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Structural and Functional Model of Pedagogical Training of Future Physical Education Teachers Based on the Acmeological Approach

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Abstract: Contemporary higher pedagogical education places increasing demands on the professional training of future physical education teachers, emphasizing pedagogical culture, self-development, and readiness for innovative activity. Pedagogical culture is understood as an integrative personal-professional quality that includes motivational-value, cognitive, activity-based, and reflective components; however, existing training models for physical education teachers remain largely competency-focused and fragmented. There is a lack of a unified structural-functional model that ensures systematic formation of pedagogical culture based on the acmeological approach within higher education institutions. This study aims to substantiate the theoretical and methodological foundations for developing pedagogical culture of future physical education teachers and to design and implement a structural-functional training model grounded in the acmeological approach. A structural-functional model comprising conceptual-targeted, organizational-methodological, procedural, and resultant components was developed and experimentally tested. Its implementation demonstrated positive dynamics across all components of pedagogical culture, with particularly significant improvements in motivational-value and reflective domains. The study proposes an integrated structural-functional model that operationalizes acmeological principles in the professional training of future physical education teachers, addressing previously underexplored mechanisms of holistic pedagogical culture formation. The findings confirm the effectiveness of acmeologically oriented didactic strategies and support their integration into higher education curricula to enhance professional maturity, independent pedagogical design, and continuous self-development of future physical education teachers.

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1. Introduction

The current trends in the development of higher pedagogical education are characterized by increased requirements for the professional training of future teachers capable of effectively operating in a dynamically changing educational environment[1]. The formation of a pedagogical culture that ensures readiness for innovative activity, professional self-realization, and continuous self-development is of particular importance. In this regard, the training of future physical education teachers goes beyond traditional

subject specialization and requires the introduction of modern methodological approaches aimed at achieving the professional maturity of the teacher's personality[2].

In scientific literature, pedagogical culture is considered as an integrative quality of personality, including value-motivational, cognitive, activity-based, and reflective components[3]. Research in the field of professional training of teachers emphasize the need to transition from reproductive learning models to systems that stimulate the personal and professional growth of future specialists. At the same time, in works devoted to the training of physical education teachers, indicates that the mechanisms for forming pedagogical culture in the context of higher education have not been sufficiently developed[4].

The methodological basis for modernizing pedagogical training is the acmeological approach, aimed at achieving the highest levels of professional development of the individual. Acmeology considers professional development as a process of gradual disclosure of a specialist's potential, the formation of the ability to set goals, self-regulation, reflection, and creative self-realization. In studies of recent years have substantiated the effectiveness of applying acmeological principles in the system of training future teachers, however, the issues of their structural and functional implementation in the training of physical education teachers remain insufficiently explored[5].

Analysis of modern scientific sources shows that the existing models of teacher training are mainly focused on the formation of professional competencies, while the development of pedagogical culture as a holistic personal-professional education is often fragmentary. There is no unified structural and functional model that ensures the integration of competency-based, innovative, and acmeological approaches in the educational process of training future physical education teachers[6].

Thus, a contradiction is revealed between the objective need of the higher education system for a new type of educator with a developed pedagogical culture and the insufficient development of scientific and methodological mechanisms for its formation based on an acmeological approach[7]. Solving this contradiction determines the relevance of this research and the need to develop a structural-functional model for the pedagogical training of future physical education teachers.

The purpose of the presented article is to substantiate the theoretical and methodological foundations for improving the system of developing the pedagogical culture of future physical education teachers based on an acmeological approach and to present a structural-functional model for its implementation in the educational process of higher education institutions[8].

2. Methodology

The research was conducted in accordance with the logic of the systemic and acmeological approaches, which made it possible to consider the process of forming the pedagogical culture of future physical education teachers as a holistic and gradually developing system[9]. The experimental work was conducted on the basis of higher educational institutions that train bachelors in the field of physical education[10].

A complex of theoretical and empirical research methods was used to solve the set tasks. At the theoretical stage, methods of comparative analysis, generalization, analytical and historical review of scientific literature were used, which made it possible to determine the current state of the problem, clarify the conceptual and categorical apparatus, and substantiate the methodological foundations of the research[11].

The empirical stage included questionnaires, interviews, conversations, and observation aimed at identifying the initial level of formation of students' pedagogical culture. To assess the dynamics of indicators, diagnostic methods were used, allowing for

the identification of motivational-value, cognitive, activity-based, and reflexive components of the studied quality[12].

