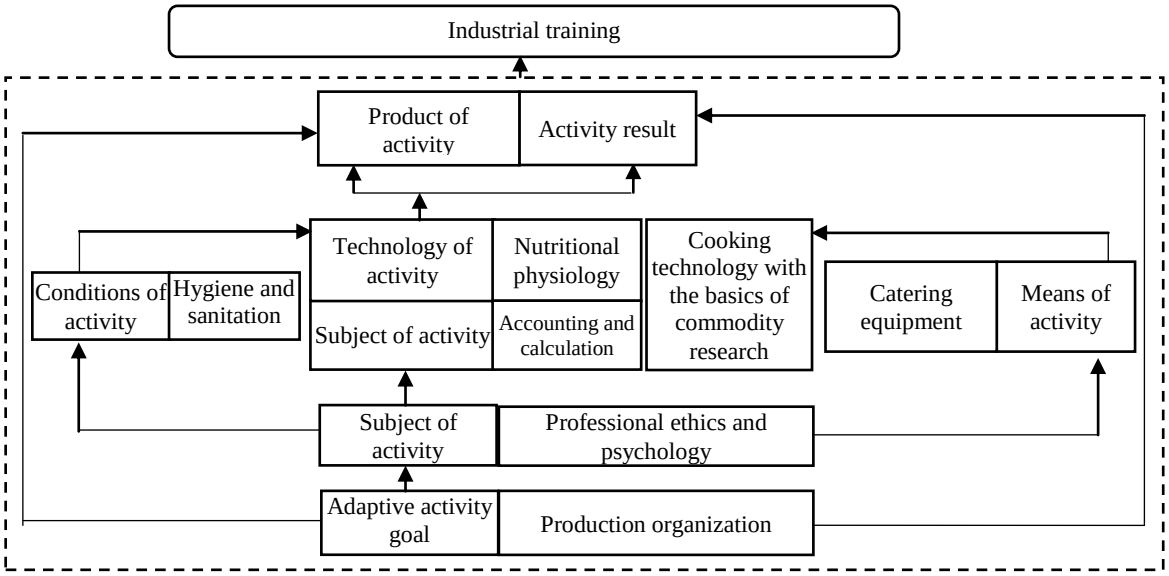

Fig. 3 – Variant of the sequence of presentation of content in the structure of the educational process

The first idea is that the implementation of problem-based training requires a clear strategy of activity, which includes the formulation and clarification of the structure of the problem, the organization of activities to solve it and the subsequent assessment of the effectiveness and feasibility of the actions taken. This strategy is implemented in three interrelated stages: formulation and analysis of the problem (R–S), activities to solve it (D) and evaluation of the results (H). The model of educational activity for solving a problem situation is shown in Fig. 3.

Let us reveal the content of each of the stages of solving a problematic situation according to the model (Fig. 4.). The first stage involves formulating the problem (R) and clarifying its structure (S). The teacher and students define the essence of the problem, its causes and the extent of influence, and also structure the situation according to the main elements of the activity: goal, means, subject, object, conditions, methods, product and result. This approach makes it possible to identify in which structural component the violation occurred (for example, technology, resources or conditions) and where it is necessary to concentrate efforts for further resolution.

The second stage is the implementation of the activity for solving the problem (D). It includes six interrelated steps: motivation ($D_{m.}$), formulation of goals ($D_{g.}$), development of an indicative basis for action ($D_{ba.}$), implementation of activity ($D_{ia.}$), control of results ($D_{cr.}$) and coordination and correction of actions ($D_{cca.}$). At this stage, students are actively involved in searching, evaluating and implementing alternative solutions, predicting

the consequences of their actions, analyzing resources, risks and limitations.

The teacher supports this process through consulting, providing feedback and adjusting the action strategy. The third stage is assessing the effectiveness and feasibility of actions (H). The analysis of the results is carried out according to five criteria: goal achievement (H_1), safety (H_2), technological feasibility (H_3), rational use of resources (H_4) and acceptability for the consumer (H_5). Such an assessment allows not only to establish the level of success in completing the task, but also contributes to the development of reflection, self-analysis and improvement of professional actions of students.

