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TECHNOLOGY FOR DEVELOPING THE METHODOLOGICAL COMPETENCE OF FUTURE MORAL EDUCATION TEACHERS BASED ON AN ERGONOMIC APPROACH (A CASE OF THE PEDAGOGICAL EDUCATION PROGRAM)

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Abstract

The modernization of higher pedagogical education necessitates the development of effective educational technologies that ensure the formation of professionally competent, adaptable, and resilient teachers capable of responding to contemporary educational challenges. In this context, the methodological competence of future moral education (tarbiya) teachers represents a key professional quality that determines the effectiveness of moral, civic, and value-oriented instruction. This study aims to develop and substantiate a pedagogical technology for enhancing the methodological competence of future moral education teachers based on an ergonomic approach, using the pedagogical education program as a representative case. The ergonomic approach is conceptualized as a human-centered pedagogical strategy that optimizes the interaction between students, instructional content, teaching methods, and educational conditions. The research employs a competence-based and technological framework, integrating theoretical modeling, pedagogical diagnostics, and experimental implementation. The proposed technology is structured into interrelated stages—diagnostic, design, implementation, and reflective-evaluative—each aligned with ergonomic principles such as cognitive load optimization, emotional comfort, instructional clarity, and methodological adaptability. The findings indicate that the implementation of ergonomic-based pedagogical technology significantly improves students' motivational engagement, methodological flexibility, and reflective competence. The study contributes to pedagogical theory by elaborating the technological dimension of ergonomic competence development and offers practical guidance for higher

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education institutions involved in training future moral education teachers. The results confirm that ergonomic-based educational technology constitutes an effective and sustainable mechanism for advancing methodological competence within pedagogical education programs.

Keywords: Pedagogical technology; methodological competence; ergonomic approach; moral education teachers; pedagogical education; teacher training technology; competence-based learning.

Introduction

The increasing demands placed on higher pedagogical education in the context of social transformation, digitalization, and value reorientation have intensified the need for scientifically grounded educational technologies that ensure the effective preparation of future teachers. Within this framework, the training of moral education (tarbiya) teachers occupies a particularly significant position, as these educators are responsible for fostering students' ethical consciousness, civic responsibility, and social behavior. However, contemporary pedagogical practice demonstrates that the methodological competence of future moral education teachers is often developed in a fragmented and intuitive manner, lacking a clearly structured technological basis that would guarantee consistency, adaptability, and reproducibility of educational outcomes. Educational technology, understood as a systematic and purpose-oriented organization of the teaching–learning process, provides a methodological foundation for translating theoretical principles into effective pedagogical practice. At the same time, traditional pedagogical technologies frequently overlook the ergonomic conditions under which learning and teaching occur, such as cognitive workload, emotional comfort, temporal organization, and the alignment of instructional methods with students' psychophysiological capacities. The ergonomic approach, which emphasizes the optimization of human–environment interaction, offers substantial potential for enhancing the effectiveness of pedagogical technologies by ensuring that methodological training processes are not only efficient but also sustainable and learner-centered. Despite the growing body of research on competence-based teacher education and pedagogical technologies, there remains a notable lack of studies that conceptualize the development of methodological competence in

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future moral education teachers through an explicitly ergonomic technological framework, particularly within pedagogical education programs. This gap underscores the necessity of designing a specialized technology that integrates ergonomic principles into all stages of methodological competence formation. Therefore, the purpose of the present study is to develop and substantiate a technology for improving the methodological competence of future moral education teachers based on an ergonomic approach, using the pedagogical education program as a contextual model. By addressing this objective, the research seeks to contribute to the advancement of pedagogical technology theory and to provide practical solutions for enhancing the quality and sustainability of teacher training in higher education.

Methods

The methodological basis of this study is constructed upon a technological, competence-based, and ergonomic paradigm aimed at designing and validating a pedagogical technology for developing the methodological competence of future moral education teachers within the pedagogical education program. The research design integrates theoretical modeling and empirical validation, ensuring both conceptual rigor and practical applicability. At the theoretical level, the study employs system analysis, pedagogical modeling, and structural-functional interpretation to define the components, stages, and mechanisms of the proposed technology. The ergonomic approach functions as the core methodological principle, guiding the optimization of learning conditions in terms of cognitive load regulation, emotional comfort, temporal efficiency, and methodological clarity. Methodological competence is operationalized as a multidimensional construct comprising motivational-value, cognitive-content, operational-methodological, reflective-evaluative, and ergonomic components, each associated with clearly defined indicators and performance levels. The pedagogical technology is structured into four sequential and interrelated stages: diagnostic, which identifies the initial level of students' methodological competence and ergonomic readiness; design, which involves the selection and structuring of content, methods, and instructional tools in accordance with ergonomic principles; implementation, which ensures the systematic application of ergonomic-based instructional strategies in methodological training courses; and reflective-evaluative, which facilitates self-analysis, feedback, and

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methodological improvement. The empirical component of the study is conducted with undergraduate students enrolled in pedagogical education programs specializing in moral education, using a combination of surveys, diagnostic tests, structured observations, and expert assessments to collect data on the dynamics of competence development. Quantitative and qualitative data analysis methods, including comparative analysis and descriptive statistics, are employed to evaluate the effectiveness of the implemented technology. The reliability of the findings is ensured through repeated measurements, methodological triangulation, and expert validation, providing a robust methodological foundation for interpreting the results and substantiating the proposed ergonomic-based pedagogical technology.

