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Methodological approaches to preparing future geography teachers for continuous professional development

Abstract. In a world where rapid changes are taking place in society, economy, and technology, it is necessary for future geography teachers to be oriented towards the latest trends and be ready to adapt to them through continuous professional development. Accordingly, the scientific article aimed to determine the essence and characteristics of the main methodological approaches to preparing future geography teachers in the context of their continuous professional development. The study employed various research methods, including theoretical analysis of psychological-pedagogical sources, description, synthesis, systematization, abstraction, comparison, and generalization of data. These methods helped to identify the main aspects of methodological approaches to preparing future geography teachers for continuous professional development. They are also used to create a teaching model that contributes to the continuous development of participants in the educational process. The research reveals methodological approaches to preparing future geography teachers for continuous professional development. The conceptual methodology and research objectives, features of methodological approaches to preparing future geography teachers in conditions of continuous professional development, are determined. The article reveals the essence of individualization in the preparation of future geography teachers for continuous professional development. The specifics of the main approaches (systemic, personal, synergistic, activity-based, axiological, and competency-based approaches) in preparing future geography teachers for continuous professional development are characterized. Emphasis is placed on the importance of developing readiness of future geography teachers for continuous professional development in professional training in accordance with each methodological approach. Attention is focused on the importance of transitioning from classical models of educational preparation of future geography teachers to systems that prepare professionals capable of working in new circumstances and ready for lifelong learning, upbringing, and continuous professional growth. The practical value of the research lies in highlighting important methodological approaches and innovative methodologies that can be used to adapt approaches to organizing the educational process for the specialty 014.07 Secondary Education (Geography) and other specialties for preparing future teachers in the face of modern challenges in education

Keywords: theory and methodology of professional education; pedagogical system; self-education; self-improvement; methodological approach; systemic approach; educational-professional program

INTRODUCTION

The main challenges of modernizing the higher education system in Ukraine include establishing the essence, methodology, and perspectives of continuous professional growth and qualification enhancement of contemporary teachers as competitive specialists, adapted to modern social and cultural conditions, capable of self-improvement

and lifelong self-development. Researching the methodological aspects of teacher training is crucial for adapting the educational process to contemporary challenges. Changes in socio-economic, technological, and cultural spheres define new requirements for geography teachers. Changing teaching approaches, implementing innovations, and

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using modern teaching methods require geography teachers to continuously enhance their professional competencies, and examining aspects of continuous professional development in the context of geographical education becomes a relevant issue in modern higher professional education.

The importance of professional training for future geography teachers for continuous professional development and the necessity of improving organizational, pedagogical, and methodological conditions in the context of modern requirements for higher education students and teachers have significantly increased. Reforming school geographical education to meet the requirements of the New Ukrainian School (NUS) demands updating not only content but also teaching methods, forms, and tools aimed at the comprehensive development of students' independence and research activity, strengthening the visuality of education, and more. The issue of a modern teacher's readiness for continuous professional development in the context of the rapid progress of scientific-informational and telecommunication environments is extremely important and one of the most discussed in modern national and international psychological-pedagogical research. This requires teachers not only to update their knowledge and skills but also to develop flexibility and adaptability to rapidly changing conditions, which is crucial for effective teaching in the modern world. The study of a significant number of scientific works confirms that the issue of preparing students for continuous professional growth attracts the attention of numerous researchers. This indicates the importance of this problem in the context of modern education and professional development. Specifically, this relates to the necessity of developing effective teaching methods and approaches that would contribute to forming students' readiness for continuous improvement of their professional skills and knowledge. This is explored in the research by L.P. Vishnikina (2018), dedicated to the problems of professional training of future teachers, including geography, and the formation of individual elements of readiness for professional activity.

In the scientific work by B. Pasang & S. Najib (2022), the key elements and characteristics of competency-based tasks applied in the preparation process of future geography teachers in higher education institutions are examined. The article by V. Nosachenko (2022) defines the place of professional training of future geography teachers and theoretically substantiates the pedagogical system of preparing future geography teachers for continuous professional development. O. Chubrei's scientific work (2020) is devoted to analyzing the peculiarities of professional training of future geography teachers in foreign countries and identifying promising concepts for implementation in Ukraine amid educational transformation. V. Frytsiuk's scientific work (2017) identifies and discusses the formation of a sustainable desire for knowledge in students, providing students with access to necessary resources, innovative direction of educational content, forms, methods, and means of teaching for preparing future geography

teachers for continuous professional development. In the article by V. Pasternatskyi *et al.* (2023), the importance of self-education of teachers in the pedagogical context is defined and justified, the conditions for the effectiveness of teachers' self-education in the modern education system are highlighted, and the structure of teachers' readiness for self-education in postmodern society is presented. I. Prokopenko's scientific work (2021) focuses on the system of preparing future teachers to promote interaction with students of secondary educational institutions, particularly through the development of effective teaching methods and approaches that would contribute to forming students' readiness for continuous improvement of their professional skills and knowledge.

