JOURNAL OF MULTIDISCIPLINARY SCIENCES AND INNOVATIONS
VOLUME 05, ISSUE 01
MOPNTHLY JOURNALS
ISSN NUMBER: 2751-4390
IMPACT FACTOR: 9,08

PRINCIPLES OF DEVELOPING STUDENTS' GRAPHIC COMPETENCE BASED ON AN INDIVIDUAL APPROACH

Turaev Doniyor Amirovich
Faculty of Natural and Exact Sciences,
Lecturer of the Department of Technology and Geography
ORCID: https://orcid.org/0009-0000-6426-3545
Email: doniyor19780329@gmail.com

Abstract

This article presents considerations related to the principles of developing students' graphic competence based on an individual approach. In Uzbekistan, large-scale efforts are being carried out to improve the effectiveness of technological education, with particular attention paid to designing educational content, structuring professional graphic competencies, developing new methodological teaching models, and implementing them in educational practice. Within the framework of educational reforms in Uzbekistan, the *Concept for the Development of the Higher Education System until 2030* identifies a priority task—"accelerating the processes of studying and implementing advanced foreign experience in improving the quality of education and enhancing teaching methods." In this context, special importance is attached to improving the methodology for developing the professional graphic competence of future teachers of technological education, as well as ensuring all didactic opportunities for the effective mastery of reproductive, productive, and creative levels of professional graphic activity.

Keywords

individual approach; principle of systematization; principle of scientific validity; principle of differentiation and gradualness; principle of motivation (interest stimulation); principle of modularity; principle of individualization; principle of independence; graphic competence

The development of scientific and technological progress within the global community, large-scale reforms in education, science, and industry, as well as the rapid growth and improvement of scientific and technical information systems, are reflected in the application of innovative and integrative approaches to educational content. A particularly important role is played by the scientific outcomes of such research centers as the European University Institute, the Max Planck Institute, Harvard Law School, European Integration Studies (ECSA-Austria), ARENA (Oslo), and the Mannheim Centre for European Social Research in the field of educational innovation and integration.

Under conditions of qualitative renewal of educational programs, the introduction of pedagogical conditions for preparing young people for professional activity ensures the integration of sciences, the comprehensive use of traditional and modern teaching methods, and the effective application of integrative didactic tools.

In the preparation of this article and the solution of research tasks, the following methods were employed: analysis of pedagogical, psychological, methodological, and graphic-science literature; theoretical analysis; pedagogical observation; questionnaires; modeling; diagnostics; pedagogical experimentation; and methods of mathematical and statistical analysis.

Discussion and Results. Teaching principles must correspond to the requirements imposed on the education system and reflect ongoing social, economic, political, legal, and moral transformations in society, continuously renewing and developing, which gives them particular significance.

The formation of the content for organizing students' individual activities aimed at developing graphic competence based on an individual approach relies on the selected theory of educational content organization, as in traditional systems, and takes relevant principles into account.

Teaching principles represent a system of fundamental rules that define the joint activity of participants in the pedagogical process.

The formation and construction of a logical-functional model for developing students' graphic competence based on an individual approach is also carried out on the basis of the selected theory of educational content organization, considering relevant principles.

The principle of connection with production предполагает отражение в содержании творческих заданий студентов процессов механизации и автоматизации производства, а также основных directions of scientific and technological progress. It serves both as a goal of students' individual activity and as an important factor in enhancing their professional knowledge, skills, and competencies.

The principle of systematization consists in the systematic presentation of knowledge and skills that students must master, linking new knowledge with previously acquired competencies. This broadens and deepens their understanding and forms a program for professional development. A systematic approach implies progression from simple to complex, from old to new, from knowledge to skills, and from skills to competencies.

