INNOVATIVE TEACHING METHODS IN DUAL EDUCATION: ADVANTAGES

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Abstract. *This article explores the methods of innovative teaching within dual education systems, as well as the substance of the process of innovative technologies. It considers the benefits of applying innovative teaching methods in educational and training processes, their distinctive techniques, and how these approaches stimulate research, broaden students' worldviews through creative educational methods, enhance students' self-esteem, make use of virtual reality technologies and blended learning methods, and how the dual-education system is significant in modern conditions. It also covers the main stages of teaching technology and the steps of organizing a lesson that develops design-thinking skills.*

Keywords: *dual education, innovative teaching, pedagogical process, lesson, interactive methods, creative approach, design thinking.*

Introduction. In our country, which is advancing along the path of independent development, reforming and improving the continuous education system, elevating it to a new level of quality, introducing advanced pedagogical and information technologies, and increasing educational effectiveness have been elevated to the level of state policy. It is known that with the development of pedagogical technologies and their entry into the teaching–training process, as well as the rapid exchange and improvement of information technologies, every individual has the opportunity to strengthen their professional training and skill.

When a teacher organises a lesson based on innovative technologies and uses various technical tools, the richer the content becomes as they apply more innovations in their activity. It should also be acknowledged that at present the conceptions of information technologies and interactive methods in education are not always stable or fully formed. Every teacher can individually introduce innovations into education. Innovative technologies stem from the teacher's dissatisfaction with their own work.

Nowadays, in the formation of well-qualified specialists, the high efficiency of dual education organised on the basis of social cooperation between educational institutions and production enterprises is becoming evident. The main objective of dual education is to improve the quality of professional training of students studying in educational institutions. The significance of the dual-education system in modern

conditions is evident in the educational process, and scholars emphasise that it is important to further study and improve this system in order to ensure its effectiveness and relevance. In our article we focus on the advantages of innovative teaching within dual education. In fact, innovative pedagogy in dual education refers to modern, creative approaches in teaching and learning that step beyond traditional methods. For example:

- Project-based learning: students acquire knowledge and skills by working for a lengthy period on engaging and complex questions or issues, and by investigating and responding.
- Inquiry-based learning: students learn by posing hypotheses and asking investigative questions. The teacher acts more as a facilitator than delivering instruction directly.

Below we describe the benefits of these innovations for students, and why they merit being tried.

Review of Related Literature. Stimulating research – Innovative learning approaches encourage students to discover and explore new things and tools in order to broaden their worldview. Problem-solving and development of critical thinking skills — Creative teaching methods enable students to learn quickly and motivate them, instead of seeking answers in textbooks, to look for new ways of solving problems. When teachers use new approaches, they still provide information to students, but are more disposed to break it into smaller parts. Now the information can be assimilated more easily and its brevity helps students to grasp the basics more quickly.

The dual education system has existed in Germany since 1870 and has demonstrated successful efficiency for employees and employers. Its essence is that an apprentice is trained simultaneously in theoretical instruction and practical work for a given profession. In dual education, apprentice teaching is understood as the master teaching the apprentice traditional methods of the craft. Under dual education, based on a government decree, students may study on a tuition-contract basis or with a state grant. According to the project, the goal of dual education is economic development, as well as the preparation of qualified personnel for enterprises in Uzbekistan via creating employment for the young and women, thereby reducing poverty. The innovation of the dual system is as follows:

- changes in the organisation of the learning process (the number of classroom lessons is reduced; internships increase up to 60-70 % of the curriculum);
- production practice is based on an individualised approach and is carried out as close to real production as possible;
- the company implements co-financing;
- mentoring at the workplace is developed.

Through the introduction of dual education, students obtain academic knowledge while simultaneously developing practical skills. Students learn how to apply what they study to their jobs. Through this approach, higher education focuses not only on mastering pedagogical knowledge, but also on educating teachers who know how to work with students. Through the positive effect of dual vocational education, the state gains political advantages for its economy and society. This form of education satisfies demand for specialists by training them directly at workplaces. The dual teaching system influences economic development directly and indirectly, not only as a pedagogical system but as an alternative form of education adapted to market conditions.

