MAIN FORMS OF DESIGNING TEACHER ACTIVITY

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Abstract: This article provides a scientific and theoretical analysis of modern forms of designing teacher activity and their role in the integrated educational process. It examines the content, didactic potential, and significance - for the development of future educators' methodological preparedness - of various design approaches, including interdisciplinary integration, modular design, project-based learning (PBL), STEAM, problem-based learning, collaborative learning, digital approaches, competency-based design, and reflective design. Furthermore, the article substantiates the role of these approaches in effectively organizing integrated lessons in primary education, fostering 21st-century competencies in students, enhancing the efficiency of the educational process, and improving pedagogical design. The research findings indicate that scientifically grounded design of teacher activity is a crucial factor in improving the quality of education, implementing innovative pedagogical technologies, and developing the professional competence of future educators.

Keywords: designing teacher activity, pedagogical design, lesson integration, interdisciplinary integration, modular education, project-based learning (PBL), STEAM education.

The modernization of the education system, the implementation of a competency-based approach, and the improvement of primary education content in accordance with international standards have significantly increased the importance of scientifically designing teacher activity. A modern teacher is no longer merely a specialist who conducts lessons but also a designer of the educational process, a manager of innovative practices, and a facilitator of students' personal development. Therefore, teacher activity is designed on the basis of various methodological approaches. Each of these approaches provides important pedagogical opportunities for integrating educational content, effectively organizing learning activities, and achieving the expected learning outcomes.

Interdisciplinary integrated design. One of the most important forms of designing teacher activity is interdisciplinary integrated design. This approach involves integrating the content, methods, and competencies of different academic subjects based on a unified didactic objective. As a result of

integrated design, students acquire not only subject-specific knowledge but also an understanding of the relationships among different disciplines and develop the ability to apply their knowledge in real-life situations [6].

In primary education, it is possible to organize enriched lessons by integrating subjects such as the native language and mathematics, reading literacy and science, technology and visual arts, as well as mathematics and computer science. For example, while solving mathematical problems, students simultaneously develop text analysis, logical thinking, and communication skills. Likewise, integrating science with reading literacy contributes to the development of students' abilities to understand scientific texts, conduct observations, and draw evidence-based conclusions [7].

From a pedagogical perspective, interdisciplinary integrated design enables teachers to identify connections among curriculum components, define both general and subject-specific competencies, develop common assessment criteria, and comprehensively plan learning outcomes. Consequently, the integrity of lesson content is ensured, overlapping topics are minimized, and the practical value of education for students is enhanced.

Modular design. Modular design occupies a special place among modern pedagogical technologies. A module is regarded as a complete didactic system consisting of interconnected objectives, content, teaching methods, learning tasks, assessment criteria, and a final product. Within this approach, learning materials are organized not according to separate topics but around a specific problem or central idea.

For example, a module entitled **“Protecting nature”** may integrate reading literacy, the native language, science, technology, and visual arts within a single environmental theme. Students read environmental texts, observe natural phenomena, prepare projects on waste recycling, and create ecological posters. At the end of the module, they produce a comprehensive outcome such as a project, presentation, or creative work.

The main advantage of modular design is that it supports students’ independent learning, facilitates differentiated instruction, and enables the effective implementation of a competency-based approach [5].

Project-based learning (PBL) design. Project-Based Learning (PBL) is one of the modern pedagogical technologies developed on the basis of constructivist learning theory. Within this approach, students’ active learning process is organized through solving real-world problems. When planning project activities, the future teacher first identifies the problem, defines the project objectives, develops interdisciplinary tasks, selects the necessary resources, and plans both the final product and the assessment criteria [4].

For example, within the project **“Water - the source of life”,** students read scientific texts about water resources, perform mathematical calculations related to water consumption, analyze environmental issues, and prepare a digital presentation or infographic. Throughout this process, reading literacy, the native language, mathematics, science, and computer science are integrated. The project method is highly effective in developing students’ critical thinking, problem-solving abilities, creativity, collaboration, and communication competencies.

STEAM-based design. Today, the STEAM model is widely implemented in educational systems around the world. It integrates Science, Technology, Engineering, Arts, and Mathematics into a unified learning environment. This model is based on connecting theoretical knowledge with practical application [3].

