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FORMATION OF ACMEOLOGICAL COMPETENCE IN FUTURE MATHEMATICS TEACHERS DURING PEDAGOGICAL PRACTICE

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Annotation. The article discusses that the process of forming the acmeological competence of future mathematics teachers should be based on interrelated principles during pedagogical practice. These principles include the following: the value principle, which involves the value orientations of the future mathematics teacher during pedagogical practice; the principle of the subject of activity, which aims to identify the personal characteristics of the future mathematics teacher and define the criteria and principles for their development; the creative principle, which aims to maximize the development of creative initiative in the pedagogical process, focusing on not only the acquisition of knowledge but also the experience of creative activity; the feedback principle and the principle of activity, which aims for the student to acquire knowledge through independent learning rather than receiving it in a ready-made form; the principle of humanism, which focuses on supporting the student – the future mathematics teacher – during pedagogical practice. We have developed a model describing the process of forming graduates' acmeological competence during pedagogical practice. The model consists of several blocks: goal-setting, methodological, activity-based, and evaluation-result blocks. The purpose of the research is to form the acmeological competence of graduates during pedagogical practice. The result of implementing this block is the increase in the level of graduates' acmeological competence during pedagogical practice.

Keywords: pedagogical practice, modeling, educational process, cognitive, acmeological competence, intellectual-creative skill

Introduction. The educational process is defined as a system of methods, techniques, and approaches, using various models to deepen knowledge. 'In the study of the educational process, the model serves as an important tool to visually present the connections and relationships between its components. Therefore, modeling is becoming increasingly essential for organizing the educational process in higher education institutions and for scientific research' [1,p.279].

In his work, S.I. Arkhangelsky discusses the role of modeling in the development of students' intellectual activity. 'In the educational process, thinking modeling must be applied in the broadest and most diverse ways. For example, the teacher's skill begins with how well they can model this group of students, their interests, level of preparation, emotions, and so on' [2, p.106].

Modeling is carried out in the following directions:

- as a constituent and inseparable element that needs to be researched in the educational process;
- as a research method necessary for students to acquire new knowledge;
- as an educational activity, which is a component of the educational process.

Thus, modeling is one of the effective methods for studying material world objects and phenomena. It, based on the methodology of the systemic approach, clarifies its principles and simultaneously becomes an important general scientific methodology for understanding objective reality.

When reviewing scientific literature, considering the model as a prototype, it shows that it is a system of elements describing the different aspects, relationships, and functions of the object under study. In other words, we reveal the image of a specific phenomenon, in our case, the acmeological competence of future mathematics teachers during pedagogical practice [3, p.223].

Materials and methods. In order to effectively organize the process of developing the acmeological competence of future mathematics teachers during pedagogical practice, we have developed a model that contributes to the development of this competence. The diagnostic methods used allow us to identify the development of future mathematics teachers' acmeological competence during pedagogical practice based on various criteria: motivational, cognitive, and technological.

Let us now consider these criteria and clarify their meaning.

Motivational – the desire for self-expression; interest in non-standard thinking; emotional satisfaction from cognitive activity; the need to exchange ideas, assumptions, and creative solutions; personal interest in mastering intellectual-creative skills.

Cognitive – understanding the essence and value of heuristic thinking; perceiving oneself as the subject of intellectual-creative activity; knowing the basic methods of logical thinking and heuristic thinking techniques; self-assessment of rational and creative thinking skills.

Technological – the ability to independently and creatively devise educational tasks; striving to see the creative goal and solve it through non-standard methods; the ability to conduct research based on heuristic thinking methods and techniques; the ability to find solutions in thinking activities by relying on intuitive mechanisms: associativity, analogical thinking, probability.

The process of developing the acmeological competence of future mathematics teachers during pedagogical practice should be based on the following interrelated principles: value principle; subject of activity principle; creative principle; feedback principle; development principle; activity principle; humanism principle.

