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Content of the Work Done to Develop Students' Technical and Design Competence

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Abstract: In the current time, as globalization and the integration of education are developing, there is an increasing need for 3D modeling and designing technological processes to develop the technical and design competence of students in the "Technological Education" field. There are no boundaries in science. Science, particularly scientific activity, is extremely important for the development of any country in the world today. Many areas of social life are widely utilizing the achievements of science and scientific developments in their growth.

Keywords: Technical-design, competence, potential, professional competence, professional activity, ability, activity, skill, design, modeling.

Today, it is of great importance to provide the younger generation, who are entering independent life, with knowledge of modern computer programs related to scientific-technical, technological-constructive, design, modeling, economics, and production fundamentals, to further develop their intellectual potential, and to foster a creative attitude towards the surrounding events and phenomena. In the process of developing students' technical-design competence, increasing their motivation for entrepreneurial and research activities, as well as constructive-modeling activities, is one of the most relevant issues today.

The scientific and methodological significance of developing the technical-design competence of future "Technology" teachers holds a special place in the context of the continuous education system being improved in our country in accordance with social demands. In addressing the emerging issues in this regard, it is essential to clarify the introduction of digital technologies into the teaching process, particularly in full-time education, and to create the necessary information infrastructure.

In the scientific research works of the pedagogical scholars of our country, N.N. Tolibov and X.A. To'rayev, the theoretical foundations of fostering self-directed creative activity in students through innovative education and information-communication technologies, as well as the ways of organizing a learner-centered, free educational environment, are established.

Researchers and scholars in the field of pedagogy are conducting several scientific studies with the aim of reforming the education sector, improving quality and efficiency, and enhancing students' innovative professional activities.

In the process of conducting this research, in order to understand the number of dissertations defended with positive results that have been carried out in our country, as well as to comprehend their content, a systematic analysis of doctoral (PhD) and Doctor of Science (DSc) dissertations and author's abstracts in the field of pedagogy completed between 2003-2024 was conducted by downloading them from the information and educational platform ziyonet.uz. The total number of these dissertations amounted to one thousand seven hundred eighty-one (1781), of which one thousand six hundred twenty-three (1623) were PhD dissertations in pedagogy, and one hundred fifty-eight (158) were DSc dissertations in pedagogy. It was explained that the total number of dissertations in the field of pedagogy for the specialization 13.00.02–Theory and Methodology of Education and Training (by fields) was six hundred forty-six (646), with five

hundred eighty-six (586) PhD dissertations in pedagogy and sixty (60) DSc dissertations in pedagogy (see Table 1.1).

Table 1.1. The total number of dissertations completed in the field of pedagogy between 2003-2024, including PhD (Doctor of Philosophy) and DSc (Doctor of Science) dissertations, as well as dissertations completed in the field of 13.00.02 – Theory and Methodology of Education and Training (by fields).

The total number of dissertations in the field of pedagogy for the degrees of Doctor of Philosophy (PhD) and Doctor of Science (DSc) defended from 2003 to 2024.		The total number of dissertations in the field of pedagogy for the degrees of Doctor of Philosophy (PhD) and Doctor of Science (DSc) in the area 13.00.02 – Theory and Methodology of Education and Training (by specialties) defended from 2003 to 2024.	
1781		646	
The total number of Doctor of Philosophy (PhD) dissertations in the field of pedagogy defended from 2003 to 2024.	The total number of Doctor of Science (DSc) dissertations in the field of pedagogy defended from 2003 to 2024.	The total number of Doctor of Philosophy (PhD) dissertations in the field of pedagogy in the specialty 13.00.02 – Theory and Methodology of Education and Training (by specialties) defended from 2003 to 2024.	The total number of Doctor of Science (DSc) dissertations in the field of pedagogy in the specialty 13.00.02 – Theory and Methodology of Education and Training (by specialties) defended from 2003 to 2024.
1623	158	586	60

The total number of dissertations completed in the field of 13.00.02 – Theory and Methodology of Education and Training (Technological Education) is eighteen (18), with seventeen (17) dissertations in the field of pedagogy for the degree of

Doctor of Philosophy (PhD) and one (1) dissertation for the degree of Doctor of Science (DSc). The relevance of the chosen topic is demonstrated by the fact that, in the research works related to teaching methodology, the total number of dissertations on improving the methodology of developing students' technical-design competence is three (3). Furthermore, it can be seen that no dissertations in the field of pedagogy for the degree of PhD and DSc have been conducted on the specific topic of improving the methodology of technical-design competence development under the specialization 13.00.02 – Theory and Methodology of Education and Training (Technological Education) (see Table 2)

Table 2. The total number of dissertations in the field of Pedagogical Sciences defended between 2003 and 2024 for the degree of Doctor of Philosophy (PhD) and Doctor of Sciences (DSc) in the specialty 13.00.02 – The Theory and Methodology of Education and Training (Technological Education) and dissertations aimed at improving the methodology for developing students' technical and design competencies

The total number of dissertations in the field of pedagogy for the degrees of Doctor of Philosophy (PhD) and Doctor of Science (DSc) in the specialty 13.00.02 – Theory and Methodology of Education and Training (Technological Education) defended from 2003 to 2024.		The total number of dissertations in the field of pedagogy for the degrees of Doctor of Philosophy (PhD) and Doctor of Science (DSc) from 2003 to 2024, focusing on improving the methodology for developing students' technical and design competence.	
18		3	
The total number of Doctor of Philosophy (PhD) dissertations in the field of pedagogy in the specialty 13.00.02 – Theory and Methodology of Education and Training (Technological Education) focused on improving the methodology for developing students' technical and design competence, defended from 2003 to 2024.	The total number of Doctor of Science (DSc) dissertations in the field of pedagogy in the specialty 13.00.02 – Theory and Methodology of Education and Training (Technological Education) focused on improving the methodology for developing students' technical and design competence, defended from 2003 to 2024.	The total number of Doctor of Philosophy (PhD) dissertations in the field of pedagogy focused on improving the methodology for developing students' technical and design competence, defended from 2003 to 2024.	The total number of Doctor of Science (DSc) dissertations in the field of pedagogy focused on improving the methodology for developing students' technical and design competence.
17	1	3	0

Analysis of the dissertations completed in our country between 2003 and 2024 shows that scientific research on the improvement of the methodology for developing students' technical and design competencies in the field of Pedagogical Sciences has been almost nonexistent. This gap in research is the methodological foundation for the relevance of the dissertation topic 'Improvement of the Methodology for Developing Students' Technical and Design Competencies' and the decision to define the specialty as 13.00.02 – The Theory and Methodology of Education and Training (Technological Education) for the Doctor of Philosophy (PhD) in Pedagogical Sciences.

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