In primary education, STEAM-based design is implemented through construction activities, modeling, simple experiments, elements of robotics, creative projects, and hands-on tasks. For example, while constructing a bridge model, students study geometric shapes, observe the effects of weight and load, use technological materials, and decorate the finished product aesthetically [1].

During this process, the teacher creates problem situations, selects appropriate learning resources, organizes group work, and evaluates the final product according to predetermined criteria. As a result, students develop creative thinking and engineering skills.

Problem-based design. Problem-based learning focuses on organizing students' independent inquiry, where the lesson is centered not on ready-made knowledge but on a scientific problem. The teacher creates a problem situation that stimulates students' curiosity and actively involves them in the problem-solving process. For example, the question **“Why do trees shed their leaves in autumn?”** provides opportunities to integrate science, the native language, reading literacy, and visual arts. Students conduct observations, analyze scientific texts, express their ideas both orally and in writing, and complete creative tasks related to the topic.

This approach promotes the development of students’ analytical thinking, scientific inquiry skills, and the ability to draw evidence-based conclusions.

Collaborative design. Collaborative design (Collaborative Learning) is an essential component of modern pedagogical technologies, emphasizing the organization of the educational process through teamwork. Within this approach, teacher candidates or students work in small groups, develop integrated lesson plans, distribute responsibilities, and engage in peer evaluation and reflection.

For future teachers, such activities play a significant role in developing professional competencies. In particular, collaborative design enhances communication skills, leadership abilities, responsibility, teamwork, conflict management, and reflective thinking. Moreover, it helps establish the professional culture required for effective collaboration within school communities.

Digital pedagogical design. In the era of digital transformation, designing pedagogical activities requires the effective use of information and communication technologies (ICT). Digital pedagogical design aims to organize every stage of the lesson through modern electronic tools.

Future teachers create integrated learning environments by using interactive presentations, virtual laboratories, electronic portfolios, online assessments, QR code-based tasks, digital maps, multimedia resources, and artificial intelligence technologies. In addition, Learning Management Systems (LMS), cloud-based technologies, and electronic learning resources support students' independent learning, automate assessment processes, and facilitate the development of individualized learning pathways. As a result, the educational process becomes significantly more flexible, interactive, and effective.

Competency-based design. Competency-based design is one of the principal methodological directions of modern education. Rather than focusing solely on knowledge acquisition, this approach emphasizes the development of students' ability to apply knowledge effectively in practical situations. Therefore, when planning every integrated lesson, teachers first determine the competencies that students are expected to develop, including communication, information literacy, social and civic responsibility, critical thinking, creativity, and collaboration.

Learning activities are then organized around tasks specifically designed to foster these competencies. Assessment criteria are likewise based on students' practical performance, their ability to solve problems, and the extent to which they demonstrate the targeted competencies.

Reflective design. Reflective design is aimed at the continuous improvement of pedagogical practice by encouraging teachers to regularly analyze and refine their professional activities. Through reflection, teachers identify the strengths and weaknesses of their lessons, evaluate the effectiveness of the teaching methods they have employed, and develop new strategies for future instruction. Reflective design generally consists of five stages: observation, analysis, evaluation, improvement, redesign.

This cycle is repeated continuously, contributing to the systematic

development of teachers' professional competence. Particularly in organizing integrated lessons, reflection enables educators to analyze the effectiveness of interdisciplinary connections, monitor changes in students' competencies, and evaluate the overall quality of learning outcomes.

In conclusion, interdisciplinary integrated design, modular design, project-based learning, STEAM-based design, problem-based learning, collaborative design, digital pedagogical design, competency-based design, and reflective design constitute interconnected components of modern pedagogical practice [2].

The effective integration of these approaches plays a vital role in strengthening the methodological preparedness of future teachers, organizing integrated lessons successfully, developing students' 21st-century competencies, and improving the overall quality of education. Furthermore, pedagogical design based on an integrated approach enhances teachers' innovative potential, transforms students into active participants in the learning process, and contributes to achieving the strategic goals of contemporary education.

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