



IMPROVING THE METHODOLOGY FOR DEVELOPING STUDENTS' CREATIVE COMPETENCE IN THE CONTEXT OF DIGITAL TECHNOLOGIES

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Abstract: *The article examines the pedagogical foundations for improving the methodology of developing students' creative competence in the context of digital technologies. The relevance of the study is explained by the tasks set out in the Concept for the Development of Higher Education in Uzbekistan until 2030, the "Digital Uzbekistan – 2030" Strategy, and the Development Strategy of New Uzbekistan [1–3]. For the theoretical analysis, approaches developed within UNESCO, OECD, and DigCompEdu were examined [4–11]. As a result, an improved methodological model was developed that integrates motivational, cognitive, practical-activity, collaborative, reflective, and assessment components. The model brings project-based learning, problem-oriented tasks, e-portfolios, digital collaboration, formative assessment, and reflection into a unified process. The article substantiates the stages of the methodological model, its criteria, pedagogical conditions, and learning outcomes in detail. The proposed approach is aimed at turning the digital environment from a means of transmitting ready-made information into a space for generating ideas, solving problems, producing educational products, and self-assessment.*

Keywords: *digital education, creative competence, higher education, pedagogical methodology, project-based learning, problem-based learning, e-portfolio, formative assessment, reflection, digital tools.*

INTRODUCTION

Today, digital transformation in higher education is reshaping not only the ways information is delivered, but also educational goals, learning outcomes, and approaches to assessment. Presidential Decree No. PF-5847 of the Republic of Uzbekistan identifies improving the quality of higher education, strengthening innovation, and training competitive specialists among the priority directions for the development of higher education until 2030 [1]. Likewise, the “Digital

Uzbekistan – 2030” Strategy approved within the framework of Presidential Decree No. PF-6079 defines the development of digital education as a separate strategic direction [2]. These policy documents require digital technologies in higher education to be viewed not simply as technical tools, but as pedagogical factors capable of renewing the content of education.

To function successfully in the digital environment, a student should not remain merely a seeker of information or



a user of ready-made resources. A student should be able to generate new ideas, examine a problem from different perspectives, create content with the help of digital tools, and improve the product created. UNESCO interprets digital competencies as an important condition for active participation in society, lifelong learning, and employability [4]. UNESCO's global approach to digital literacy encompasses such areas as working with information and data, communication, content creation, safety, and problem solving [5]. Therefore, in higher education, the development of creative competence should be considered in close connection with digital competencies.

According to the OECD interpretation within PISA 2022, creative thinking is understood as the competence to generate original and diverse ideas, to evaluate them, and to improve them [9–11]. This approach does not limit creativity to artistic or intuitive activity alone; on the contrary, it explains creativity as a skill manifested in different contexts, including written expression, visual expression, social problem solving, and scientific problem solving [10]. Thus, the development of creative competence through digital technologies is relevant for all fields of professional training and is especially important for future teachers: they must become creative specialists themselves and later cultivate this quality in their own students.

The practical problem is that in many classrooms the use of digital tools

still remains at the level of showing presentations, exchanging files, or working with ready-made materials. In such a situation, the student turns not into an active subject of learning, but into an object receiving information. As a result, even when digital technologies are present, creativity, independent decision-making, and reflection do not develop sufficiently. The UNDP study on Uzbekistan's digital economy also identifies the expansion of digital education and digital skills as a priority area for the country [12]. From this perspective, revisiting the methodology for developing students' creative competence and improving it in line with the capabilities of the digital environment is both a scientific and practical necessity.

The purpose of the article is to develop a pedagogical model that contributes to improving the methodology for developing students' creative competence in the context of digital technologies and to substantiate its structural components. To achieve this goal, the following tasks were set: to identify the pedagogical content of creative competence; to analyze the didactic possibilities of the digital learning environment; to develop an improved methodological model; and to describe assessment criteria and pedagogical conditions.

Research Methods

The study has a theoretical-analytical and design-oriented character. It employed methods of systems analysis, comparative analysis, content analysis,



pedagogical modeling, and the competency-based approach. The sources of the study included the normative documents of the Republic of Uzbekistan concerning higher education and digital development, the official materials of UNESCO and the OECD on digital competence and creative thinking, as well as scientific and methodological sources within the DigCompEdu framework [1–12]. This approach made it possible to consider the problem at different levels—state policy, the education system, teacher activity, and student outcomes.

