INTEGRATION OF DUAL EDUCATION WITH THE CREDIT-MODULE SYSTEM: INTERNATIONAL EXPERIENCES

Mirzakimova Dilnavoz Rashid qizi
4th year student at Tashkent International University of Chemistry

ABSTRACT

This article explores the integration of dual education with the credit-module system in higher education, drawing on successful experiences from Germany, Switzerland, Austria, the UK, and France. It highlights how this model enhances students' practical competencies and employability through a combination of theoretical learning and real-world training. The study emphasizes the significance of adapting such practices in Uzbekistan's higher education institutions. Practical recommendations are provided to support implementation. The role of digital technologies in the evolving dual education landscape is also examined.

Keywords: dual education, credit-module system, international experience, higher education, employability, practical training.

DUAL TA'LIMNI KREDIT-MODUL TIZIMI BILAN INTEGRARIYASI: XALQARO TAJRIBASI

ANNOTATSIYA

Ushbu maqolada Germaniya, Shveytsariya, Avstriya, Buyuk Britaniya va Fransiyaning muvaffaqiyatli tajribasi asosida oliy ta'lim tizimida dual ta'limning kredit-modul tizimi bilan integratsiyalashuvi ko'rib chiqiladi. Mazkur model nazariy ta'lim va amaliy mashg'ulotlarni uyg'unlashtirish orqali talabalarning amaliy kompetensiyalarini takomillashtirish va ularning bandligini ta'minlashga qanday hissa qo'shishi ko'rsatilgan. Tadqiqotda O'zbekiston oliy ta'lim muassasalarida ushbu amaliyotni moslashtirish muhimligi ta'kidlangan. Amalga oshirish uchun amaliy tavsiyalar berilgan. Dual ta'limni rivojlantirishda raqamli texnologiyalarning o'rni ham ko'rib chiqiladi.

Kalit so'zlar: dual ta'lim, kredit-modul tizimi, xalqaro tajriba, oliy ta'lim, bandlik, amaliy mashg'ulotlar.

INTRODUCTION

The integration of dual education with the credit-module system has proven to be highly effective in increasing educational efficiency and enhancing employment rates across various countries. This integrated model facilitates not only a more structured and productive learning process, but also ensures that students acquire essential

practical competencies alongside academic knowledge.The synergy between dual education and the credit-module system allows students to gain deeper and broader skills. Theoretical knowledge is interlinked with production processes, enabling learners to apply academic concepts in real-world settings. The following sections explore international experiences in integrating these two systems.

In today's globalized and competitive environment, the modernization of educational systems and their alignment with market economy requirements has become a strategic priority for many countries. In this context, the dual education system, which ensures the integration of theoretical learning with practical industrial experience, is being widely implemented across the world. This model enables students to simultaneously gain academic knowledge and develop hands-on professional skills.

MATERIALS AND METHODS

At the same time, higher education institutions have been actively transitioning to the credit-modular system, which promotes student autonomy in learning, modular restructuring of curricula, and an overall enhancement of the teaching and learning process.This article analyzes the essence, advantages, and practical aspects of the integration of dual education with the credit-modular system, based on the experience of leading countries. It also discusses the prospects and challenges of implementing this integrated approach within the higher education system of Uzbekistan.

Germany is globally recognized as a leader in dual education. Its educational system is built upon a strong collaboration between academic institutions and industrial enterprises. Students acquire theoretical knowledge in classrooms while simultaneously engaging in hands-on training within production facilities.Germany's dual education system has incorporated the European Credit Transfer and Accumulation System (ECTS) since 2010. This system assigns credit points to both coursework and practical training, offering a flexible and adaptable learning structure. For example, a production internship module may carry 15–20 credit points, while classroom-based theoretical modules are also credit-bearing.Graduates of Germany's dual education programs demonstrate high employability, with over 90% successfully entering the workforce. This is largely attributed to the alignment between educational curricula and industry requirement.

Switzerland has also widely adopted dual education with notable success. Students begin gaining industrial experience from their first year. The credit-module system is central to Swiss education, wherein each theoretical or practical module is assigned specific credit points. Notably, work-based learning is also converted into academic credit, meaning students are rewarded with credits for each month of practical training.This approach enhances the quality of education by preparing students to meet labor market demands, thereby facilitating successful employment outcome.

Austria began implementing the credit-module system in the early 2000s to complement its extensive dual education framework. More than 50% of students participate in dual programs. Practical and theoretical modules are assigned creditstypically, 6–8 credits for specific practical modules. The flexible nature of the creditmodule system allows students to design learning plans aligned with their career goals.

The United Kingdom employs a robust credit-module system across its higher education institutions. Collaborative partnerships between universities and industries allow students to earn credits through internships and project work. The system assigns clear credit values to each academic module.Dual education in the UK bridges academic learning with real-world practice,enhancing students' employability. The credit-module framework adds structure and optimization to the educational process.

France integrates the credit-module system within its dual education model, particularly in industrial sectors. Students receive credit for each academic module and gain additional credits through practical experience. The result is a streamlined education process that improves employability and produces industry-ready graduates.Global Insights and Statistical Evidence. The integration of dual education and credit-module systems globally has proven essential in ensuring flexibility and workforce readiness. Countries like Germany, Switzerland, Austria, the UK, and France have demonstrated that this approach effectively blends theory with practice, significantly boosting employment rates among graduates.