1. Value principle – The value orientations of the future mathematics teacher during pedagogical practice are an important characteristic of their personality. These orientations determine their interaction with the surrounding environment, relationships, and regulate behavior. By understanding their value orientations, a person seeks their place in the world, contemplating the meaning and purpose of their life's activities. The structure and content of an individual's value orientations determine their direction and position regarding various phenomena of reality.

2. Subject of activity principle – This principle aims to identify the personal characteristics of the future mathematics teacher during pedagogical practice and define the criteria and principles for their development:

- The student – the future mathematics teacher – is the core of the educational process, the organizer, coordinator, and regulator, as well as the architect of pedagogical collaboration;
- As the main subject of the education system, the teacher strives to optimize the organization of educational goals and tasks, to present educational material systematically and correctly, and to connect it to human life and activity;
- During pedagogical practice and the educational process, the future mathematics teacher must integrate psychological components such as creative activity, logical cognition, professional communication, and repetition.

3. Creative principle – This principle is aimed at developing the creative initiative as much as possible in the pedagogical process. It aims for the student to master not only knowledge but also the experience of creative activity. The educational process should not be a monotonous and boring transmission of information, but rather an interesting and insightful organized process. This process contributes to the development of creative initiative in the future mathematics teacher during pedagogical practice.

4. Feedback principle – In the process of pedagogical practice, feedback is provided according to the following scheme: teacher – student, student – student, student – teacher, and, as defined, based on specific tasks and objectives, as well as discussion issues that arise during the lesson. It is crucial that these actions and situations are not chaotic, but are properly planned and organized in line with the lesson's objectives and expected outcomes. Only on the basis of

correctly formulated tasks and objectives can the teacher offer feedback to students, which is implemented throughout all stages of the lesson: introduction, analysis, and reflection.

5. Development principle – Understanding the question as a factor of growth and professional improvement, striving for logical actions, choosing rational methods and techniques, and optimizing the solution of problems and tasks;

- Understanding the development process from a personal perspective and psychological balance;
- Analyzing the development process in the context of the subject's, i.e., the future teacher's, activity;
- Acknowledging the individual nature of development;
- Connecting the teacher's personal development to real-life situations and professional choices;
- The role of potential activity in the future teacher's actions in the context of individualized development; activating their cognitive abilities and capabilities.

6. Humanism principle – Aimed at providing effective support to the future mathematics teacher during pedagogical practice. It also includes recognizing them as a knowledge subject with pedagogical capabilities. The humanism principle helps activate the future teacher's tolerance potential, elevating them to a new level of professional-humanistic relationships.

7. Humanism principle – This principle is aimed at providing effective support to the future mathematics teacher during pedagogical practice. It also involves recognizing them as a subject of knowledge with pedagogical capabilities. The humanism principle helps activate the future teacher's potential for tolerance, elevating them to a new level of professional-humanistic relationships.

The process of developing the acmeological competence of future mathematics teachers during pedagogical practice requires the adherence to a number of pedagogical conditions.

Results and discussions. The pedagogical conditions are based on the conceptual ideas of developing the future mathematics teacher's acmeological competence during pedagogical practice. These conditions also rely on psychological aspects that consider the gradual formation of personality and cognitive capabilities.

Certainly, during pedagogical practice, the future mathematics teacher directs their efforts and abilities toward professional improvement, applying the knowledge acquired in practice, realizing their creative potential, and using modern educational technologies.

Additionally, the subject position and the formation of the individual as a pedagogical condition for the development of acmeological competence are significant. K.A. Abulkhanova identifies the ability to resolve various contradictions as a key component of an individual's subjectivity [4, p.14].

A necessary component in defining an individual's subjectivity is the development of the "self-concept."

To effectively develop the "self-concept," it is important to form the following skills in future teachers:

- analyzingfuturesituations;
- design skills;
- reflective skills;
- perceptive skills;
- team work skills, developing the teacher's inner components [5, p.31].

