eISSN: 2229-3213 pISSN: 2229-3205
The Journal of Applied Science and Social Science
Volume 16,Issue 06 June, 2026

# A MODEL FOR DEVELOPING PROSPECTIVE TEACHERS' COMPETENCE IN INSTRUCTIONAL DESIGN THROUGH THE INTEGRATION OF WEB PLATFORMS

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**Abstract:** This article refines the literature analysis and model for using web platforms in developing students' competence in lesson design, highlighting the methodology for their use.

**Keywords**: information, educational environment, web platform, metacognitive, platform, didactic, organizational-managerial, creative approach, education, system, critical thinking, model.

Currently, digital technologies are extensively integrated into educational systems worldwide. This trend necessitates the effective utilization of modern web platforms in enhancing the professional training system of pre-service teachers.

The use of web platforms in the professional development of prospective teachers plays a significant role in improving their ability to organize professional activities effectively, fostering metacognitive awareness, and developing competencies related to the efficient use of digital technologies. Consequently, the importance of integrating web platforms into teacher education programs aimed at preparing educators who meet contemporary educational requirements is becoming increasingly evident.

A number of studies have focused on improving the professional competence of future teachers through digital technologies. In particular, G.T. To‘rayeva [1] emphasized that the pedagogical opportunities for developing students' independent learning activities based on a competency-based approach should be enhanced through didactic, organizational-managerial, and creative approaches. The author also highlighted the importance of adapting the principles of independent learning, critical thinking, profession-oriented and practice-based instruction, as well as the stages of working within an information and educational environment.

Similarly, J.S. Otepbergenov [2] argued that the application of schematic and visual models for presenting information within an information and educational environment contributes to increasing the intensity and effectiveness of students' acquisition of new knowledge and practical experience.

At present, various forms, methods, and instructional tools are employed in the professional preparation of future teachers. However, the analysis of our observations indicates that the effective development of instructional design competence among prospective teachers requires the integration of modern web platforms into the educational process.

In this regard, it is essential to develop a model for the use of web platforms in enhancing students' competence in designing learning activities. Therefore, within the framework of this study, a model aimed at improving the effectiveness of organizing and conducting instructional activities was developed (see Figure 1).

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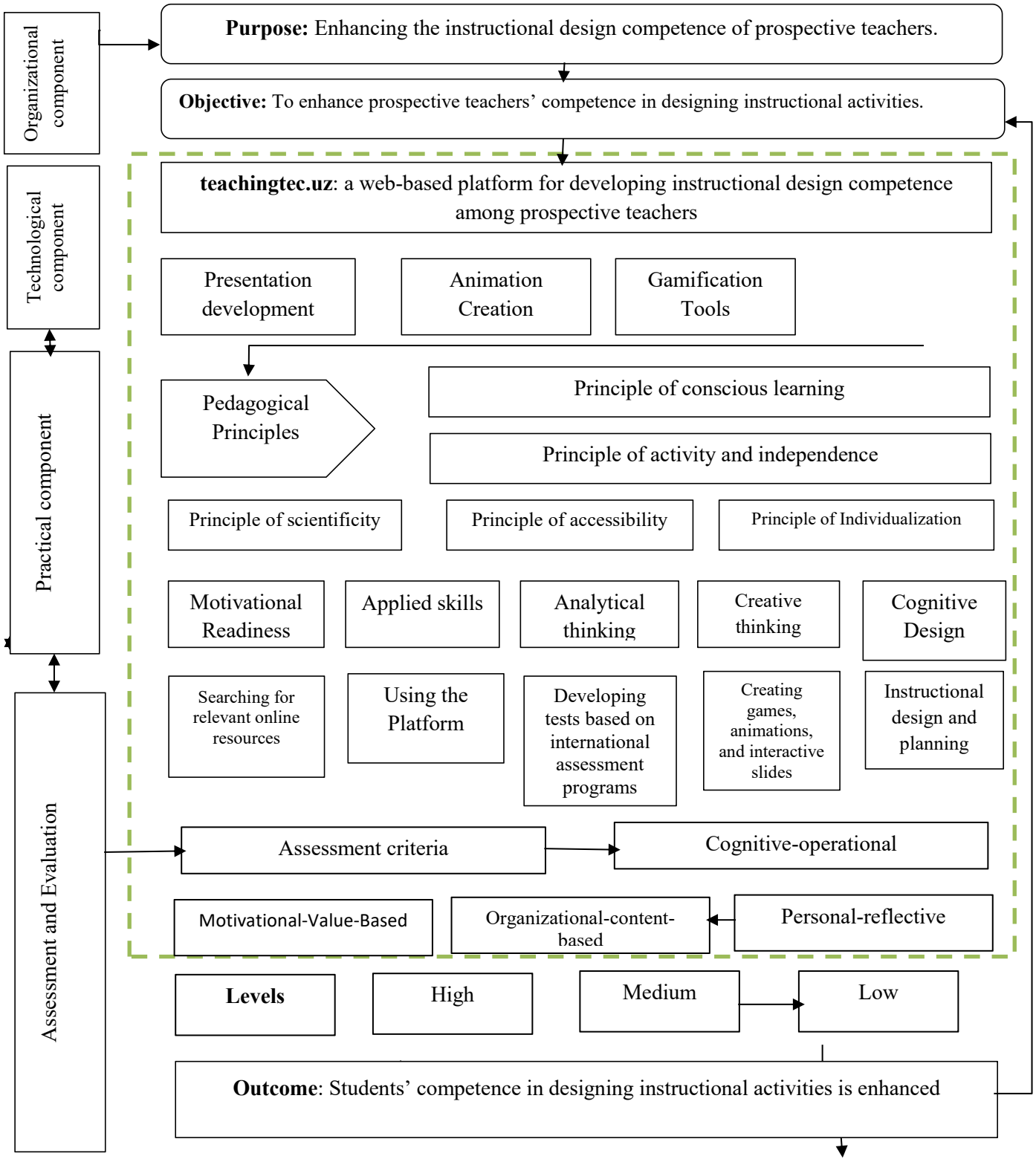


