INTEGRATION OF PEDAGOGICAL CONGRUENCE AND PROJECT-BASED COMPETENCE: A MODERN MODEL FOR PRE-SERVICE TEACHER TRAINING

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Abstract: *The article analyzes the new requirements for the process of training future teachers in the context of the continuous modernization of the education system, the widespread introduction of electronic learning technologies, and the use of open interactive and multimedia educational resources. The purpose of the study is to scientifically substantiate the need to form project competence of future teachers in the educational environment of a higher educational institution and to identify important pedagogical aspects of this process.*

The article highlights the importance of modeling, forecasting and designing students' educational and cognitive activities, as well as planning the trajectory of personal professional development, in the professional activities of future teachers. Based on the requirements of regulatory legal acts on education policy, project competence is interpreted as an important component of modern pedagogical professional training.

The results of the analysis show that the potential of the educational environment in higher education institutions is not being used sufficiently and systematically to develop the project competence of future teachers. The organization of project activities disconnected from the interdisciplinary and

professional context leads to a lack of project skills in future teachers. The article substantiates the need for a comprehensive analysis of the structural components and resources of the higher education environment and the identification of a set of pedagogical conditions serving this process in order to effectively form the project competence of future teachers. The results of the study are of practical importance in improving the system of training pedagogical personnel.

Keywords: *future teacher, project competence, pedagogical congruence, educational environment, higher education, digital educational technologies, pedagogical conditions, reflective activity, interdisciplinary integration, pedagogical innovations, professional competencies, project activity.*

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Introduction. Currently, the educational reforms being implemented in our country place new and increasingly complex demands on future teachers. These demands require not only profound professional knowledge and pedagogical skills but also a high level of personal and psychological readiness. In particular, congruence—the ability reflecting the harmony between a teacher's personal qualities, internal emotional state, and external professional behavior—has emerged as one of the key factors determining the effectiveness of pedagogical activity. Therefore, the formation and development of congruence in future teachers is regarded as one of the most pressing issues in contemporary pedagogy.

In the context of modern society, one of the priority tasks facing the education system is to ensure that the professional abilities and pedagogical competencies of future teachers are formed in accordance with, and even exceeding, current societal demands. In this process, the congruence of abilities—namely, the harmonious and balanced development of a teacher's personal, professional, communicative, innovative, and creative capacities—acquires significant methodological and practical importance.

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Literature Review and Methodology. In scholarly literature, the concept of congruence is interpreted as the correspondence between an individual's inner experiences, values, and actual behavior. Within the pedagogical context, congruence is expressed in a teacher's ability to naturally, sincerely, and consistently manifest their thoughts, emotions, and pedagogical influence. A teacher possessing such qualities is capable of establishing trusting relationships with students, creating a positive psychological climate, and enhancing the effectiveness of educational and upbringing processes. The issue of pedagogical congruence has occupied an important place in the historical development of pedagogical thought, with its roots tracing back to the educational systems of ancient Eastern and Western civilizations. In the 7th–6th centuries BCE, the development of productive forces and positive changes in social life in Central Asia contributed to the intensification of cultural and educational interactions. As a result of pedagogical and cultural relations between Turkic and Persian peoples, distinctive educational approaches emerged that were adapted to local traditions and aimed at preparing the younger generation for independent life. Within this process, the harmony between the teacher's inner maturity and external pedagogical activity served as a crucial educational factor.

Eastern thinkers regarded the moral and spiritual maturity of the teacher as the primary condition for educational effectiveness. Abu Nasr al-Farabi emphasized the teacher's moral integrity and intellectual capacity as leading factors in the educational process. Abu Rayhan al-Biruni and Abu Ali ibn Sina asserted that the process of knowledge transmission yields high results only when it is harmonized with personal example, moral purity, and scientific consistency. In the works of Unsur al-Ma'ali Kaykavus, Alisher Navoi, and Abdurahman Jami, sincerity, moral responsibility, and personal leadership in teacher–student relationships are interpreted as essential criteria of pedagogical excellence. These views constitute the early theoretical foundations of

pedagogical congruence. Western pedagogical thought also paid special attention to the harmony between the teacher's inner qualities and professional activity. John Locke, Johann Heinrich Pestalozzi, and Adolf Diesterweg substantiated the idea that a teacher's personal example, ethical stance, and teaching style directly influence students' intellectual and moral development. Within their approaches, pedagogical congruence is viewed as a factor ensuring the internal logical integrity of the educational process.

