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METHODOLOGY FOR THE FORMATION OF DESIGN COMPETENCE OF FUTURE TECHNOLOGY TEACHERS BASED ON AN EPISTEMOLOGICAL APPROACH

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Abstract: This article analyzes the methodology for forming design competence of future technology teachers based on the epistemological approach. The article is devoted to studying the role of epistemology in the educational process, its importance in the processes of knowledge creation and teaching. By using the epistemological approach to form design competence, students are prepared to think creatively, solve problems and create technological solutions. The possibilities of developing new pedagogical approaches for teachers and students through this methodology are considered.

Keywords:epistemological approach, design competence, technological education, pedagogical methods, constructionism, problem-based learning, reflection.

Introduction: Nowadays, it is not enough to provide future technology teachers with only theoretical knowledge. It is necessary to develop their skills in innovative thinking, problem solving, and developing technological solutions. The epistemological approach plays a significant role in this process, because by understanding the process of learning and creating knowledge, it prepares students not only for knowledge, but also for the creation and application of this knowledge in practice. Epistemology helps to make the educational process effective and meaningful by studying theories about the origin, structure, and development of knowledge. The formation of design competence in technological education provides students with not only practical skills, but also the ability to think analytically and create creative solutions.

Methodological approaches: This article analyzes the methodology for the formation of design competence based on the epistemological approach. We will consider how the main principles of this methodology, pedagogical approaches and methods are used in teaching students.

The educational process based on the epistemological approach does not only involve passive learning of knowledge, but also ensures the active participation of students, their participation in the process of creating their own knowledge.

According to the epistemological approach, rather than teaching ready-made knowledge in education, it is necessary to create an environment in which students activate themselves. In this case, students are not limited to mastering knowledge, but they actively participate in creating knowledge and interacting with each other. This process is especially important in technological education, because when teaching technologies, students are taught to apply their knowledge in practice, solve problems and develop innovative solutions. To develop these skills, future technology teachers study real-life problems and use various methods to solve them. In addition, the epistemological approach allows future technology teachers to actively participate in the process of understanding the problem and solving it by creating new knowledge. At the same time, it develops project competence and teaches future technology teachers to work together. These are skills aimed at working in a group,

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exchanging ideas, developing creative solutions together, and achieving more effective results. In this approach, students learn from each other, expand their knowledge, and achieve success in implementing projects in a group. The effective use of technology is of great importance in the formation of project competence. In technological education, students learn to use various technological tools (computer programs, programming languages, simulations, etc.). This prepares them to create projects and apply new technologies in practice.

According to the analysis of the literature, many scientists, such as Charikova Irina Nikolayevna, A.A.Ivanova, V.V.Svetlov, Sh.T.Ismoilov, M.Sh.Tashkentov, V.V.Karpov, M.V.Frolov, put forward the idea that the epistemological concept of educational development helps to understand the new pedagogical phenomenon (educational project of future technologists) and the process of its development, which allows us to understand the project role of knowledge and ensure the use of its synergistic potential in self-development and self-formation of the individual, which leads to the achievement of a professional educational result that allows us to predict the emergence of a creative class of technologists in the digital world.

The works of psychologists such as Piaget and Vygotsky contain information about the role of the epistemological approach in the educational process, how to teach students and what methods can be used.

In the structure of the educational design of future technology teachers, the epistemological component constitutes an epistemic construct that serves as an intellectual basis, including fundamental interdisciplinary and practical project knowledge. The praxeological component includes activity-based methods that characterize the procedural nature of the development of educational design as a process of mastering critical thinking, constructing new project knowledge and creating a product (project), as well as a personal development project (the project itself). The axiological component reflects the value-semantic content of educational design and reflects the importance of a value-based attitude to project-based "live" knowledge, the process of cognition, knowledge based on an educational project and the motives for its development.

Analysis of pedagogical practices: In the formation of design competence of future technology teachers based on an epistemological approach, pedagogical methods used in modern technological education, in particular, constructionism, project-based learning and collaborative learning methods, are used. The results of the research conducted in the process of conducting experimental research among teachers and students on the formation of design competence based on an epistemological approach in the educational process show the effectiveness of the methodology.