Results and Discussion

The implementation of the ergonomic-based pedagogical technology for developing the methodological competence of future moral education teachers yielded empirically and conceptually significant results, confirming the effectiveness of the proposed technological framework within the pedagogical education program. The findings indicate that students who participated in the staged technological process demonstrated a consistent and statistically observable improvement across all components of methodological competence, particularly in motivational engagement, methodological adaptability, and reflective self-regulation. The diagnostic data revealed that ergonomic optimization of instructional conditions—such as balanced cognitive load, clear methodological sequencing, and emotionally supportive learning environments—played a decisive role in enhancing students' ability to select, adapt, and justify pedagogical methods in moral education contexts. The design and implementation stages of the technology ensured the systematic alignment of learning objectives, content, teaching methods, and assessment tools, which contributed to the coherence and reproducibility of learning outcomes. From a theoretical standpoint, the results support the argument that pedagogical technology achieves maximum effectiveness when it incorporates ergonomic principles as an integral component rather than as an auxiliary condition. Comparative analysis with existing studies on competence-based teacher education demonstrates that the proposed technology advances current approaches by embedding ergonomics directly into the methodological decision-

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making process of future teachers. Moreover, the reflective-evaluative stage of the technology fostered the development of professional self-awareness, enabling students to critically assess the ergonomic quality of their own instructional practices and to make informed methodological adjustments. These results underscore that the ergonomic-based technology not only enhances immediate methodological performance but also contributes to the long-term professional sustainability of future moral education teachers. Consequently, the discussion confirms that the proposed pedagogical technology represents a scientifically grounded, practically effective, and contextually adaptable model for improving methodological competence in teacher education.

Conclusion

This study substantiates that the development of methodological competence in future moral education teachers can be effectively ensured through the implementation of a purposefully designed pedagogical technology grounded in an ergonomic approach. The research confirms that methodological competence, when developed within a technological framework that systematically integrates ergonomic principles, acquires a stable, adaptive, and practice-oriented character. The proposed technology, structured through diagnostic, design, implementation, and reflective-evaluative stages, demonstrates that ergonomic optimization of learning conditions—such as cognitive load balance, emotional comfort, instructional clarity, and methodological consistency—significantly enhances the quality and sustainability of teacher preparation. The findings indicate that the ergonomic approach functions not merely as a supportive condition but as a core technological mechanism that aligns pedagogical objectives, content, methods, and assessment procedures with human-centered educational requirements. This alignment proves particularly important in the context of moral education, where methodological decisions are closely linked to ethical sensitivity, value transmission, and interpersonal interaction. The study contributes to pedagogical theory by elaborating the technological dimension of methodological competence development and by expanding the conceptual application of ergonomics within teacher education. From a practical perspective, the proposed technology offers higher education institutions a structured and reproducible model for improving the effectiveness of methodological training in pedagogical education programs. The research is limited by its institutional and disciplinary scope, suggesting that

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further studies should explore the adaptability of ergonomic-based pedagogical technologies across diverse subject areas and educational contexts. Overall, the study concludes that the ergonomic approach constitutes a scientifically justified and pedagogically productive foundation for designing educational technologies aimed at advancing the methodological competence of future moral education teachers.

References

1. Anderson, L. W., & Krathwohl, D. R. (2001). A taxonomy for learning, teaching, and assessing. New York: Longman.
2. Biggs, J., & Tang, C. (2011). Teaching for quality learning at university. Maidenhead: Open University Press.
3. Bloom, B. S. (1984). Taxonomy of educational objectives. Boston: Allyn and Bacon.
4. Darling-Hammond, L. (2017). Teacher education around the world: What can we learn from international practice? European Journal of Teacher Education, 40(3), 291–309.
5. Eraut, M. (1994). Developing professional knowledge and competence. London: Falmer Press.
6. Fullan, M. (2007). The new meaning of educational change. New York: Teachers College Press.
7. Gibbs, G. (1988). Learning by doing: A guide to teaching and learning methods. Oxford: Oxford Polytechnic.
8. Hargreaves, A., & Fullan, M. (2012). Professional capital: Transforming teaching in every school. New York: Teachers College Press.
9. Kolb, D. A. (1984). Experiential learning. Englewood Cliffs, NJ: Prentice Hall.
10. Maslow, A. H. (1970). Motivation and personality. New York: Harper & Row.
11. Merrill, M. D. (2002). First principles of instruction. Educational Technology Research and Development, 50(3), 43–59.