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METHODOLOGICAL JOURNAL**<http://mentaljournal-jspu.uz/index.php/mesmj/index>**IMPROVING THE METHODOLOGY FOR DEVELOPING THE COMPETENCE OF
FUTURE TECHNOLOGICAL EDUCATION TEACHERS****Mansur Erkinovich Kodirov***PhD in Pedagogical Sciences**Jizzakh State Pedagogical University**Head of the Department of Technological Education Methodology**E-mail: mypostmans@gmail.com**Jizzakh, Uzbekistan***ABOUT ARTICLE**

Key words: technology education, future teacher, professional competence, technological competence, digital competence, competence-based approach, pedagogical design, project-based learning, digital education, reflection, innovative methodology.

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Abstract: This article examines the theoretical, methodological and practical foundations for improving the methodology of developing the professional competence of future technology education teachers. In the context of digital transformation in education, future technology education teachers are expected not only to possess technological knowledge, but also to adapt technological content to pedagogical situations, use digital tools effectively, organize project-based and problem-based learning, assess learners' outcomes, and reflect on their own pedagogical practice. Based on the integration of systemic, competence-based, learner-centred, activity-based and digital approaches, an improved methodological model for developing the competence of future technology education teachers is proposed. The model consists of target, content, process-methodological, digital-practical and result-oriented components. Motivational, cognitive, practical-technological and reflective criteria are defined, along with low, medium and high levels of competence development.

Introduction. The modeling method is widely used in modern science at higher education institutions, including in pedagogical science. Modeling in pedagogy has specific

characteristics peculiar to this field, arising from the fact that the pedagogical process is always directly related to the educational activities of both the learner and the educator. Modeling in pedagogy is of particular importance due to the complexity and multiplicity of the factors that determine the course of the pedagogical process. The modeling method is integrative; it enables empirical and theoretical research to be combined in pedagogical studies, that is, to combine practical experience with the construction of logical structures and scientific abstractions in the process of studying a pedagogical object.

One of the main characteristics of a pedagogical phenomenon and process is its systematic nature. The systems approach makes it possible to analyze, investigate, and develop a particular object as an integral, unified system and is the most reliable methodological basis for improving systems theory for the study of pedagogical theory and practice [1].

The significance of the systems approach for our article lies in the fact that it makes it possible to:

- consider the formation of students' production and technological competence as a complexly organized object and an integral system;
- identify the system-forming factor in the model for developing students' production and technological competence;
- develop a model for forming the production and technological competence of students at technical higher education institutions, determine its components, their role and significance, and reveal their interrelationships.

Since conceptuality is one of the main requirements imposed on pedagogical models, the task of determining the principles on which the model for developing students' production and technological competence is based naturally arises [2].

Methodology. The given methodological model consists of four interconnected and predictive components: target-oriented, content-based, methodological, and outcome-oriented.

The target-oriented component includes the social order and the objective.

The content-based component consists of tasks, approaches, principles, components of production and technological competencies to be developed, and pedagogical conditions, and determines the theoretical basis for developing the production and technological competencies of future technology education teachers.

The methodological component incorporates the forms of teaching compulsory subjects, the components of production and technological competence, methods, competencies, and

tools. This component fully reveals the process of developing the production and technological competencies of future technology education teachers.

The outcome-oriented component consists of the stages of pedagogical experimental work, assessment criteria, levels of development of production and technological competencies, and the outcome. This component determines the level of development of the production and technological competencies of future technology education teachers in conducting pedagogical experimental work.

Naturally, the process of designing the system of pedagogical practice is aimed at creating an innovative model and, first of all, at solving new educational tasks and achieving new educational outcomes in the development of the production and technological competencies of future technology education teachers.

The study of psychological and pedagogical literature makes it possible to approach the process of preparing students at higher education institutions for production and technological activities from different theoretical and methodological perspectives [3].

In professional education and education in general, the principle of the competency-based approach implies the creation of a professional educational environment that ensures the formation of learners' knowledge, skills, and abilities. The competency-based approach is based on the need to develop professionally significant personal qualities aimed at successful self-realization of students in their subsequent professional activities.

This approach involves developing the content of production and technological activities in accordance with a set of integrated professional tasks envisaged in the competency model of specialists.

It should be emphasized that, according to this approach, the model of a graduate of a higher education institution includes not "knowledge," "abilities," and "skills" in individual subjects and objects of labor, but rather "knowledge," "abilities," and "skills" that constitute the basis of individual elements of activity.

In accordance with educational standards developed on the basis of the competency-based approach, every profession acquired at a higher education institution should be reflected in the corresponding competencies, because the activity of every specialist differs from that of another through specific requirements. Considering that a specialist is assessed from the perspective of competence, this means that the content of his or her activity should also be assessed from the same perspective. Effective formation of production and technological competence among future technology education teachers at higher education institutions is ensured when certain conditions are observed.

One such condition was identified as follows: the content of specialized subjects is designed in accordance with indicators of the future specialist's readiness for production and technological activities.

Justification of this condition presupposes the use of the theory of pedagogical design of educational content [4].

In considering the teacher's design activity, we proceeded from the fact that a student is distinguished by the ability to master not only subjectively new cognitive tasks (new for them), but also objectively new scientific knowledge that is not yet known. A specific feature of a teacher's design activity in a higher education institution is the design of a system of cognitive and creative tasks. Therefore, when designing the content of an academic subject, the teacher should ensure that students are involved in production and technological, research, innovation, design, and inventive activities.