**Figure 1. Conceptual Model for Enhancing the Effectiveness of Organizing Instructional Activities.**

The proposed model is aimed at enhancing pre-service teachers' instructional design competence through the effective use of web-based platforms. The model consists of four interrelated components: the organizational component, the technological component, the

implementation component, and the monitoring and evaluation component.

The organizational component focuses on improving students' instructional design competence and fostering pre-service teachers' creative abilities and practical skills related to the design and organization of instructional activities.

The technological component presents the capabilities of the Teachingtec.uz platform, which has been specifically designed to support the development of students' instructional design competence through the integration of digital technologies and web-based learning resources.

The practical component is intended to enhance the effectiveness of pre-service teachers' professional activities. This component is based on a set of pedagogical principles that guide the instructional design process, including the principles of scientificity, accessibility, individualization, conscious learning, activity, and independence.

The **principle of scientificity** requires the provision of scientifically grounded and empirically validated knowledge. The selection and presentation of instructional content should reflect contemporary scientific achievements and technological innovations. This principle emphasizes the necessity of relying on credible scientific sources when organizing instructional activities. According to U.M. Mirsanov [3], A.B. Jonazkov [4], and V.A. Krasilnikova [5], the principle of scientificity ensures the reliability and effective presentation of educational content based on the latest scientific developments and research findings. In the context of teaching Python programming, this principle requires introducing learners to scientific facts, laws, theoretical foundations, and key concepts while establishing meaningful connections between theoretical knowledge and real-life applications.

The **principle of accessibility** emphasizes that instructional content should correspond to learners' age, prior knowledge, and intellectual capabilities. Tasks and learning materials should be presented in a clear, concise, and unambiguous manner, while complex terminology should be accompanied by appropriate explanations. As noted by A. Diesterweg, ensuring the accessibility of educational materials is one of the most important responsibilities of educators.

The **principle of individualization** requires taking into account the unique characteristics, abilities, interests, and learning needs of each learner. Educational activities should be organized based on a thorough understanding of learners' individual differences. In this regard, N.V. Petrovskiy emphasized that the principle of individualization occupies a central position in modern education, arguing that teaching highly gifted and low-achieving learners within the same instructional framework may hinder the development of both groups [6].

The **principle of conscious** learning highlights the active participation of learners in the educational process. Students should be capable of expressing their opinions independently and acquiring knowledge consciously and purposefully. K.D. Ushinskiy argued that education cannot become genuine knowledge unless it influences the learner's consciousness. Therefore, students should consciously assimilate knowledge and learn to apply it in practical situations.

The **principle of activity and independence** promotes learners' active engagement in acquiring scientific knowledge and applying it in practice. This principle contributes to the development of creative initiative, independent thinking, communication skills, and cognitive autonomy. Conscious learning in the educational process implies understanding learning objectives, comprehending relationships among facts, phenomena, and processes, and applying acquired knowledge effectively in practical contexts.

Furthermore, the implementation component includes a sequence of developmental stages aimed at fostering pre-service teachers' motivation, practical skills, logical thinking, creative thinking, and instructional design-related cognitive abilities. Initially, pre-service teachers are encouraged to identify relevant online resources and acquire practical skills in using web-based platforms. The development of logical thinking is supported through the design of assessment tasks aligned with international assessment programs. Creative thinking is fostered through

activities involving the creation of educational games, animations, and multimedia presentations. Ultimately, pre-service teachers develop instructional design-related cognitive abilities through the preparation of lesson plans and instructional materials.

The assessment and evaluation component includes assessment criteria, evaluation procedures, and achievement levels designed to measure the effectiveness of competence development. The model concludes with the expected outcomes to be achieved through its implementation.

The assessment framework consists of four dimensions: cognitive-operational, motivational-value-based, organizational-content-based, and personal-reflective.

The **cognitive-operational** dimension evaluates not only the level of professional knowledge possessed by pre-service teachers but also the effectiveness of applying that knowledge in instructional practice. Through continuous analysis of what they know and how effectively they utilize this knowledge, pre-service teachers engage in cognitive-operational self-assessment.

The **motivational-value-based** dimension focuses on identifying pre-service teachers' professional interests, motivation, values, and attitudes toward the teaching profession.

The **organizational-content-based** dimension assesses pre-service teachers' ability to plan, organize, and enrich the content of the educational process.

The **personal-reflective** dimension evaluates pre-service teachers' capacity to analyze their professional activities, assess their strengths and weaknesses, monitor their professional growth, and demonstrate a commitment to continuous self-improvement.

Achievement levels are classified as high, medium, and low.

Based on the aforementioned pedagogical principles, the proposed model is designed to enhance students' instructional design competence and facilitate the development of practical skills necessary for effective professional practice in contemporary educational environments.

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