According to A.K. Markova, motives play an important role in the purposeful realization of professional tasks by the subject of knowledge, i.e., the future mathematics teacher [6-7]. The formulation of this issue makes the realization of the student's potential to master the pedagogical profession during the pedagogical practice period especially relevant, as this stage is a crucial part of the preparatory work.

Another pedagogical condition in the process of developing the acmeological competence of future mathematics teachers during the pedagogical practice phase is professional self-realization. This process is about demonstrating professional qualities as a teacher. In other words, it involves finding one's place in the pedagogical field and the educational process, successfully performing one's role, demonstrating professional competence, establishing communication with students, striving to unlock pedagogical potential, and solidifying a genuine desire to become a teacher [8].

The professional competence of the future mathematics teacher during pedagogical practice will have a conditional character, as it is not something that can be achieved in just one day or a short period of time. Typically, its formation is carried out on the basis of theoretical information and knowledge and is realized through practical experience, which, in turn, involves developing the skills and experience of providing appropriate mathematical education to students, teaching them to think, analyze, generalize, and solve problems [9].

Ultimately, everything increases the level and significance of the future mathematics teacher's professional self-realization during pedagogical practice and serves as a tool for the development of acmeological abilities.

Another pedagogical condition for forming acmeological competence is the future mathematics teacher's mastery of teaching technologies, which paves the way for their full professional development [10].

The process of pedagogical practice should be aimed at developing skills for analyzing and solving professional education tasks:

- Forecasting and implementing the pedagogical process, based on assessing students' learning and educational development levels;
- Developing students' cultural and aesthetic activities;
- Organizing various activities for students;
- Creating conditions aimed at development;
- Interacting with students of different ages, identifying their developmental levels and challenges;
- Workingwithparents;
- Organizing the process of additional education;
- Identifying the goals, objectives, characteristics, principles, forms, methods, and tools for students' learning;
- Establishing the foundations of human psychology and considering the psychological features of children of different ages;
- Developingstudents' interests;
- Utilizing the experience of other educators;
- Additional training and self-education.

Conclusion. Our research was developed with consideration of humanistic, personality-oriented, axiological, and systemic approaches. Through the personality-oriented approach, the support of the student's self-awareness, self-development, and self-realization process is defined, as well as the development of their individuality.The systematic approach is aimed at forming pedagogical health-preserving activities as a unified process.

The implementation of the humanistic approach in the process of developing the acmeological competence of future mathematics teachers means the comprehensive development of the future teacher, with potential for continuous professional development. This is a teacher with creative thinking and innovative approaches, who has broad opportunities in solving educational tasks. Essentially, this approach serves as a good assistant for shaping the future mathematics teacher with methodological skills and organizational abilities.

The high (productive) level of acmeological competence of future mathematics teachers during the pedagogical practice phase can be described as follows:

- Overall, future mathematics teachers' knowledge is formed with an analytical perspective on pedagogical activities, incorporating elements of self-monitoring and self-analysis;
- The initial pedagogical skills acquired demonstrate the future mathematics teacher's active involvement in automated actions during the pedagogical practice phase;
- A reflective attitude shows the level of self-realization of the future mathematics teacher.

Professionalism is currently being actively researched in the fields of labor psychology and acmeology, and its definition varies in each science. In psychology, professionalism is the consistent achievement of high results in solving tasks in the field of labor activity.

Acmeology actively studies the issue of reaching the peaks of professionalism, and it is this science that offers new universal methods and tools for enhancing professional levels, which can be applied by specialists from various fields [11].

The historical and philosophical definition of the formation of acmeological competence allows for the determination of its connection with sciences such as philosophy, cultural studies, and anthropology.

As a methodological basis for solving the issue of developing acmeological competence in future mathematics teachers, the competency-based approach, which currently serves as the foundation of the higher education system for training pedagogical personnel, is used.