Effective design of the content of the educational process is related to the objective nature of the quality of pedagogical knowledge as a complex whole having an internal and external structure. The internal structural qualities of knowledge include completeness, awareness, and durability. The external structure of knowledge includes depth, systematicity, and validity [5].

An important aspect of designing the educational process is that, after designing the content, the teacher should be able to orient themselves toward the patterns of learning educational material and master various methods of presenting the content.

Taking into account the sequence of stages of pedagogical design—goal setting, forecasting, planning, and construction—we present the stages of developing students' production and technological competence:

- determining the objectives of students' production and technological activities;
- clarifying cognitive tasks;
- self-assessment of readiness for production and technological activities;
- selecting an appropriate method of action leading to the solution of problems;
- designing production and technological activities;
- implementing the program for carrying out production and technological activities;
- monitoring the results of the work;
- carrying out corrective work based on the monitoring results;
- eliminating errors and their causes.

Results and discussion. The above makes it possible to identify the logic of designing the content of specialized subjects for the development of students' production and technological activities.

As is known, the teacher's activity is carried out through organizational forms that include content, tools, and methods. Whereas previous organizational forms were aimed at optimizing individual components of the teaching process, modern forms of the pedagogical process consider the educational situation as an integral, dynamically developing whole. That is, the issue here concerns the transition to a new principle of organizing the educational process as an integral educational and developmental situation [6]. The most important principles include:

- the principle of conformity with nature;
- the principle of continuity;
- the principle of cooperation;
- the principle of reflection, and others.

Today, the starting position in selecting pedagogical forms is the model of mutually developing activity between teachers and students. This model differs from other models in that, regardless of educational programs, the student's position is at the center of the teacher's attention.

Such a relationship between the teacher and the student also changes the organizational forms. Here, the issue concerns a new understanding of an important characteristic of pedagogical forms, namely, the advantage of the collaborative learning method based on the simultaneous application of individual, pair, group, and collective work in a certain interrelationship.

In this case, the organization of the educational process involves a variety of mutual interactions that make it possible to activate each student's personal experience while maintaining a high level of individual activity. When selecting pedagogical forms, the teacher takes into account how each of them ensures the formation of a particular competence among future specialists.

With such an organization of pedagogical forms, positive interdependence, personal interaction, individual responsibility, communication skills, and other professionally important qualities are achieved; in other words, a new professional educational environment is created.

Conclusion. In conclusion, the pedagogical forms widely used in higher education in this regard include problem-based lectures, seminar-conferences, practical and laboratory-practical classes, students' educational and research work, course work, and others.

Tasks aimed at developing production and technological competencies among students develop students' professional activities aimed at acquiring knowledge and developing professionally significant personal qualities.

According to the types of professional tasks aimed at developing production and technological competencies among students, organizational forms that ensure students' performance of professional tasks during intermediate assessment, personal qualities, as well as teaching methods that contribute to their development, were selected.

References:

1. O'zbekiston Respublikasi Prezidentining 2020 yil 5 oktabrdagi «Raqamli O'zbekiston — 2030» strategiyasini tasdiqlash va uni samarali amalga oshirish choratadbirlari to'g'risida" PF-6079-son farmoni.
2. O'zbekiston Respublikasi Prezidentining "O'zbekiston Respublikasi oliy ta'lim tizimini 2030 yilgacha rivojlantirish Konsepsiyasini tasdiqlash to'g'risida"gi (2019 yil 8 oktabr) PF-5847-sonli Farmoni, 1-ilova 9-bandi // <https://lex.uz/docs/4545884>.
3. Il'erbina Ye.Yu., Lomovseva N.V. sifrovaya transformatsiya obrazovatel'nogo protsessa. - https://elar.rsvpu.ru/bitstream/123456789/28991/1/978-5-8295-0646-9_2019_091.pdf
4. Didakticheskaya konsepsiya sifrovogo professional'nogo obrazovaniya i obucheniya / P.N.Bilenko, V.I.Blinov, M.V.Dulinov, Ye.Yu.Yesenina, A.M.Kondakov, I.S.Sergeev; pod nauch. red. V.I.Blinova. - Moskva, Nauchno-issledovatel'skiy sentr professional'nogo obrazovaniya i sistem kvalifikatsiy, 2020. – 98 s.
5. Qodirov M. E Ishlab chiqarish-texnologik kompetentlik tushunchasi va uning mazmun mohiyati //so'ngi ilmiy tadqiqotlar nazariyasi 6-jild 11-son respublika ilmiy-uslubiy jurnali 13.11.2023
6. Qodirov M. E. Ishlab chiqarish-texnologik kompetentlik tushunchasi va uning mazmun mohiyat// So'ngi ilmiy tadqiqotlar nazariyasi 6-jild 11-son respublika ilmiy-uslubiy jurnali 13.11.2023. 11- 16 betlar.
7. Qodirov M. E. Bo'lajak muhandislarni kasbiy faoliyatga tayyorlash jarayonida texnik kompetentligini rivojlantirish //Raqamli texnologiyalarni o'quv jarayoniga joriy etishning zamonaviy holati va istiqbollari.Xalqaro ilmiy-amaliy anjumani materiallari (2023 yil 14-noyabr) 701-706 betlar.