The question of how to cultivate the readiness of future geography teachers for continuous professional development in higher education institutions requires in-depth theoretical analysis and scientific consideration. This includes studying contemporary pedagogical theories, teaching methods, and professional development strategies. Moreover, it is necessary to consider the possibility of applying methodological approaches in the process of preparing future geography teachers, which can contribute to effectively shaping their readiness for continuous improvement of their professional competencies. Therefore, the main aim of this work was to uncover key aspects, analyze, and systematize methodological approaches used during the professional training of geography teachers.

MATERIALS AND METHODS

The research methods utilized encompassed theoretical analysis of psychological and pedagogical research sources, description, synthesis, systematization, abstraction, comparison, and generalization of analyzed data, as well as methods of pedagogical modeling and forecasting. Theoretical analysis of psychological and pedagogical research sources was conducted through the study of scientific and pedagogical literature, dissertations, and publications. This facilitated understanding of existing theories and approaches to the preparation of future geography teachers for continuous professional development. The study of these sources enabled the assessment of the current state of the issue and identification of gaps in existing research. Additionally, this method was employed to reframe complex concepts into simpler components for better understanding and contextualization within the framework of continuous professional development in geography teacher education. The use of theoretical research methods such as description, synthesis, systematization, abstraction, comparison, and generalization was a crucial stage in processing information obtained through theoretical analysis. Description allowed for a detailed presentation of the main trends identified during the analysis, including characteristics of various methodological approaches, their peculiarities, and application methods in the preparation of future geography teachers. Synthesis was used to integrate different parts of the analyzed information into

a unified whole. Systematization facilitated the organization of acquired information, enhancing its comprehension and analysis. Abstraction was employed to highlight the most important characteristics and properties of methodological approaches in scientific and pedagogical research, helping to focus on key aspects of scientific publications and separate distracting details. Comparison enabled the identification of similarities and differences among various approaches, which could be useful in selecting the most effective preparation methods. Generalization allowed for the formulation of main conclusions from the obtained results and determination of directions for further research.

The use of these methods facilitated the integration of methodological approaches (systemic, personal, activity-based, axiological, synergetic, competency-based) and ideas for preparing future teachers, creating a pedagogical system conducive to continuous professional development. This enabled the identification of key aspects of preparing future geography teachers for continuous professional development and determination of directions for further research. Pedagogical modeling and forecasting methods were employed to develop a model for preparing future geography teachers for continuous professional development. Material was collected to refine the model, taking into account identified theoretical approaches. The model will be used for implementation in the education process of higher education institutions in Ukraine for the preparation of students specializing in 014.07 Secondary Education (Geography) at the bachelor's and master's levels. This will help improve the quality of preparation for future geography teachers and their readiness for continuous professional development. The use of various research methods helped identify key aspects of methodological approaches to preparing future geography teachers for continuous professional development, determine directions for further research, and reconsider the developed preparation model to enhance its effectiveness during implementation in the educational process of Ukrainian universities.

RESULTS AND DISCUSSION

Continuous professional development is realized through the interaction of formal and informal education, based on a new virtual reality – an innovative environment. In this environment, creative ideas and practically oriented pedagogical research accumulate, cooperation and communication take place, and new forms of scientific and methodological consulting and innovation emerge. Preparing future geography teachers for continuous professional development is a purposeful process aimed at enhancing their professional motivation, developing personality traits such as willpower, and fostering self-awareness, self-education, and self-realization in the academic environment. This process also involves the formation of critical thinking skills, adaptation to changes, and lifelong learning, all of which are crucial for successful professional activity in the modern world. Here, students acquire necessary professional skills and develop the ability for independent improvement in their

professional sphere. Continuous professional development of future geography teachers includes self-education, self-cultivation, self-improvement, and self-development, evolving through formal, informal, and non-structured education. The readiness for continuous professional development of future geography teachers must be formed by creating positive motivation within higher education institutions, fostering a conducive environment for continuous professional development, emphasizing innovation in educational content to prepare for continuous professional development, and stimulating individual research.