As the methodological basis of the study, the competency-based approach, the activity-oriented approach, and student-centered learning principles were selected. The competency-based approach makes it possible to analyze creativity not as a set of isolated skills, but as an integrated result of knowledge, abilities, values, motivation, and experience. The activity-oriented approach assumes that students' creativity develops in the process of completing tasks, especially when solving ambiguous, open-ended, and multi-option assignments. Within the student-centered approach, the teacher acts not as a transmitter of knowledge, but as a facilitator, moderator, and mentor.

During pedagogical modeling, criteria for selecting digital technologies were also defined. First, the tool must serve the purpose; in other words, the technology should strengthen the creative essence of the task. Second, the tool should support collaboration, since many

creative ideas become richer through communication, peer analysis, and collaborative design. Third, the tool should be convenient for reflection and for presenting outcomes. Fourth, the tool must not contradict information security, academic integrity, or ethical standards. UNESCO's recommendations on AI in education also emphasize the need to introduce technology on the basis of a human-centered approach [7; 13].

In structuring the results of the study, the following analytical units were used: components of creative competence, their indicators, didactic tools, stages of learning, assessment criteria, and pedagogical conditions. On this basis, an improved methodological model was developed. This model does not represent empirical experimental findings, but rather a methodological solution designed through the synthesis of existing scholarly sources and practical needs. Therefore, the "Results" section of the article focuses on the structure of the methodological model, its practical algorithm, and its expected pedagogical effects.

Research Results

As a result of the analysis, an improved methodological model aimed at developing students' creative competence through digital technologies was developed. This model consists of six interrelated blocks: a target block, a content block, a process block, a digital tools block, an assessment block, and a reflective block. The key idea of the model is that in the digital environment



the student should appear not as a reproducer of knowledge, but as a subject who analyzes problems, proposes original solutions, and improves the product they create.

In the target block, the following qualities were defined as outcomes of creative competence development: the speed and flexibility of idea generation, the ability to view a problem through

different approaches, purposeful use of digital tools for content creation, collaboration, analysis of one's own activity, and its improvement. The content block, alongside the subject matter itself, also includes digital literacy, media and information handling, presentation culture, academic integrity, and ethical responsibility.

Table 1. Components of creative competence and assessment criteria

| Component | Content | Main indicators | Assessment level |
|--------------------|---|---|-------------------|
| Motivational | The student's interest in creating something new and the inner need for novelty | Showing initiative, asking questions, interest in the problem | Low, medium, high |
| Cognitive | Knowledge of creative thinking, digital literacy, and information analysis | Selecting sources, substantiating ideas, transforming content | Low, medium, high |
| Practical-activity | Creating products and solving problems with the help of digital tools | Original solution, product quality, functionality | Low, medium, high |
| Collaborative | Working in a team, exchanging ideas, and taking peer opinions into account | Communication, task distribution, collaborative decision-making | Low, medium, high |
| Reflective | Analyzing and improving one's own activity | Self-assessment, working on mistakes, accepting suggestions | Low, medium, high |

As Table 1 shows, it is not enough to assess creative competence only through the final product. It is a multidimensional outcome that encompasses motivation, cognition, practical activity, collaboration, and reflection. Therefore, assessment should be not only summative, but also formative in character. While completing an assignment, the student should receive interim feedback, peer assessment, and

teacher recommendations, and then revise the product accordingly.

The process block was structured into four stages: diagnosis and orientation, creative design, digital product creation, and presentation with reflection. At the diagnosis stage, the student's current digital and creative capacities are identified, and the goals and criteria of the task are clarified. At the creative design stage, a problem situation is introduced, students generate



ideas, compare alternatives, and choose a solution concept. At the third stage, this concept is transformed into a digital product. At the final stage, the product is

defended, reflection is conducted, and directions for improvement are identified.

Table 2. Stages of the improved methodology and their practical content

| Stage | Pedagogical activity content | Digital tools and outcomes |
|-----------------------------|--|---|
| Diagnosis and orientation | A problem is posed, the initial level is identified, and criteria are explained. | Questionnaire, diagnostic task, digital test, observation sheet. |
| Creative design | Generation of ideas, analysis of alternatives, preparation of a project plan. | Brainstorming, concept map, digital whiteboard, collaborative document. |
| Product creation | A text, video, infographic, presentation, podcast, or mini-project is prepared. | Editors, presentation tools, graphic and media services, e-portfolio. |
| Presentation and reflection | The outcome is defended; peer assessment, self-assessment, and revision are carried out. | Digital rubric, comments, video recording, reflection journal. |

In the proposed methodology, the type of assignments is also of particular importance. Digital tasks that develop creativity should be open-ended, multi-option, and product-oriented. For example, instead of simply asking a student to read and retell a text, the teacher may assign the student to create a cause-and-effect model of a problem, record a video recommendation, write a podcast script, prepare an infographic, develop a digital prototype of a lesson plan, or propose a media campaign concept aimed at solving a social problem. In such tasks there is no single “correct answer”; assessment is based on originality, substantiation, relevance, and quality of presentation.