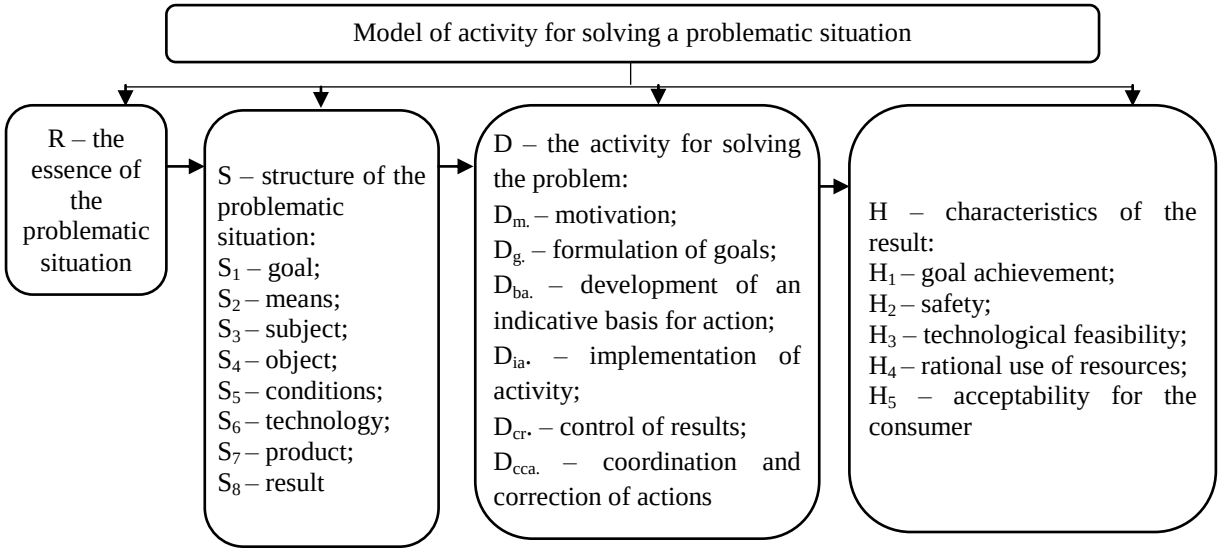

Fig. 4 – Model of activity for solving a problematic situation

Thus, the method of solving a problematic situation combines analytical, activity and evaluation components, creating a closed cycle of solving a problematic production situation.

The second idea is related to the thinking strategy, which is considered as the transfer of universal technical and natural laws to thought processes that manifest themselves in the functioning of technical and social systems. In this study, this concept is defined as a system-technological approach that integrates the laws of the functioning of technical systems with cognitive mechanisms of professional thinking. The basis of the system-technological approach is the following laws and principles: the law of conservation of mass, which reflects the constancy of resources and correlates with mental actions aimed at balancing components and results in the decision-making process; the law of conservation of energy, which is designed for the rational use of internal and external efforts in the process of activity, optimization of intellectual and physical resources; the law of mass and energy transfer and the principle of driving force, which form in students an understanding of the dynamics of interactions, cause-and-effect relationships and mechanisms of influence during the implementation of professional actions; the law of large-scale transition and modeling, which contributes to the transfer of knowledge obtained in educational (model) conditions to real production situations, ensuring adequacy and flexibility of thinking; the principle of process optimization, which determines the ability to find the most effective ways to solve problems, minimizing loss of time, resources and risks.

Thus, the use of a system-technological approach ensures unity between material processes, regulated by the laws of technology, and the intellectual actions of the cook, which determine the effectiveness and rationality of decisions made in professional activities.

To ensure didactic support for the educational and cognitive activities of students at each stage of the problem-based learning method aimed at solving problematic production situations in the professional activity of a cook, it is necessary to use didactic tools purposefully. Such tools are implemented in the form of sequential steps of pedagogical support, which is carried out by the teacher through a system of mental

prompts. They can be of different nature: motivational (aimed at arousing interest and internal need to find a solution), indicative (helps to structure the search and identify possible courses of action) and control (provides reflection, checking the correctness and appropriateness of the actions taken).

The control and regulatory component of the model reflects the diagnostics of the effectiveness of the methodological system according to the criteria of the formation of professional knowledge, skills and abilities for solving problematic production situations in extreme working conditions, as well as the criterion of the formation of professionally important qualities of a cook that ensure the effective performance of tasks in variable or dangerous conditions. The corresponding indicators are: the level of formation of knowledge, skills and abilities in solving problematic production situations and the ability to mobilize personal resources - motivational, resources of hardiness and self-regulation - during the performance of professional tasks.