The principle of scientific validity requires providing students with scientifically substantiated and practically verified information. The selection of content should be based on the latest achievements in science and technology. In the process of mastering scientific knowledge, students develop scientific worldview and thinking. Each lesson must be content-rich and scientifically grounded, ensuring not only knowledge acquisition but also cognitive development and the formation of individual learning activities. Therefore, instructors must continuously improve their scientific competence and stay informed about modern pedagogical technologies and innovations. The knowledge acquired by students should be theoretically justified and practically validated.

The principle of differentiation and gradualness plays a significant role in students' individual activities, as students differ in levels of knowledge, thinking, and abilities, requiring creative tasks to increase in complexity gradually.

The principle of motivation (interest stimulation) involves encouraging students' individual cognitive and learning activities by fostering interest in educational material, motivating knowledge acquisition, and promoting active creative thinking.

The principle of modularity serves as the foundation of individualized learning. The dynamic structure of modules allows presenting educational content in various forms: complete, abbreviated, or in-depth. The choice is provided to the student. Modularity is also reflected in the diversity of teaching methods and forms (dialogue, independent reading, educational and simulation games, problem-based lectures, seminars, consultations, etc.). Learning occurs progressively—from simple to complex—while the flexibility of modular elements enables regular content updates.

The principle of individualization assumes consideration of each student's learning style, personal development trajectory, and psychological characteristics. As a result, each participant achieves individual outcomes corresponding to their level of creative development.

The principle of independence is extremely important in students' individual activities. It is based on high-level thinking and gradual complication of independent tasks. Student activity and independence are closely interconnected: activity reflects interest in creative work, while independence represents the highest form of activity.

Selection of Teaching Methods

Interactive teaching methods contribute to the development of students' creative thinking, active use of acquired information, free expression of opinions, initiative, collaborative problem-solving in groups, cooperative learning, and the development of written communication skills.

Assessment Results. The outcome block presents criteria and levels for assessing the development of students' individual activities: reproductive (low), variative (medium), and creative (high). These criteria are based on assessment components using electronic textbooks and ICT, defining high, good, and average mastery levels. Accordingly, students' individual activity development levels are evaluated.

As a result, the training of engineers with well-developed individual self-development skills is achieved. The implementation of the proposed model plays a crucial role in improving methodologies for developing students' graphic competence based on an individual approach.

References:

1. Law of the Republic of Uzbekistan "On Science and Scientific Activity" (October 29, 2019). https://lex.uz/doc/4571490
2. Decree of the President of the Republic of Uzbekistan "On the Strategy of Actions for Further Development of the Republic of Uzbekistan" (February 7, 2017). https://lex.uz/pages/getpages.aspx?list_id=3107036
3. Nishonova, S. (2003). *Education of a Harmoniously Developed Personality*. Tashkent: Istiqlol.
4. Tolipov, O., et al. (2005). *Pedagogical Technology: Theory and Practice*. Tashkent: Fan.
5. Vyazankova, V. V. (2021). Formation of graphic competence of bachelor students in technical fields under conditions of information and educational environments. *Modern Problems of Science and Education*, 2. https://science-education.ru/ru/article/view?id=30663
6. Turaev, K. A., Sattarov, S. Y., Tashkuziyev, B. M., & Turaev, D. A. (2019). Project development of competence of future drawing teachers using geometric reflection techniques. pp. 13791–13800.
7. Gadaymuratov, S. M. (2022). Development of professional competence of future technology education teachers. *Talqin va Tadqiqotlar*, 5.
8. Turaev, D. A. (2023). Didactic possibilities and model for developing professional graphic competence of future technology education teachers. *Modern Scientific Research: International Scientific Journal*, 1(3).
9. Turaev, D. A. (2023). Didactic possibilities and model of developing professional graphic competence of future technology teachers. *Proceedings of the International Scientific-Practical Conference*, May 19–20.
10. Turaev, D. A. (2024). Development of professional competencies of future technology teachers during classroom instruction. *American Journal of Multidisciplinary Bulletin*, 2(5). https://doi.org/10.5281/zenodo.14530898