• Germany: Over 1.3 million students were enrolled in dual education programs in 2021, with 87% securing employment in their respective fields upon graduation.

• Switzerland: By 2020, over 70% of dual education graduates had entered the workforce. More than 50% of students gain experience in industry-based internships.

• Austria: Since the 1980s, dual education has expanded considerably, with 40% of all students now participating. In 2021, more than 70,000 young people were enrolled in dual programs.

• United Kingdom: Dual education was fully institutionalized in 2013, with a 72% employment rate among dual program graduates by 2020.Research indicates that dual education not only enhances job readiness but also ensures long-term professional competence. A 2019 study found that over 85% of dual education students successfully applied their practical skills in real work environments.Employers, too, rate dual education highly: in a 2020 survey, 78% of German employers considered dual program graduates to be well-prepared professionals.

RESULTS AND DISCUSSION

Integration in the Digital Age. With the rise of digital transformation and Industry 4.0, dual education is evolving to include emerging technologies such as automation, robotics, artificial intelligence, and the Internet of Things (IoT). In 2023, many

developed nations–including Germany and Switzerland–began incorporating these themes into their dual education curricula, creating new opportunities for Application for Uzbekistan. For institutions such as Bukhara Engineering Technological Institute, adopting a dual education model integrated with the creditmodule system represents a strategic step towards improving student qualifications and employability. This model ensures that students not only acquire academic knowledge but also develop practical skills aligned with industry demands.The dual education model combines theoretical instruction at universities with internships and work-based learning at industrial enterprises. Students alternate between these environments, gaining practical experience while studying.

The credit-module system divides the educational process into specific learning modules, each assigned a defined number of credit points. Students earn these credits upon successful completion of the modules–whether theoretical or practical.

In conclusion, while the integration of dual education with the credit-modular system is still evolving in Uzbekistan, international experience provides a solid foundation to guide its effective implementation. Continued policy innovation, stakeholder coordination, and investment in human resources are key to achieving the full potential of this hybrid model.

CONCLUSION

The integration of dual education with the credit-modular system represents a transformative approach to modernizing higher education in line with global labor market demands. International experiences—particularly from Germany, Austria, and other developed countries—demonstrate that this hybrid model enhances students' academic and professional readiness, fosters employer engagement, and bridges the gap between education and employment.For Uzbekistan, where educational reforms are gaining momentum, adopting this integrated system holds considerable potential. Early pilot implementations suggest that students engaged in dual-credit modular programs are more adaptable, practically skilled, and employment-ready upon graduation. However, the successful expansion of this model requires:

- strengthening institutional partnerships with industry stakeholders;
- developing modular curricula that embed real-world tasks and competencies;
- enhancing regulatory and logistical frameworks;
- and ensuring continuous professional development for faculty and mentors.

Ultimately, the dual-credit modular integration offers a sustainable pathway for enhancing the relevance, quality, and efficiency of higher education. By drawing from international best practices and adapting them to national priorities, Uzbekistan can develop a more resilient and labor-responsive education system that empowers graduates to thrive in the 21st-century economy.Integrating dual education with the credit-module system enhances the efficiency, flexibility, and relevance of the

educational process. It equips students with the theoretical foundation and practical expertise necessary for successful careers. As demonstrated by international best practices, this integrated approach strengthens the linkage between academia and industry, offering a viable pathway for educational reform in Uzbekistan.

REFERENCES:

1. Bekmuratov, B. (2019). Application of the dual education system in higher education: Challenges and solutions. Journal of Higher Education and Innovation, 4(2), 45–53.
2. Iskanderov, R. (2021). Harmonization of practical and theoretical training: Approaches to dual education. Scientific Research in Physical and Technical Pedagogy, 5(1), 29–35.
3. Тошева, Н. М., Тухтаева, З. Ш., & Атамурадова, Г. О. (2014). Значение самостоятельного образования при формировании творческой деятельности. Молодой ученый, (8), 878-879
4. Kamilov, M. (2022). The role of higher education institutions in the implementation of dual education. Education in Uzbekistan: Issues and Solutions, 7(3), 67–72.
5. Yuldashev, D. (2023). Expanding dual education in higher education: Proposals and opportunities. Modern Approaches in Education, 2(6), 77–84.
6. Zebo, T. X., & E'zoza, E. (2023). Oliy ta'limda talabalar bilan olib boriladigan o'quv-metodik va ma'naviy-ma'rifiy ishlarning o 'ziga xos xususiyatlari. Innovations in Technology and Science Education, 2(17), 489-496.
7. Тухтаева, З. Ш. (2018). Олий таьлимда ихтисослик ва мутахассислик фанлар узвийлиги ва интеграциясини таьминлаш муаммолари. Касб-хунар таьлим, 4, 21.
8. Тухтаева, З. Ш. (2012). Методика межпредметной преемственности в профессиональном образовании.
9. Sh, T. Z. (2020). Integration of special subjects in higher education. InternationalEngineering Journal For Research & Development, 5(3), 125-131.
10. Sharifovna, T. Z. (2019). Organizational-methodological inter-objective integrations in teaching special disciplines. European Journal of Research and Reflection in Educational Sciences Vol, 7(12)