Considering the theoretical rationale, the essence of its individual components has been identified, and pedagogical conditions for the system of preparing future geography teachers for continuous professional development have been determined, based on methodological approaches to forming the readiness of future geography teachers for continuous professional development (Nosachenko, 2022). One of the main tasks in planning scientific and pedagogical research is the selection of methodological approaches that will determine its foundation. This problem can be successfully addressed by adhering to a number of conditions:

- methodological approaches used in the research should correspond to the goals and objectives set for the research;
- to obtain an objective and comprehensive understanding of the phenomenon under study, it is recommended to apply not only one but several approaches corresponding to different levels of methodology;
- the group of methodological approaches used in the research should not contradict each other;
- the methodological approaches used in the research should complement each other, allowing the object to be considered from all possible angles and in the context of all interrelationships.

A methodological approach includes a set of ideas shaping the researcher's scientific worldview, the main principles of his research strategy, and the methods and procedures that allow this strategy to be implemented in practice. Contemporary pedagogical research is based on numerous methodological approaches representing various research directions and reproducing the specifics of particular scientific research activities in the field of pedagogy (Guo *et al.*, 2022). The main methodological approaches commonly used in scientific research on the theory and methodology of professional education include systemic, personal, activity-based, axiological, synergetic, and competency-based approaches (Zhyhir, 2016).

The authors of this work consider the *systematic approach* to be fundamental in preparing future geography teachers for continuous professional development. The systematic approach is a methodology that utilizes a set of methods for studying objects as systems, considers the object as a combination of elements interacting with each other and the surrounding world, and is based on an understanding of the systematic nature of knowledge. Characteristics defining a system as an object of scientific research

include: purposiveness, implying the presence of mechanisms to ensure the system's stability; integrity, presenting the system as an organic unity of its components, where a change in one component results from a change in another; interrelation of tasks solved within each individual component; hierarchy, involving the consideration of each element of pedagogical competence formation as a subsystem within a higher-order system – the system of professional pedagogical training; dynamism, during which the content of system components changes in response to societal needs, leading to qualitative changes in the expert's personality, adapting to changes in the external world while preserving its uniqueness (Kobernik, 2013; Dupak, 2015; Stepanchenko, 2017).

The systematic approach is recognized as a methodological direction in science aimed at creating research methods and constructing complex systems of various kinds. The use of a systematic approach in researching any pedagogical system requires establishing correspondence between the properties of the educational system and societal needs. The systematic approach encompasses various methods of cognition, such as systematic analysis, systematic programming, and systematic design, which serve for researching and modeling objects or their models. This allows for the analysis of all components of the system of professional training of future experts in professional education, identifying relationships between them, understanding the functions of individual system elements, and mechanisms of their functioning (Shapran, 2008; Meshko, 2013). The systematic approach emphasizes the importance of certain ideas and principles. This includes professional orientation, a scientific approach, systematic approaches, individualized approach to each student, active involvement of students in the learning process, academic interaction, harmony of structural elements of the educational process. Additionally, the use of modern technologies for preparing future geography teachers is important. Moreover, this approach also includes innovativeness, flexibility, and adaptability to changing conditions and societal needs, which are integral components of the readiness of future geography teachers for continuous professional development.

A systematic approach allows to create indivisible integration models and the study of basic functions, components, elements, their interrelationships and relations, as well as factors necessary for the existence of the system and conditions for functioning both in an inert and active plan. Understanding the interrelation of facts and phenomena in the educational process, as well as the interaction of situations, components of learning and education, needs to be considered by studying the components of the entire system. The teacher's educational activity should be structured as a dynamic system. Developing systematic thinking contributes to the ability to build and adapt professional activities, find optimal combinations of pedagogical tools, forms and methods of work. Analyzing the content of education and upbringing is important for self-regulation of one's own pedagogical activity, reducing uncertainty and

randomness in teacher's professional actions. According to the systematic approach, the preparation of future geography teachers for continuous professional development is considered as a holistic system, where all components are interconnected and interdependent. The use of a systematic approach in conducting pedagogical research contributes significantly to its effectiveness. The systematic approach serves as a methodological basis for pedagogical research at all stages. The concept and model of preparing future geography teachers for continuous professional development are based on this methodology, which allows identifying general systematic properties and qualitative characteristics of individual components.

