

**INTENSIVE METHODS OF TEACHING SPECIALISTS TO ENGINEERING STUDENTS**

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Abstract

The article contains recommendations on the effectiveness of teaching the subject "Internal combustion engines" using digital software pedagogical tools in technical technical schools.

Keywords professional competence, technique, teaching methods, tool, IOD, virtual experience stand.

Introduction

In the world experience, innovative technologies, educational information tools and models of using electronic educational resources are being applied to the process of training future engineers in higher education institutions. Based on the "Qingdao" declaration, systematic practical work is being carried out to create a quality education system by implementing the achievements of information and communication technologies, improving the educational process and tools, summarizing the analytical results, and implementing the mechanisms of conclusion until 2030.

Reforms are being rapidly implemented in the education system of Uzbekistan. Practical work is being done on the application of the most advanced technologies and methods in all branches of the informal education system. This is a practical result of the state's youth policy. Tasks for the development of the state are set in goals "30, 36, 42, 46" of the decree on the development strategy of the Republic of Uzbekistan for 2022-2026 . In order to ensure their implementation, the importance of developing scientific outlook, creative and logical thinking of personnel being trained in higher education institutions is clearly demonstrated. It became the basis for developing a road map for reforming and further developing the education system. To develop the professional competences, knowledge, skills and abilities of the engineers who are being trained in the implementation of the specified tasks, to improve the current methodology, educational-methodical, educational-methodical, didactic, technical-technological support based on today's requirements, and to improve the knowledge and skills of future specialists, as well as the criteria for evaluating



the acquired knowledge. , the development of pedagogical strategies of teaching is important.

Of study of the problem . R. Kh. Djuraev, U. I. Inoyatov, Z. K. Ismailova, N. A. Muslimov, Sh. E. Qurbanov, U. N. Nishonaliev, A. R. from the scientists of our republic on the problems of development of professional education and career guidance. Khodjabaev, Q. T. Olimov, Kh. F. Rashidov, D. D. Sharipova, J. A. Hamidov, D. O. Khimmataliev, M. B. Urazova, O. Kh. Turakulov and others conducted scientific research.

Scientists from foreign countries V.I. Baidenko, A.A. Verbitsky, N.A. Grishina, E.F. Zeer, I.A. Zimnya, N.V. Kuzmina, A.I. Kuleshova, A.K. Markova . , A.Maslou, H.Miyakawa, R.Mohan, Dj.Raven, S.Uiddet, S.Xolliford's studies have studied and analyzed the problems of developing professional competences, using modern teaching and pedagogical software tools.

Classical methods and approaches can be used in technical fields and education system, but it is important to choose a teaching methodology depending on the field and direction of education and the structure of the subject. Depending on the specialization of the chosen direction, the training in classrooms, production enterprises or specialized laboratories directly affects the quality of knowledge of the trained personnel. Therefore, in order to improve the quality and effectiveness of personnel training in any technical higher education institutions , it is necessary to carry out consistent and systematic work on improving the content of professional training activities and increasing the level of training of the scientific potential of professors and teachers. The main demand in today's modern labor market is the increasing need of employers for mature personnel who can fully perform their professional duties. High results and indicators can be achieved through effective work of professors and teachers, increase in professional qualification and its development. Professors with high professional qualifications achieve high-quality staff training. Organization of the educational process is the main task of the pedagogue, and the fulfillment of the task is also a responsibility of the pedagogue.

Today, the most optimal way of further development of our national economy is the use of science. It is not for nothing that the leader of the state Sh. Mirziyoyev repeatedly emphasizes the idea that "salvation is in education".

In recent years, radical changes and deep reforms have been carried out in the higher education system. The state educational standards in the higher education system have been improved, on the basis of which model curricula are being improved directly on the basis of the demands and proposals of the production sectors, and in the formation of the knowledge, skills and qualifications of the trained personnel, attention is being paid to their development on the basis of the competences appropriate to the educational direction and specialty. Today, a specialist with a new level of mature intellectual competence is in demand. The need for today's personnel to become active creative-logical thinkers, inquisitive, independent assimilation of scientific information, creative thinkers and experts who can apply them in their professional activities is being shown.