The assessment block recommends the use of an analytical rubric. The rubric should include such criteria as originality of the idea, logical structure of the content, purposeful use of digital tools, level of team participation, presentation

quality, and depth of reflection. Providing described levels for each criterion helps students clearly understand the expected outcome. This method increases the transparency of assessment, strengthens students’ self-regulation skills, and encourages creative risk-taking.

The reflective block was considered not as a final element, but as a continuous one. After each task, the student responds in written or oral form to questions such as “What did I create?”, “Why did I choose this solution?”, and “How can I improve it further?” A digital portfolio, reflection journal, and peer comments help to organize this process systematically. As a result, the student not only produces a product, but also begins to understand their own trajectory of creative development.

DISCUSSION

The proposed methodological model was developed in harmony with international and national approaches.



UNESCO views digital competencies as a necessary condition for participation in society, employment, and lifelong learning, while also emphasizing that human agency, critical thinking, and ethical responsibility must remain at the center of education [4; 7; 13]. Therefore, in developing students' creative competence, technology should not become an end in itself, but should serve meaningful educational activity. The model proposed in this article is based precisely on this principle.

The DigCompEdu perspective shows that teachers' digital competence is directly linked to educational quality [8]. Even if a teacher knows how to use digital tools efficiently, the expected pedagogical outcome will not emerge unless those tools are didactically designed and connected with assessment and reflection. For this reason, the methodology for developing students' creativity must be considered together with the teacher's digital-pedagogical readiness. This is especially relevant in teacher education programs, because today's student will become tomorrow's teacher and will transmit this experience to the next generation.

OECD materials identify classroom practices that support creative thinking as an important factor [9–11]. When open-ended tasks, freedom of expression, an environment unafraid of mistakes, and a willingness to accept different solutions are present, students' creative potential is expressed more actively. Thus, the improved methodology is not merely a set

of tools, but also a way of reorganizing the pedagogical environment. In such an environment, the central value is not "finding the ready-made answer," but "creating a reasoned new solution."

Another important issue in the discussion concerns the growing presence of generative artificial intelligence and automated text generation tools in education. In its 2023 guidance, UNESCO emphasizes the need to ensure human-centeredness, transparency, academic integrity, and the protection of learners' rights when using generative AI [13]. Therefore, in the proposed methodology, AI tools are interpreted not as resources to be prohibited, but as resources to be used consciously, ethically, and critically. For example, a student may use AI support to generate an initial list of ideas, but the authorship position of the final product, its justification, reflection, and revision must belong to the student.

The practical effectiveness of the methodology depends on several pedagogical conditions. First, assignments should be meaningfully connected with real-life problems. Second, the teacher should create sufficient time, resources, and interim feedback opportunities for creative tasks. Third, the assessment process should encompass not only the final result, but the entire creative process. Fourth, students should develop a culture of digital safety, correct citation of sources, and avoidance of plagiarism. Only when these conditions are met do digital



technologies become not a mechanical factor, but a genuinely developmental one for creativity.

Thus, the discussion shows that improving the methodology for developing students' creative competence takes place on three levels: at the first level, the digital culture of teachers and students is strengthened; at the second level, learning tasks are redesigned to match creative activity; and at the third level, the system of assessment and reflection is renewed. This triad ensures the stability of the pedagogical process and supports the systematic, rather than accidental, integration of digital tools into education.

CONCLUSION

In conclusion, improving the methodology for developing students' creative competence in the context of digital technologies is one of the important tasks of modern higher education. The methodological model developed in the study interprets creativity as an integrated result of motivation, knowledge, practical activity, collaboration, reflection, and assessment.

This approach makes it possible to transform the digital learning environment from a space for distributing ready-made information into an interactive, productive, and personally developmental creative environment.

The practical value of the improved methodology lies in the fact that it enables the teacher to redesign the content of instruction on the basis of creative assignments, and it enables students to create new content through digital tools, substantiate their own ideas, and assess them. Project-based learning, e-portfolios, digital collaboration, analytical rubrics, and reflection journals were proposed as the core elements of this methodology.

In the future, it would be appropriate to pilot this model across different disciplines and courses, to refine diagnostic indicators for each component, and to define the methodological boundaries of using generative AI tools. This would allow a deeper understanding of the relationship between digital technologies and creative competence in higher education.

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