In dual education, the use of soft skills works well. Students must use more complex tools in groups to complete their work, which helps them learn new things and awakens creativity. Furthermore, by completing individual or group projects, students learn how to manage their time, prioritise tasks, communicate better, collaborate with others and many other things. The stage of checking students' understanding is also important. Assessment and exams may speak of only some aspects of the student's ability and knowledge. Innovative teaching ideas enable teachers to better understand what students are going through and thus find the most appropriate solutions.

Increasing self-esteem – Thanks to excellent teaching methods, students can understand what they have learned and what is missing. By discovering what they still need to know, they can understand why they should study certain things and become more ready to do so. In dual education, innovative teaching methods give students something new to excite them and encourage them to talk and participate more. Innovative teaching methods create opportunities for group participation. Below we turn to some of the innovative teaching methods. In lessons students may participate not only by raising their hands or being asked to answer but also by engaging in different ways. These days one can find online platforms that help run interactive activities in your group to engage all students and save a ton of time rather than just two or three students. Live quizzes and games like spinning wheels or even word clouds, live question-and-answer sessions, polls or collaborative brainstorming can lift the mood of the whole group. Using online platforms all students can be engaged in these interesting activities. In addition, instead of raising hands, students can submit answers anonymously or select them. This enables them to feel confident in their participation and not worry about being "wrong" or judged.

Methodology of the Study. The use of virtual reality technologies also makes it possible to achieve high effectiveness in education. With virtual reality technology a group can discover a wholly new world. Like sitting in a 3D cinema or playing virtual

games, students can immerse themselves in different places and interact with "real" objects rather than seeing them on a flat screen. For example, a group can travel to another country in seconds, go to outer space or observe dinosaurs standing a few feet away and thereby learn about the Jurassic period. Virtual reality technologies may be expensive, but their relevance increases because they can make any lesson amazing and amazed all students. It may sound exciting, but when teachers use virtual reality technology to teach, students will watch a virtual reality session video. Innovative teaching methods – as an example of the innovation of e-learning – we can point to the use of information technologies in education. Information technologies help us to perform many parts of our work qualitatively and quickly – so why could we not use them in education? These days this method is surprisingly widespread and developed.

In dual education the use of enterprises' opportunities as well as information technologies helps teachers reduce workload, personalise courses and help students learn more effectively independently. Another type of innovative education is blended learning. Blended learning is a method that merges traditional in-group teaching with high-technology online education. This gives students more flexibility to create a productive learning environment and tailor the learning experience. In our technological world it is hard to ignore powerful tools such as the Internet or e-learning programs. Things like video meetings for teachers and students, LMS for managing courses, online sites for interaction and games, and many applications for learning are sweeping the world.

Blended learning methods – as an innovative teaching method – are a wonderful opportunity for students to use digital tools to make offline lessons more interesting. AhaSlides is an excellent blended-learning tool that engages students in face-to-face and virtual groups. Through this platform students can take part in various quizzes, games, brainstorming and other activities. Also, 3D-printing of various items and shapes is a new tool and makes lessons more interesting and gives students hands-on experience for better learning of new skills. This method raises the group interaction to a level that no textbook can ever match. 3D-printing gives students a grasp of the real world and strengthens their imagination. When students hold different objects or models and study their structures, learning becomes much easier. An example of 3D-printing is given. Below many ideas are presented for using 3D-printing in many topics to interest curious students.

A technological approach requires each participant in the labour process to understand and account for the influence of various factors that previously may have been "foreign" in the work flow. Every person must be ready to work under high dynamics of the labour market. For that, we must be able to work with flows of information, to analyse what is happening around, to be dynamic, to have aesthetic

taste and design thinking, because the high dynamics of economic processes and high turnover in labour markets have led to establishing production processes as project activity. In dual education the application of innovative technologies can make use of the design-thinking process.