Among various approaches to pedagogical research, modern researchers are particularly interested in the *personal approach*. This interest is justified since the personal approach is based on the principles of humanistic theory, which plays a significant role in contemporary education. The main ideas of this theory have been developed by philosophers, psychologists, and educators throughout different historical periods. In humanistic theory, the individual is considered the highest value of society and has the right to various aspects of a dignified life, including education, upbringing, security, work, personal development, and self-realization in various spheres of life (Stepanchenko, 2017; Valko, 2020). The personal approach in the system of preparing future geography teachers for continuous professional development involves directing the educational process according to the curricula of the specialty 014.07 Secondary Education (Geography) towards the personality and individuality of the higher education applicant, taking into account their educational, organizational, informational, advisory, social, and research interests and needs during the learning process, considering their potential abilities and opportunities. The personal approach is focused not only on implementing individual forms, methods, and means of learning but also on developing civic, social, cultural, leadership, entrepreneurial, health-preserving, and other competencies through continuous self-development and self-education (Grunis, 2021).

The personal approach in preparing future geography teachers for continuous professional development is important not only during classroom and practical sessions but also during the educational, educational-field, and production (pedagogical) practices of higher education applicants, especially in the process of familiarizing them with the current state of the educational process in secondary educational institutions and advanced experience in schools (Krylovets, 2009; Mulaudzi *et al.*, 2023). The personal approach envisages that the individual acts as the subject of various aspects of educational activity, including cognition, communication, self-knowledge, and self-development. Among other positions reflecting the implementation of the personal approach in education, the following can be highlighted: cooperation as the key principle of interaction among all participants in the educational process; the active role of the student in the

learning process, where they become the subject-subject of interaction; orientation towards the subjective experience of the student as the basis for pedagogical decisions; stimulating students to achieve success and develop their own abilities; providing freedom of choice and action for students, which promotes their self-expression; taking into account student motivation in the learning process; supporting the idea of self-analysis of personality and understanding the personal meaning of knowledge. Thus, the personal approach in professional education focuses on self-awareness and self-development of the subject of the educational process, ensuring the disclosure of their own capabilities and achieving personal self-realization and self-assertion.

The personal approach in teacher training focuses on the individual as the main goal, subject, result, and main criterion of effectiveness and efficiency of this training. This approach serves as the basis for experimental verification of the model and for determining research prospects. In particular, the personal approach in teacher training involves individualizing education aimed at considering the personal characteristics of each student. It is intended to develop not only the professional skills and knowledge of future educators but also to shape them as individuals. This approach emphasizes the development of creativity, self-awareness, and the ability of geography teachers to independently solve pedagogical tasks and adapt them to various situations in the learning environment. To achieve success in the personal approach to the preparation of geography teachers, it is necessary to consider various theoretical and practical aspects of personality development, influential factors on the formation of individual traits and values of teachers. Additionally, the personal approach involves active participation of students in their own learning, planning, and assessment of results, stimulating their self-reflection and personal development. Overall, the personal approach is an important paradigm in modern pedagogical science and practice, aimed at creating conditions for unlocking the potential of each individual and forming highly qualified and responsible educators.

In modern pedagogical research, the *activity-based approach* is considered a methodology that promotes personality development through active subject activity, active forms of cognitive activity and creative reinterpretation of the world, as well as through active interaction with others. This approach allows assigning “personal impact” to professional tasks in human activity. Research results show that the active approach in professional education is implemented through creating conditions that help students freely choose their activities and achieve positive results in collaboration with teachers. It emphasizes the ideas of activity transformation, awareness of socio-cultural values, effective self-management, and creative self-realization, productive continuous self-education, development of personal and professional qualities, interests, and needs. The activity-based approach primarily focuses on organizing the process of professional training, emphasizing the

active involvement of students, which includes setting and solving specific professional tasks, as well as real practical activities in pedagogical situations. The activity-based approach allows considering the individual needs of higher education students, opportunities, and results of studying new professional functions, participating in various educational processes, and having the opportunity to freely choose the path to achieving a relevant professional position. The activity-based approach in professional training is based on the active role of the student, their ability to independently solve tasks and engage in practical activities. These conditions allow students to develop their own professional skills and potential, understand their needs, and achieve certain professional goals.

