THE THEORETICAL AND PRACTICAL FOUNDATIONS OF THE ACMEOLOGICAL–INTERACTIVE MODEL IN CHEMISTRY EDUCATION

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This article examines an acmeological–interactive model for chemistry education that integrates principles of professional and personal development (acmeology) with active, student-centered interactive learning. The model is conceptualized as a structured framework that supports learners' motivation, reflective thinking, collaboration, and conceptual understanding through purposeful instructional design. The paper outlines the model's theoretical basis and translates it into practical classroom mechanisms such as problem-based tasks, guided inquiry, dialogic learning, formative feedback, and reflective activities. The proposed approach aims to enhance both learning outcomes and learner agency in chemistry, bridging theory and classroom implementation. Contemporary chemistry education increasingly requires teaching approaches that go beyond content transmission and emphasize learners' active participation, meaningful communication, and higher-order thinking. At the same time, schools face persistent challenges such as declining motivation toward science subjects, fragmented conceptual understanding, and limited opportunities for students to develop autonomy and reflective competence. An acmeological perspective is relevant because it focuses on growth toward "peak development" through motivation, self-regulation, and reflective improvement, while interactive pedagogy provides the tools to operationalize these principles in real lessons. Therefore, developing and substantiating an acmeological–interactive model is timely for improving the quality and effectiveness of chemistry teaching in modern educational contexts. The purpose of this article is to substantiate the theoretical framework of an acmeological–interactive model in chemistry education and to identify practical principles, methods, and classroom strategies for its implementation. The study aims to clarify the model's key components (motivational, cognitive, activity-based, communicative, and reflective) and to propose an application pathway that supports learner development and stronger chemistry learning outcomes [1].

The novelty of this study lies in the development and substantiation of an integrated acmeological–interactive model specifically adapted to chemistry education. Unlike traditional instructional frameworks that treat personal development and interactive learning as separate components, the proposed model conceptualizes them as a unified pedagogical system. For the first time, acmeological principles such as learner self-realization, reflective growth, and motivation toward professional and cognitive maturity are systematically linked with interactive teaching strategies in chemistry lessons. The study also offers a structured set of model components and practical implementation mechanisms, enabling teachers to translate abstract acmeological concepts into concrete classroom practices [2].

The study demonstrates that the acmeological–interactive model provides a coherent theoretical and practical foundation for enhancing chemistry education. By combining personal development-oriented acmeological principles with interactive learning strategies, the model supports deeper conceptual understanding, sustained learner motivation, and reflective thinking. The findings suggest that implementing this model in chemistry lessons encourages active participation, collaborative learning, and learner autonomy, thereby improving both the quality of instruction and learning outcomes. The proposed framework can serve as a methodological guide for chemistry teachers and as a basis for further empirical research aimed at evaluating its effectiveness across different educational levels.

References

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