Representatives of the Russian pedagogical school, particularly Konstantin Ushinsky, further developed these ideas, identifying the teacher's personality and professional mastery as decisive factors in education. According to Ushinsky, no law, methodology, or curriculum can replace the teacher's personal competence and inner conviction. This view reveals the social and practical significance of pedagogical congruence. In contemporary pedagogical research, this issue remains highly relevant. Viktor Slastenin emphasizes that pedagogical mastery is formed through the integration of theoretical knowledge and practical activity. According to his approach, the pedagogical process becomes purposeful and effective only when it is organized on the basis of the synthesis of philosophy, pedagogy, and psychology. This allows congruence to be interpreted as an integral component of a teacher's professional competence. Organizing pedagogical activity on philosophical and psychological principles fosters harmony between internal states and external behavior, values and practical actions, emotions and communicative culture.

Congruence, as a central characteristic of a facilitator teacher, ensures professional maturity, personal stability, and dialogical interaction. In the process of personal and professional development, congruence manifests itself through the following dimensions:

1. **Congruence and the Teacher's Personal Potential.** Personal potential represents the harmony of a teacher's internal resources, values,

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intellectual, emotional, and volitional capacities. Congruence enables the full realization of this potential, elevates pedagogical activity to a higher professional level, ensures effective and stable communication, and strengthens self-awareness, self-acceptance, and self-regulation. A congruent teacher does not create contradictions between inner emotions, beliefs, and actions but coordinates them coherently.

2. **Congruence and Facilitative Activity.** The primary task of a facilitator teacher is to support the learner's personal development, independence, and creative potential. Congruence forms the foundation of this task, fostering dialogical readiness, empathy, tolerance, active listening, and benevolent interaction. A congruent teacher demonstrates sincerity, consistency, and authenticity in relations with learners, acknowledging their thoughts, questions, and individual needs.

3. **Impact on Learners' Creative Development.** A congruent teacher creates conditions for the development of learners' independent thinking, decision-making, responsibility, curiosity, and creative initiative. Such a teacher supports autonomy, welcomes unexpected questions, avoids excessive restrictions, and applies the principle of "at least once—yes," maintaining flexibility and balance. In this process, the teacher also acts as a creative individual, shaping a supportive creative environment.

4. **Internal Psychological Mechanisms of Congruence.** The pursuit of congruence stimulates continuous reflection and self-improvement in teachers. This manifests in the ability to view oneself from new perspectives, recognize and accept emotions, enhance self-confidence and emotional stability, set realistic goals, consciously regulate behavior, abandon destructive habits, and develop empathy and understanding toward others. These changes indicate the integration of the teacher's inner and outer worlds and the attainment of congruence.

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5. The Congruent Teacher as a Pedagogical Ideal. A congruent facilitator teacher embodies spiritual maturity, humanism, creativity, inner stability, and psychological well-being. Such teachers strive for continuous self-development and help learners overcome internal and external barriers that hinder creative expression.

Under current conditions, the demand for competitive teaching professionals has significantly increased. Modern educators must possess not only professional knowledge but also complex competencies enabling the development and implementation of innovative projects. This trend necessitates the development of project-oriented functions in future teachers' professional activities. Alongside modeling, forecasting, and designing students' learning activities, teachers must also consciously plan their own professional development trajectories. In pedagogical science, this set of abilities is regarded as a means of effectively addressing project-based professional tasks. The relevance of this issue is also confirmed by state-level regulatory documents, which emphasize the necessity of forming competencies such as systemic and critical thinking, project development and implementation, and the design of basic and supplementary educational programs. This further intensifies the need for systematic and purposeful development of project competence in higher education environments. At the same time, current pedagogical training practices often fail to fully utilize the potential of the higher education environment in shaping future teachers' project competence. Many educators do not systematically employ the resources of the educational environment and lack a holistic understanding of its capabilities. As a result, project competencies are frequently developed only within individual subjects, detached from the context of future pedagogical activity. This fragmentation and lack of systemic integration lead to deficiencies in project skills, negatively affecting the quality and effectiveness of pedagogical activity in both real and virtual educational spaces. The above