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БОЛАШАҚ МАТЕМАТИКА МҰҒАЛІМДЕРІНІҢ ПЕДАГОГИКАЛЫҚ ПРАКТИКА БАРЫСЫНДА АКМЕОЛОГИЯЛЫҚ ҚҰЗЫРЕТТІЛІГІН ҚАЛЫПТАСТЫРУ

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Низами атындағы Ташкент мемлекеттік педагогикалық университеті, Ташкент қ., Өзбекстан

Аннотация. Мақалада болашақ математика мұғалімдерінің акмеологиялық құзыреттілігін қалыптастыру процесі педагогикалық тәжірибе барысында өзара байланысты принциптер негізінде құрылуы керек екендігі қарастырылады. Осы принциптер мыналарды қамтиды: құндылық принципі, педагогикалық тәжірибе барысында болашақ математика мұғалімінің құндылық бағдарлары; әрекет субъектісі принципі, болашақ математика мұғалімінің жеке тұлғалық қасиеттерін анықтауды, оны қалыптастырудың критерийлері мен принциптерін айқындауды көздейді; шығармашылық принципі, педагогикалық процесте шығармашылық бастаманы барынша дамыту, студенттің тек білім алуы ғана емес, шығармашылық қызмет тәжірибесін де меңгеру мақсатында бағытталады; кері байланыс принципі және қызмет принципі, студенттің білімді дайын күйінде алмай, оларды өздігінен меңгеру жолымен алуын көздейді; гуманизм принципі, педагогикалық тәжірибе кезеңінде студентке – болашақ математика мұғаліміне қолдау көрсетуге бағытталған. Біз педагогикалық тәжірибе барысында түлектердің акмеологиялық құзыреттілігін қалыптастыру процесін сипаттайтын модельді тұжырымдадық. Модель бірнеше блоктардан тұрады: мақсатты, әдіснамалық, іс-әрекеттік, бағалау-результативті. Зерттеулердің мақсаты – түлектердің акмеологиялық құзыреттілігін педагогикалық тәжірибе барысында қалыптастыру. Осы блокты іске асыру нәтижесі – педагогикалық тәжірибе барысында түлектердің акмеологиялық құзыреттілігінің деңгейін арттыру.

Тірек сөздер: педагогикалық практика, моделдеу, оқу процесі, когнитивті, акмеологиялық құзыреттілік, интеллектуалды-шығармашылық дағды.

ФОРМИРОВАНИЯ АКМЕОЛОГИЧЕСКОЙ КОМПЕТЕНТНОСТИ БУДУЩИХ УЧИТЕЛЕЙ МАТЕМАТИКИ В ПРОЦЕССЕ ПЕДАГОГИЧЕСКОЙ ПРАКТИКИ

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Аннотация. В статье рассматривается процесс формирования акмеологической компетентности будущих учителей математики в процессе педагогической практики должно строиться на основе взаимосвязанных принципов. Описываются такие принципы, как: принцип ценности, ценностные ориентации будущего учителя математики в процессе педагогической практики; принцип субъекта деятельности, предполагающий определение качеств личности будущих учителей математики в процессе педагогической практики, выявление критериев и принципов ее формирования; принцип творчества, предполагающий максимальную ориентацию на творческое начало в педагогическом процессе, с целью приобретения студентом не только знаний, но и опыта творческой деятельности; принцип обратной связи и принцип деятельности, заключающиеся в получении студентом знаний не в готовом виде, а путем их самостоятельного усвоения; принцип гуманизма, оказывающий действенную поддержку студенту – будущему учителю математики в период прохождения педагогической практики. Нами была сформулирована модель, которая описывает процесс формирования акмеологической компетентности выпускников в процессе осуществления педагогической практики. Модель состоит из нескольких блоков: целевой, методологический, деятельностный, оценочно-результативный. Целью исследований является формирование акмеологической компетентности выпускников в процессе педагогической практики. Результатом реализации данного блока является рост уровня акмеологической компетентности выпускников в процессе прохождения педагогической практики.

Ключевые слова: педагогическая практика, моделирование, учебный процесс, когнитивный, акмеологический компетентность, интеллектуально-творческое умение