It is necessary to change the approaches to the teaching of specialized subjects in technical areas. For example, the subject of "Internal combustion engines" is taught in transport



courses. This subject is taught by adjusting the topics according to the educational direction. For example, in the direction of vehicles, internal combustion engines for light vehicles are provided, while for agricultural fields, internal combustion engines of tractors, combine harvesters or similar large equipment are trained. It certainly requires great responsibility, knowledge, and experience from the professor-teacher.

There should be a specially equipped auditorium for teaching this subject. Explanation of the engine of the chosen type of technology by means of a model or a model serves to increase the professional competence of students. However, since there are not enough specially equipped classrooms for the subject, classes have to be held in non-specially equipped classrooms. This prevents students from getting enough ideas about science, how engines work, combustion processes, etc.

To date, the effectiveness of education digitalization is becoming invisible. Wide use of digital software is necessary. It is necessary to create digital textbooks on subjects, laboratory works, educational manuals and other stylistic-methodical support for learning on subjects. Today, electronic textbooks have been created in many subjects. These electronic textbooks do not fully cover the information on the subject.

No information was found in Uzbek language when searching for video lessons on science, laboratory stands on the open internet system. An animated video about the operation of the engine was found when searching in Russian. From this, it can be concluded that not enough work has been done in Uzbekistan on the subject of "Internal combustion engines", that is, there is a need for animated, virtual lesson developments on the subject. Multimedia lesson developments help to improve the quality and efficiency of the lesson.

Fig. 1. Digital software pedagogical tools in teaching the subject of internal combustion engines

As a result of the use of digital software pedagogical tools in the teaching of science and technology, it is possible to provide sufficient information to students even without a specially equipped auditorium. Through the virtual experiment stand, students are given the opportunity to directly use a virtual engine in laboratory exercises. Instructional pedagogical tools can be widely used in the educational process. In addition, using it in the process of independent education effectively helps students to learn the subject. It is possible for the student to complete the assignments given by the subject in laboratory exercises at home, i.e. using a computer. This will help students improve their knowledge of the subject.

With the help of video lessons, students can master science by using factors such as reading, hearing, and seeing theoretical information on science. In this case, the student can use video lessons to reinforce what he did not understand while studying the subject from the textbook, study guide or other sources.

With the help of non-standard tests, students will have the opportunity to test their knowledge of the subject. There are many types of tests, and non-standardized tests help students develop their knowledge of the subject. Tests are given through pictures, videos, and numbers, which increases students' interest in science.

Intelligent computer games help students to develop their abilities such as the development of science knowledge, research, logical thinking, imagination. In particular, it teaches



students to work with books by connecting games with methodological support for science (textbooks, study guides and other resources).

Reprocessing of theoretical information on the subject of multimedia lessons using the possibilities of modern computer technologies serves to increase the attractiveness and presentation of information. Of course, it will attract the attention of students and motivate them to acquire knowledge about the subject.

Students' knowledge, skills and abilities is directed based on the traditional approach. In the approach based on digital software pedagogical tools, it helps to develop general professional and special competencies.

In imparting professional knowledge to students with the help of motivations, together with the stimulation of pedagogical processes, it activates the atmosphere in the auditorium. A student who learns in an active environment has a higher level of mastery.

In the control and assessment of the acquired knowledge in the field of specialization, rather than in the traditional approach, using digital software pedagogical tools makes it easier for both the student and the teacher.