Methodological results: The methodology for forming project competence of future technological education students based on the epistemological approach shows the following main results:

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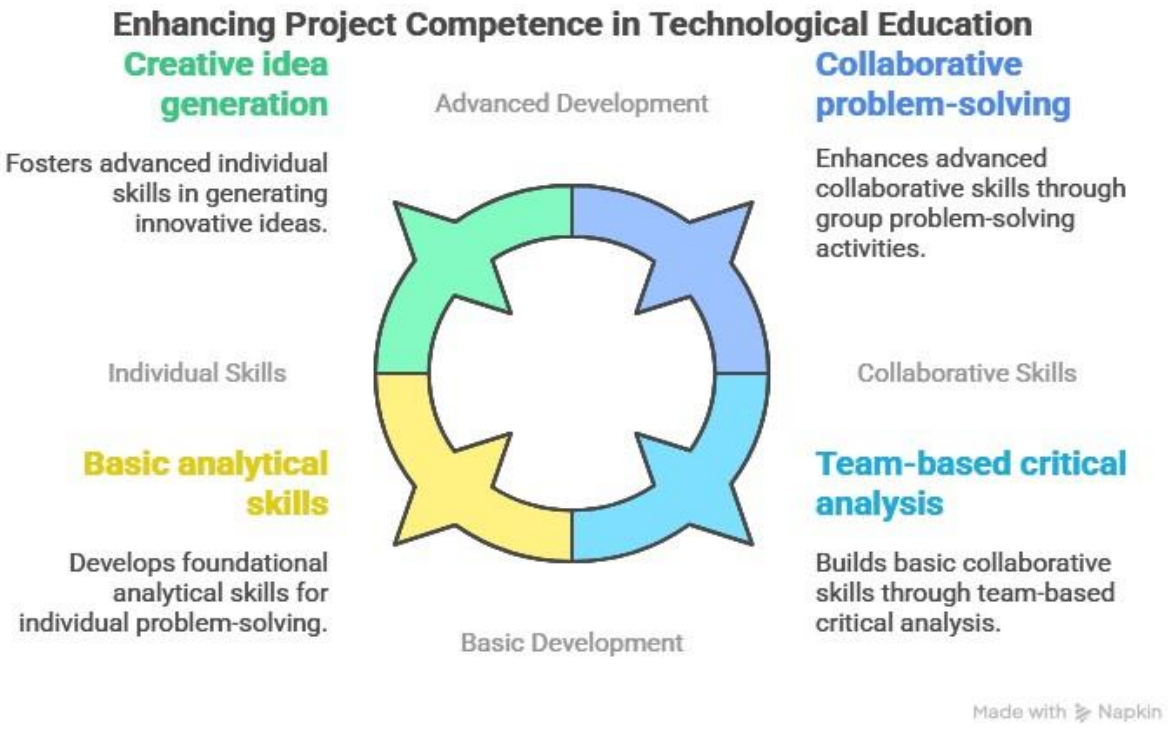

Development of creative thinking: The epistemological approach helps students develop the processes of generating new ideas, analyzing existing knowledge and creating. Project competence is not only based on existing knowledge, but also aimed at creating new and innovative solutions.

Increasing problem-solving skills: Through the project-based learning methodology, students acquire the analytical and creative skills necessary to solve real-life problems. The epistemological approach helps to form this process on a scientific basis.

Collaboration and analysis: Through collaborative learning methods, students develop their knowledge through the exchange of ideas and working in groups. It also teaches students to think critically and reflect.

Effectiveness of pedagogical approaches: Constructionism and interactive teaching methods are effective in teaching students independently and consolidating knowledge.

Discussion of methodological results: The effectiveness of the methodology for the formation of design competence based on the epistemological approach is confirmed by the above results. However, the successful application of this methodology depends on the understanding and readiness of teachers for the epistemological approach. It is necessary to adapt teachers to this methodology and continuously improve them. In addition, more effective results can be achieved by expanding testing and experiments among students, introducing new pedagogical methods, and using technological tools. It is also necessary to revise curricula in order to further study and develop the epistemological approach in the technological education system. The use of digital technologies in education is considered an important tool for preparing students to solve realistic life problems.

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Conclusion: This article considers the methodology for developing design competence in future technological education students based on an epistemological approach. The role of epistemology in the educational process, its importance in the processes of knowledge creation and teaching, as well as the importance of preparing students not only to acquire knowledge, but also to create and apply their knowledge in practice, was emphasized.

Through an epistemological approach, students are not limited to mastering technological knowledge, but also develop creative and analytical thinking in developing new ideas, evaluating existing approaches, and solving real-world problems. Pedagogical methods such as constructivism, project-based learning, and collaborative learning methods have shown to be effective in developing innovative and practical competencies for students.

As a result, the methodology for developing design competence based on an epistemological approach makes the educational process more effective, creative, and innovative, preparing students to solve problems and create technological solutions. Also, the widespread use of digital tools in technology education is seen as an important tool for preparing students to solve real-world problems.

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