considerations necessitate a comprehensive analysis of the structural components and resources of the higher education environment from the perspective of project competence formation. This issue becomes particularly acute in regions where teachers operate within multicultural social contexts. The mismatch between policy-level requirements and the actual capabilities of the higher education environment underscores the need for scientifically grounded pedagogical solutions. Accordingly, identifying and scientifically substantiating a set of pedagogical conditions that effectively foster project competence in future teachers is defined as one of the key objectives of the present study (Figure 1).

Figure 1. Model for Developing Project Competence of Future Teachers in the Higher Education Environment

Results and Discussion. This section substantiates the effectiveness of a set of pedagogical conditions aimed at developing project competence in future teachers, based on the results of an empirical study. The experimental

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research was conducted within the educational environment of a higher education institution and was organized using a **quasi-experimental research design,** which allowed for a comparative analysis of the obtained results under controlled educational conditions.The experimental work involved undergraduate students majoring in pedagogy from the **second to fourth years of study.** The total sample size consisted of **60 students**, who were divided into two groups: an **experimental group (30 students)** and a **control group (30 students).** The groups were carefully balanced in terms of age, year of study, and overall academic preparedness to ensure the reliability and validity of the research results.

The experimental research was carried out in **three consecutive stages:**

1. **Diagnostic Stage (Pre-test)** At this stage, the initial level of project competence among future teachers was assessed. Diagnostic tools were used to identify students' baseline competencies related to project planning, implementation, reflection, and interdisciplinary integration. The results indicated that most participants demonstrated low to medium levels of project competence, highlighting the need for targeted pedagogical intervention.

2. **Formative Stage**. During the formative stage, the developed set of pedagogical conditions was systematically implemented in the experimental group. These conditions included the integration of project-based learning, interdisciplinary collaboration, reflective activities, and the use of innovative educational technologies within the higher education learning environment. The control group continued to study under traditional instructional methods without the introduction of the experimental pedagogical conditions.

3. **Control Stage (Post-test)**. At the final stage, a post-test was conducted to identify changes in the level of project competence among students in both groups. Comparative analysis of the pre-test and post-test results made it possible to determine the effectiveness of the implemented pedagogical conditions. The findings revealed a statistically significant

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improvement in project competence indicators among students in the experimental group, while changes in the control group were minimal.

Overall, the results demonstrate that the purposeful integration of pedagogical conditions within the higher education environment significantly enhances the development of project competence in future teachers. The findings confirm that project-based learning, supported by reflective and interdisciplinary approaches, contributes to the formation of key professional competencies required for effective pedagogical practice in modern educational contexts.

Statistical Analysis Results. To evaluate the effectiveness of the proposed pedagogical conditions aimed at developing project competence in future teachers, a comparative statistical analysis of pre-test and post-test results was conducted for both the experimental and control groups. Project competence was assessed across three levels: low, medium, and high.

Table 1. Distribution of Project Competence Levels Before the Experiment (Pre-test)

Group	Low Level (%)	Medium Level (%)	High Level (%)
Experimental Group (n=30)	46.7	40.0	13.3
Control Group (n=30)	43.3	43.3	13.4

Table 2. Distribution of Project Competence Levels After the Experiment (Post-test)

Group	Low Level (%)	Medium Level (%)	High Level (%)
Experimental Group (n=30)	16.7	36.6	46.7

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Control Group (n=30)	36.7	46.6	16.7

Conclusion. The findings of this study demonstrate that the development of project competence in future teachers is a complex and multidimensional process that requires purposeful pedagogical support within the higher education environment. The results of the quasi-experimental study confirm that the systematic integration of project-based learning, interdisciplinary collaboration, reflective practices, and innovative educational technologies significantly enhances the level of project competence among future teachers. The experimental data indicate that students who participated in the formative stage showed marked progress in key components of project competence, including project planning, problem-solving, reflective thinking, and professional self-regulation. In contrast, the control group demonstrated only minor and statistically insignificant changes. Overall, the study confirms that project competence should be regarded as a core component of professional pedagogical competence.

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