Analysis and Results. In dual education the design-thinking process is an example of an innovative teaching method, and one can observe how it occurs in a real group. In innovation-based teaching methods on the design campus, students work on projects in the project-based learning process. Project-based learning also revolves around projects, but it gives students the opportunity to solve real-life problems and search for new solutions over an extended period. These classes are interesting and at the same time students learn new content and develop skills such as research, independent work, collaboration, critical thinking and others. In this active learning method the teacher acts as a guide and students take responsibility for their own independent study. In this way independent learning leads to better interaction and understanding, awakens their creativity and supports lifelong learning. Inquiry-based learning is also an active type of innovative education. The teacher begins the lesson not by lecturing but rather with questions, problems or scenarios. This also includes problem-based learning and the teacher is more likely to be a facilitator. Students must study the topic independently or in groups to find the answers. This method helps them to develop problem-solving and research skills. In the dual education system a strategy may work for some students but might not be as effective for others. For example, group activity suits extroverts well but may be difficult for super-introverts. This method, however, allows each student to coordinate their learning process. However, more time must be spent on planning and preparation so that students can study according to their interests, needs, strengths and weaknesses and achieve better outcomes.

Conclusion and Recommendations. Thus, all innovations in the pedagogical field are based on fitting precisely to the current stage of socio-economic development of society. At the present time they should be aimed at developing learners' independence, forming self-learning and self-development capabilities, and acquiring learning programmes not mechanically but consciously. Each student's way of studying a subject may be different, but the final objective remains the same: acquiring the knowledge and skills that will prepare the learner for future life. Students record their scientific diagrams and research writings based on conducting virtual experiences like observation. It can be said that in increasing the quality and effectiveness of dual education the process is implemented through interactive technologies in the educational institution – seminars, discussions, problem lectures, debates – where students learn to express their views and debate. The advantages of innovative teaching

methods in dual education are manifested in their ability to organise the learning process, the assimilation of knowledge and skills, correctly and precisely direct it toward the goal and outcome.

REFERENCES

1. Gimush R.I., Matmurodov F.M. *Innovatsion menejment. O‘quv qo‘llanma.* – Tashkent: O‘zbekistoni faylasuflari milliy jamiyati nashriyoti, 2008. – 143 p.

2. Komiljonov B.I. *Innovatsiyaviy menejment uslublarini takomillashtirish.* Monograph. – Tashkent: FAN, 2007. – 186 p.

3. Nishonqulov, S.F. & Solidjonov, D.Z. (2021). “Ta’lim biznesida raqamli innovatsion texnologiyalar.” *Science and Education,* 2(6), 233-238.

4. Saidjonova, P.S. (2024). “Oliy ta’lim tizimida pedagogik faoliyatning mazmuni va maqsadi.” *Educational Research in Universal Sciences,* 3(4 SPECIAL), 270-274.

5. Sh., T. Z. & Kh., S. K. (2020). “Innovative forms of education in Uzbekistan.” *International Journal of Innovations in Engineering Research and Technology (IJIERT),* 7(4), 258-261.

6. Siddiqova, S. G. (2019). “Elektron ta’lim resurslarining yangi avlodi: tahlillar, arxitektura, innovatsion sifatlar.” *Ta’lim, fan va innovatsiya: Ma’naviy-ma’rifiy, ilmiy-uslubiy jurnal,* 1, 91-95.

7. To‘xtayeva, Z. & Rahmatova, B. (2023). “*Dizaynerlikda pedagogik texnologiyalar.” Tsentral’noaziatskiy zhurnal obrazovaniya i innovatsiy,* 2(10 Part 2), 128-131.

8. Xayrullo, D., Olim, A. & Bekzod, I. (2023). “Mashinali o‘qitish texnologiyalarini CO2 yordamida ekstraksiyalash jarayonida qo‘llash.” *Innovations in Technology and Science Education,* 2(9), 470-476.