A key element of the research was a pedagogical experiment, within which the developed structural-functional model for the development of pedagogical culture based on the acmeological approach was tested[13]. The experiment included the ascertaining, formative, and control stages. At the formative stage, acmeologically oriented didactic strategies aimed at developing professional self-awareness, goal-setting ability, independent planning of pedagogical activity, and reflexive analysis were introduced into the educational process[14].

For the processing of the obtained data, methods of mathematical statistics were used, which allow determining the reliability of the identified changes and the effectiveness of the proposed system. Comparison of the results of the control and experimental groups ensured an objective assessment of the influence of the implemented model on the level of pedagogical culture of future physical education teachers[15].

Thus, the applied methodological tools ensured a comprehensive study of the problem and made it possible to substantiate the effectiveness of the acmeologically oriented system of pedagogical training[16].

3. Results

During the experimental work, a structural-functional model for the development of pedagogical culture of future physical education teachers based on the acmeological approach was developed and implemented. The model included interconnected conceptual-targeted, organizational-methodological, procedural, and resultant components that ensure the phased formation of professionally significant personal qualities of the future teacher[17].

Implementation of the model was carried out through the implementation of acmeologically oriented didactic strategies aimed at developing professional self-awareness, motivation for pedagogical activity, the ability to set goals, independently design the learning process, and reflexive analysis of one's own activity[18]. Within the framework of the formative experiment, competency-based-integrative, acmeological-developmental, and creative-adaptive learning technologies were tested[19].

The results of diagnostic measurements showed positive dynamics across all structural components of pedagogical culture. The most pronounced changes were identified in the motivational-value and reflexive spheres, which indicates the formation of a stable professional orientation and the ability to self-assess pedagogical activity[20]. In the experimental groups, a statistically significant increase in the level of pedagogical culture was recorded compared to the control groups.

Furthermore, it was established that the implementation of the model contributed to the development of students' skills in independently planning pedagogical activities, predicting educational situations, selecting optimal pedagogical technologies, and organizing an innovative educational environment[21]. The obtained data confirm the effectiveness of the proposed system for developing pedagogical culture based on the acmeological approach.

4. Discussion

The obtained results allow us to assert that the use of the acmeological approach in the system of training future physical education teachers ensures the transition from the traditional reproductive model of training to personality-developing professional training[22]. The developed structural-functional model contributes to the holistic formation of pedagogical culture as an integrative personal-professional quality[23].

The identified positive dynamics are consistent with the results of modern research confirming the effectiveness of acmeological technologies in the professional education of teachers[24]. At the same time, the obtained data specify the mechanisms for implementing the acmeological approach in the training of specific physical education teachers, which was previously covered fragmentarily in scientific literature[25].

Establishing a correlation between the development of pedagogical culture and the formation of the ability to independently design the educational process, reflexive analysis, and continuous professional self-development is of particular importance[26]. This confirms that the acmeological orientation of the educational environment creates conditions for achieving the professional maturity of the future teacher[27].

However, the research does not exhaust all aspects of the problem under consideration[28]. A promising direction for further research is the development of digital acmeologically oriented educational technologies and their implementation in the system of training pedagogical personnel[29],[29].

5. Conclusion

The conducted research confirmed that the development of the pedagogical culture of future physical education teachers is a key condition for improving the quality of their professional training in the higher education system. It has been substantiated that traditional approaches to organizing pedagogical training do not fully ensure the formation of professional maturity, the ability for innovative activity, and a stable motivation for self-development.

The developed and implemented structural-functional model for the development of pedagogical culture based on the acmeological approach made it possible to improve the content, forms, and technologies of training future teachers. Acmeologically oriented didactic strategies that ensure the phased formation of professional competencies, pedagogical self-awareness, reflexive skills, and the ability to independently design the educational process have been identified and implemented.

Experimental testing of the model showed its effectiveness, which was expressed in a statistically significant increase in the level of pedagogical culture of students in the experimental groups. The achieved results confirm the expediency of integrating acmeological, competency-based, and innovative approaches in the system of training future physical education teachers.

The practical significance of the research lies in the development of scientific and methodological recommendations and educational and methodological materials implemented in the educational process of the bachelor's degree program in the "Physical Culture" program, which provides the possibility of their further reproduction in the pedagogical education system.

Thus, the proposed system for developing pedagogical culture based on the acmeological approach is an effective tool for forming a professionally mature and competitive physical education teacher.

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