The activity-based approach is based on understanding the interrelation and mutual influence between the teaching and learning subsystems, which operate as a single integrity. Professional and individual characteristics of the teacher affect the organization of students’ learning and cognitive activities and the results of pedagogical work, considering regulatory requirements and providing it with a unique character. Carrying out pedagogical activities contributes to the development of personal qualities and characteristics of both the teacher and the student, influencing the formation of their beliefs, interests, values, and professional positions. Ensuring the effectiveness of natural science education in geography involves implementing an activity-based approach, which can be characterized by the motto “Four stages to achieve the goal: plan your activity, prepare to achieve goals, act enthusiastically, and constantly improve”. In this way, future geography teachers position themselves as subjects of cognition of the geographical environment, communication, relations, and their own creativity, development. Activity contributes to the formation of all mental processes and consciousness in a person. These mental processes and consciousness, in turn, regulate activity and become key factors in its further development. Involving the subject in activity leads to the integration of various and complex components of activity into a single functional psychological system. Under the influence of activity requirements, individual qualities that make it up develop, acquiring properties of promptness and adaptability to these requirements.

The *axiological approach* in professional education is built on universal, civic, national, and professional values that determine a person’s perception of the world, their own activities, and self-assessment. Key concepts within this approach include “value” (a set of real objects and abstract ideas that have great significance for society or an individual), “value orientation” and “value consciousness”. The axiological approach serves as a special tool that contributes to the scientific analysis of various phenomena and events from the perspective of their potential to satisfy the current needs of people. On the other hand, it helps address tasks related to further humanizing society, particularly the education system. The application of the axiological approach in the professional training of future

geography teachers is justified by several factors. In the process of professional training, it is important to develop a system of value orientations for future geography teachers, which will serve as the foundation for the behavior, attitude, and worldview of students. These orientations are key components of a person's worldview and contribute to effective adaptation to the modern environment. The axiological approach allows considering professional training as a socio-pedagogical process in which humanistic values play a crucial role. These values are universal and fundamental. This approach promotes harmony between the goals and means of education, and it enables the analysis of subjects and phenomena in terms of their significance for students' development and the formation of their professional self-awareness. Additionally, the axiological approach involves the development of critical thinking, independence, and responsibility, which are important aspects of professional education.

This approach recognizes the individual as the most important value of society and defines them as the goal and object of development. In different historical epochs, certain values, such as life, health, love, education, science, work, peace, beauty, and homeland, have been the main focus of social interest. These values not only reflect the cultural and social priorities of the time but also form the basis for society's development, defining its directions and goals. They also play a crucial role in shaping the identity and worldview of individuals. They determine the moral, aesthetic, economic, ecological, and other aspects of personality, and their development is a key task of humanistic pedagogy. It is aimed at studying phenomena from the perspective of their value in satisfying human needs and the harmonious development of society. This approach recognizes the individual as the highest value of society and an important object of upbringing and education. It explores which values are most important for individuals and society as a whole and how they can be developed and implemented in pedagogical practice. The principles of the axiological approach are based on the belief that a person's life should be filled with values such as morality, culture, tolerance, social justice, and others. By considering the individual as the subject of value relations, this approach contributes to the development of their internal motivation, moral qualities, and readiness for active civic participation. The axiological approach also addresses the question of how to shape value consciousness and culture among students, contributing to their personal growth and socio-cultural development. This requires teachers to influence students' value orientations and promote their development as active and responsible citizens.

Equally important in the system of preparing future geography teachers for continuous professional development is the *synergistic approach*. The study of the synergistic approach in the training of future teachers has been the subject of works by Ukrainian and foreign scholars (Stepanchenko, 2017; Sahach, 2021). These systems are constantly evolving due to their ability to self-organize.

Synergetics defines new paradigms in modern pedagogy, directing them toward stimulating the development of creativity and innovative thinking in future geography teachers, particularly in the context of continuous professional development. The synergistic approach is based on principles such as subjectivity, reflexivity, openness, and social partnership. It takes into account the non-linearity of educational systems and their internal tendencies for development, directing them toward achieving set goals (Zhyhir, 2016). The synergistic approach aims to ensure self-organization in the process of professional training for future geography teachers and the transition from a closed educational system to an open system. It defines the individual development of a specialist not only as a consistent, simple, harmonious process but also as a process accompanied by contrasts and leading to the transformation of value orientations and active self-identification and self-education activities. The synergistic approach represents a complex of interconnected principles for the functioning of various systems that can self-organize. In contemporary research, the synergistic approach is considered a general scientific methodology in the field of pedagogy. According to the synergetic concept, most systems in nature, which are open, constantly exchange energy and information.