The described components of the developed model of the methodological system of professional training of cooks for work in extreme conditions provide the creation of the necessary prerequisites for the formation of the ability of future specialists to solve problematic production situations.

Conclusions

The study made it possible to scientifically substantiate and model the methodological system of professional training of cooks for work in extreme working conditions. As a result, it has been found that effective training of specialists in this field is possible only under the condition of integration of systemic, activity, competence, problem-based, resource and axiological approaches, which ensure the integrity, adaptability and practical orientation of the educational process. The created model of the methodological system includes four interrelated components – motivational and goal – oriented, content-based, process-activity and control – regulatory – which in their interaction form the logic of professional training focused on the development of competence in solving a system of problematic production situations. The developed methodological system creates conditions for the integration of professional knowledge, practical skills and value orientations in the training of specialists, forms the ability to analytical and adaptive thinking, self-regulation and optimization of actions, ensuring the readiness of cooks to act effectively in conditions of uncertainty, risk and limited resources.

Conflict of interest

The authors declare that there is no conflict of interest regarding the publication of this manuscript. Furthermore, the authors has fully adhered to ethical standards, including those related to plagiarism, data falsification, and duplicate publication.

Authors Contribution: all authors have contributed equally to this work.

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МОДЕЛЬ МЕТОДИЧНОЇ СИСТЕМИ ПРОФЕСІЙНОЇ ПІДГОТОВКИ КУХАРІВ ДО РОБОТИ В ЕКСТРЕМАЛЬНИХ УМОВАХ

Мета. Метою дослідження є наукове обґрунтування та моделювання методичної системи професійної підготовки кухарів до роботи в екстремальних умовах праці на основі інтеграції системного, діяльнісного, компетентнісного, проблемного, ресурсного та аксіологічного підходів. Провідна концепція дослідження полягає в організації професійної підготовки кухарів до роботи в екстремальних умовах через формування професійної компетентності щодо вирішення системи проблемних виробничих ситуацій, класифікованих за структурними елементами діяльності.

Методи. Методологічну основу становить поєднання теоретичних і прикладних методів дослідження: системного аналізу – для визначення структури та взаємозв'язків компонентів моделі; моделювання – для створення цілісної методичної системи; функціонального аналізу – для опису механізмів реалізації кожного компонента; а також структурно-функціонального моделювання – для розроблення діяльнісної та мисленнєвої моделей вирішення проблемних виробничих ситуацій. Комплекс застосованих методів забезпечив цілісність, узгодженість і практичну спрямованість розробленої моделі.

Результати. Розроблено модель методичної системи професійної підготовки кухарів до роботи в екстремальних умовах, яка охоплює взаємопов'язані компоненти: мотиваційно-цільовий, змістовий, процесуально-діяльнісний і контрольно-регулювальний. Наукову новизну становить запропонований метод проблемного навчання, реалізація якого ґрунтується на діяльнісній (структурно-функціональній)

та мисленнєвій моделі, що поєднує технічні закономірності функціонування систем із когнітивними механізмами професійного мислення. Такий підхід забезпечує узгодженість між технічною логікою виробничих процесів і інтелектуальною діяльністю кухаря під час вирішення проблемних виробничих ситуацій.

Висновки. Запропонована модель методичної системи є теоретично й методично обґрунтованою основою підготовки кухарів до діяльності в екстремальних умовах праці. Її реалізація забезпечує інтеграцію професійних знань, практичних умінь і ціннісних орієнтацій, формує адаптивність, гнучкість мислення та здатність до саморегуляції під час вирішення проблемних виробничих ситуацій.

КЛЮЧОВІ СЛОВА: *методична система; професійна підготовка; проблемне навчання; екстремальні умови; професійне мислення.*

Конфлікт інтересів

Автори заявляють, що конфлікту інтересів щодо публікації цього рукопису немає. Крім того, автори повністю дотримувалися етичних норм, включаючи плагіат, фальсифікацію даних та подвійну публікацію.

Внесок авторів: усі автори зробили однаковий внесок у цю роботу.

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