In conclusion, the quality of lessons affects the competitiveness of students studying in technical fields and becoming mature specialists. Quality education can be provided only by professors and teachers who have modern knowledge and skills. Teachers who meet today's requirements must know computer technologies and foreign languages along with subjects. Because it is necessary to be able to understand computer software and its reference given in a foreign language in mastering the scientific innovations, techniques, and technologies that are being created. Therefore, integration of specialized sciences, computer technologies and foreign languages in the training of modern personnel is the need of the hour. After all, the training of competitive personnel and their work in society serves to improve the state economy.

Used Literature

1. Decree of the President of the Republic of Uzbekistan dated January 28, 2022 No. PF-60 "On the Development Strategy of New Uzbekistan for 2022-2026" <https://lex.uz/uz/docs/5841063>
2. Tuychiev Khairullo Ergashovich. Improvement of professional-pedagogical competencies of students based on an adaptive approach (in the example of the "Professional education" direction). Tashkent - 2022, Abstract, 51 p.
3. Kakhharov A.A. Method of development of emergency descriptions of students in training scientific geometry. European Journal of Research and Reflection in Educational Sciences. Vol. 7 No. 12, 2019 Special Issue: Education in Uzbekistan ISSN 2056-585. 68-74 p.
4. Kakhharov A.A. Developing students' spatial imagination in the teaching the subject of "descriptive geometry and engineering graphics" with the help of modern computer graphics. International congress on modern education and integration. Vol.5 Special Issue. <http://iejrd.com/index.php/%20/article/view/1178>



5. Kahharov A. A., qizi Rahimova G. E. Intensive Methods of Developing Students' Graphic Competencies in the Training of Competitive Personnel //European Journal of Life Safety and Stability (2660-9630). – 2021. – T. 7. – C. 38-44.
6. Kahkharov A., Juraeva D. MEANING CHEMISTRY IN PREPARATION STAFF IN RURAL FARMS //Theoretical aspects in the formation of pedagogical sciences. - 2022. - T. 1. - no. 6. - S. 88-91.
7. Tursunov S. S. EFFECTIVE USE OF DECORATIVE LIGHTING IN A MODERN URBAN ENVIRONMENT.
8. Kakhkharov A. A. Features of teaching descriptive geometry and engineering graphics using modern computer technologies // Nauka-rastudent.ru. – 2015. – No. 06 (18) / [Electronic resource] - Access mode. – URL: <http://nauka-rastudent.ru/18/2733/>
9. Kahkharov A. A. Intellectual yinlarni computer yordamid tashkil etish yuli bilan talim samaradorligini oshirish // Zamonaviy talim. - Tashkent: 2018. - No. 2. 56–61-b.
10. Kakhkharov A. A. Features of teaching descriptive geometry and engineering graphics using modern computer technologies // Nauka-rastudent.ru. - Ufa: 2015. - No. 06 (18) /<http://nauka-rastudent.ru/18/2733/>.
11. Kakhkharov A. A., Mansurov A. Automation and preparation of tests on the subject of descriptive geometry and engineering graphics. Journal "Science Time": materials of the International Scientific and Practical Conferences of the Society for Science and Creativity for March 2016. - Kazan, 2016. Science Time. -No. 3 (27). 224–228 p.
12. A. A. Kahharov . Intensive Methods of Developing Students' Spatial Imagination in the Teaching of Graphic Sciences. Annals of the Romanian Society for Cell Biology, 2021, ISSN:1583-6258, Vol. 25, Issue 4, 2021, Pages. 11885 - 11892
13. Abdubannaevich Q. A. TEXNIKA OTM TALABALARNING GRAFIK LOYIHALASH KOMPETENSIYALARINI RIVOJLANTIRISHNING INTENSIV USULLARI //Research Focus. - 2023. - T. 2. - no. 1. - S. 274-279.
14. Kakhkharov A., Dzhuraeva D. THE SIGNIFICANCE OF CHEMISTRY IN TRAINING STAFF IN THE FIELD OF AGRICULTURE // Theoretical aspects in the formation of pedagogical sciences. - 2022. - Vol. 1. - No. 6. - S. 88-91.