The main principles of the synergetic approach are considered methodological foundations that can be used to identify the essence of the teacher training process using modern technologies. They can also be used to describe and evaluate this process using statistical methods in pedagogical research. The synergy of pedagogical influence arising from the combined impact of all components leads to the overall effect exceeding the influence of individual factors. From this perspective, the synergetic approach contributes to optimizing the preparation process of future geography teachers for continuous professional development. Additionally, this approach fosters the development of innovative approaches to teaching and teacher training that meet the demands of modern educational processes. It is important to note that the synergetic approach in pedagogy takes into account the dynamics and interaction of all components of the educational process. It allows considering teaching and education as interconnected and interdependent aspects of educational activity. Pedagogical processes become more effective when viewed as a system in which each element interacts with others. The application of the synergetic approach in pedagogy opens up opportunities for creating innovative educational programs that take into account the impact of various factors on the learning and teaching process. This enables the development of more effective and adaptable pedagogical approaches and methods tailored to the needs of contemporary education. Considering the growing complexity of modern society and educational requirements, the synergetic approach can become a crucial component for the further development of pedagogy and teacher training. It promotes a deeper understanding of the processes of learning and teaching, allowing for their optimization

and increased effectiveness. Creativity and flexible thinking are essential for adapting to constant changes characteristic of contemporary social development.

The *competency-based approach* is recognized as an educational methodology based on defining competencies (educational outcomes) as the main focus. It serves as an important resource for rethinking traditional goals, theories, and practices of education. The concept of “competence” is recognized as a new key element of education, indicating a shift in focus in professional education from subject-oriented knowledge to a more personalized approach. Effective development of competencies is achieved through increasing practical training while maintaining fundamental aspects of learning. In the field of theory and methodology of professional education, the competency-based approach is recognized as the basis for defining the learning objectives of a specialist (Timets, 2011). Competence, in turn, becomes a new key category that serves as a common language for expressing the results, planning, and content of education. One argument in favor of implementing the competency-based approach is the need to align educational systems in a globalized world to provide young people with opportunities to integrate into various social environments and independently determine their place in life. In such a context, not only the formation of educational outcomes and procedures become important, but also the content and process of learning, which must be mutually aligned. The competency-based approach entails shifting the focus from accumulating normatively established knowledge, skills, and abilities to developing practical activities in the individual, the ability to apply individual techniques and experience successful actions in professional and social situations.

The competency-based approach is becoming increasingly widespread. The main educational goals are key competencies that modern geography teachers' training should focus on. The competency-based approach attracts significant attention in the international scientific and pedagogical community. In the international educational context, practical forms already exist and are successfully implemented, allowing for the realization of the main principles of the competency-based approach in professional education. The process of training future geography teachers with a competency-based approach includes the development of personal and professional competencies. Personal competencies include the ability to overcome problems and stress, demonstrate tolerance, work in a team, be communicative, initiative, non-standard, use new ideas and innovations, as well as argue one's opinion. Professional competencies specific to geography teachers include knowledge of geographical processes, the ability to analyze geographical data, understanding the interrelationships between different geographical factors, and the ability to teach this knowledge to students. Pedagogical skills are also an important component, such as lesson planning, using various teaching and assessment methods, as well as establishing positive relationships with students.

The main results of the study focus on methodological approaches to preparing future geography teachers for continuous professional development. These results are related to contemporary trends in education and the need for innovation in the educational process, including the findings of the research by B. Pasang & S. Najib (2022) regarding the continuous professional development of students and their awareness of the positive qualities of education for sustainable development; Š. Karolčík & M. Marková (2023), whose work considers the importance of dynamic changes and innovations that geography teachers encounter; C. Martínez-Hernández *et al.* (2023), whose research on online education and blended learning, including geographic information system tools, highlights the role of an activity-based approach; the synergistic and systematic approach is elucidated in the work of F. Guo *et al.* (2022) regarding readiness to develop problem-solving abilities in real-life situations among geography students; V. Pasternatskyi *et al.* (2023), whose work generally defines the pedagogical context of self-education for teachers.

Thus, the system of preparing future geography teachers for continuous professional development should be based on a comprehensive approach that includes various methodological approaches. This approach should ensure the formation of necessary competencies and skills in future teachers for successful and continuous development throughout their professional careers. Analysis of research indicates the importance of developing effective teaching methods and approaches that would instill in students the readiness for self-improvement throughout their professional activities.

CONCLUSIONS

Studying and analyzing methodological approaches to the education of future geography teachers and identifying their characteristics in the context of continuous professional development are essential for improving the teacher education system in Ukrainian higher education institutions. Various methodological approaches to this issue have highlighted key aspects, such as the development and implementation of modern geography teaching methods reflecting current trends in education. Special emphasis is placed on identifying effective teaching strategies and the readiness of future geography teachers for continuous professional development in practical application. Additionally, there is a need to reconsider approaches to teaching and implementing innovations in geographic education, which will require future geography teachers to continually enhance their professional competencies through ongoing learning.

The main results of the study include recognizing the importance of professional preparation of future geography teachers for continuous professional development and adapting teaching approaches to modern educational challenges. Methodological approaches and their implementation in the context of continuous professional development were analyzed using various research methods. Key methodologies and tasks related to preparing future

geography teachers for continuous professional development were identified, along with the specific features of different methodological approaches to this process. The importance of individualization in the preparation of future geography teachers, which contributes to their continuous professional development, was also highlighted. The characteristics of primary approaches (systematic, personal, synergistic, activity-based, axiological, and competency-based) were thoroughly described in the context of preparing future geography teachers for continuous professional development. The importance of fostering the readiness of future geography teachers for continuous

professional development was emphasized in the context of professional preparation considering each methodological approach. Prospects for further research may involve analyzing specific teaching methods and learning strategies, their impact on acquiring professional skills, and enhancing the motivation of future geography teachers for learning.

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CONFLICT OF INTEREST

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Методологічні підходи підготовки майбутніх учителів географії до безперервного професійного розвитку

Анотація. У світі, де відбуваються швидкі зміни в суспільстві, економіці та технологіях, необхідно, щоб майбутні вчителі географії були орієнтовані на останні тенденції та готові адаптуватися до них шляхом постійного фахового розвитку. Відповідно, метою наукової статті стало визначення сутності та характеристика основних методологічних підходів підготовки майбутніх учителів географії в контексті їх безперервного професійного розвитку. В роботі використано різноманітні методи дослідження, включаючи теоретичний аналіз психолого-педагогічних джерел, опис, синтез, систематизацію, абстрагування, порівняння та узагальнення даних. Ці методи допомагають ідентифікувати основні аспекти методологічних підходів до підготовки майбутніх вчителів географії до постійного професійного розвитку. Вони також використовуються для створення моделі навчання, яка сприяє безперервному розвитку учасників освітнього процесу. У дослідженні розкрито методологічні підходи до підготовки майбутніх учителів географії до неперервного професійного розвитку. Визначено концептуальну методологію та завдання дослідження, особливості методологічних підходів до підготовки майбутніх учителів географії в умовах неперервного професійного розвитку. У статті розкрито сутність індивідуалізації у підготовці майбутніх учителів географії до безперервного професійного розвитку. Охарактеризовано особливості основних підходів (системного, особистісного, синергетичного, діяльнісного, аксіологічного і компетентнісного підходів) у підготовці майбутніх учителів географії до безперервного професійного розвитку. Підкреслено значимість формування готовності майбутніх учителів географії до безперервного професійного розвитку у професійній підготовці відповідно кожного методологічного підходу. Акцентовано увагу на важливості переходу від класичних моделей освітньої підготовки майбутніх учителів географії до систем, які готують професіоналів, спроможних працювати в нових обставинах і готових до постійного навчання, виховання та безперервного професійного зростання. Практична цінність дослідження полягає в тому, що воно акцентує увагу на важливих методологічних підходах та інноваційних методиках, які можуть бути використані для адаптації підходів до організації освітнього процесу за спеціальністю 014.07 Середня освіта (Географія) та за іншими спеціальностями підготовки майбутніх учителів в умовах сучасних викликів в освіті

Ключові слова: теорія і методика професійної освіти; педагогічна система; самоосвіта; самовдосконалення; методологічний підхід; системний підхід; освітньо-професійна програма