

Dual Education in the Republic of Serbia

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The paper presents dual education as one of the priorities of the government of the Republic of Serbia in the field of education, youth employment, and economic development. The definition of dual education as a part of the system of education and training through theoretical teaching and work-based learning with the employer is given. The paper presents the results of the introduction of dual education in secondary schools so far: About 10,038 students are included; the number of dual educational profiles is 47, while the number of companies participating in the implementation of work-based learning reached 900. The paper presents and sets the goals of the dual model of higher education studies. The role of key institutions, organizations, and bodies that participate in the implementation of the dual model of education in the Republic of Serbia is explained.

Keywords: dual education, higher education, work-based learning, employer

Introduction

In the 21st century, young people need to accept the philosophy of education as their philosophy of life. Rapid technical-technological development brings with its new challenges and the question is how to overcome these challenges today. Among other things, it brings awareness to young people that education is a pillar of building a successful professional career (Grujić, 2019; 2020).

Serbia is making a significant effort to provide skilled labor for the economy. To that end, the introduction of dual education in the system of secondary and higher education has begun. Dual education is one of the priorities of the government of the Republic of Serbia in the field of education, youth employment, and economic development. "Dual education" is defined in the Law on Dual Education as a model of teaching in the system of secondary vocational education in which through theoretical teaching and exercises in school and work-based learning with the employer, acquire, improve and build knowledge, skills, abilities and attitudes in accordance with the qualification standard and the curriculum. The advantages of dual education are reflected in the fact that pupils and students, immediately after graduating from vocational school or faculty, will be able to work independently in the field of their choice. The most important thing is that their knowledge will be in line with technological development. They acquire all the competencies needed for modern innovative progress, in order to develop social skills and think proactively. This is expected to exploit the potential to advance the transition from school to the world of work and offer young people a career planning perspective. Innovation and investment in education are considered to be key preconditions for preparing society for the future.

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The introduction of a dual education system in Serbia is a complex task that does not allow simply copying the dual system from other countries, such as Germany, Austria, or Switzerland. In order to achieve sustainable results, a lot of work must be done on adapting the dual system from those countries to the existing conditions of the Serbian education system and economy.

Although the adoption of a “dual system” similar to the Austrian, German, or Swiss education system depends on the existence of a number of cultural, political, and economic conditions, the implementation of the “dual principle” is crucial for changing the education system in Serbia (Euler, 2015). Thus, for example, Switzerland is not comparable to Serbia in terms of educational background and its system of dual education cannot be completely copied, but it can be learned from. Serbia has only recently started implementing the Law on Dual Education, while Switzerland has more than a hundred years of experience in managing its vocational and professional education (Grujic, 2019; 2020).

In terms of legislation at the level of secondary and higher education, the Republic of Serbia has adopted the Law on Dual Education and the Law on the Dual Model of Studies in Higher Education. It can be said that according to the achieved results, Serbia has become a leader in the process of improving the quality of education in the region. This quality is to be achieved through dual education. Dual education is a model of realization of the learning process in two places, which enables an improved way of acquiring knowledge and skills (Grujic, 2019; 2020).

Dual Education in Serbia

The project of dual education in Serbia was started 20 years ago by the German Agency for International Cooperation in the Field of Economic Development (GIZ), with the consent and support of the ministry in charge of education. Firstly, a pilot project for the application of dual education through educational profiles in the field of economics was launched. The joint international team then continued to implement reform activities in this area. During this period, GIZ focused its support on industrial occupations and profiles, such as industrial mechanic, locksmith-welder or electrician. Then the German-Serbian Chamber of Commerce joined as a partner. This is because many German chambers of commerce abroad run such projects in cooperation with companies that are their members and need well-trained professionals (Grujic, 2019; 2020).

In Serbia, we are working on making dual education only a supplement to the current model of vocational education, and that is why it differs from the model in other European countries. The fund of hours of professional subjects is divided into learning in an educational institution and work-based learning, that is, a real work environment. Education does not only mean acquiring knowledge but also the way we teach young people to “use their reason”. The goal is to make dual education an electoral platform on which young people, in addition to teaching, will also acquire a way of thinking. The advantages are that young people get the chance to acquire, in addition to theoretical knowledge, the skill of knowledge management. This will enable them a successful career with a significantly higher level of self-confidence (Grujic, 2019; 2020).

The current situation is mainly reflected in the fact that young people come to the labor market with diplomas that are not in the function of modern knowledge. The main disadvantage today is that young people did not have the opportunity to develop skills. They are most often cheap workforce in companies in which the owners, thanks to this knowledge, have acquired significant financial resources. To improve this, the dual

model implies that young people actively participate in the work-based learning process in companies. They are also provided with licensed instructors. Employers together with educational institutions create modern curricula for teaching and learning. In that way, young people are trained to become leaders. This allows them to dictate the conditions under which they want to work because they improve both the success and innovation of the company. This reform ensures that all stakeholders see it as a benefit to themselves. The model of dual education in Serbia fulfills all the conditions: Young people acquire the highest level of knowledge and skills in accordance with the needs of the modern market, and companies get creative, educated people for their employees who make their business systems competitive (Grujic, 2019; 2020).

Special attention is paid to the introduction of dual education in areas, such as digitized processes and knowledge acquisition in Industry 4.0. The advantages offered by dual education are licensed instructors, motivated teachers, but also a financial compensation as a reward for successful learning in the company. A big problem that dual education wants to solve is the stay of young people in Serbia. That is why the Strategy of the Government of RS puts emphasis on the arrival of the most successful companies, which has increased the chances of young people from dual education to prove that they can build a career in their country (Grujic, 2019; 2020).

When making a decision on investments in our country, domestic businessmen and foreign investors first ask what our staff is like, what their qualifications and skills are. The quality of staff is one of the key factors when making an investment decision: just as important as political stability and security, a friendly legal and regulatory environment, the quality of infrastructure, production costs. Only with people who have the qualifications and skills needed by the modern economy, who can adapt to the rapid technological changes and demands of the digital economy, will there be more investment, both domestic and foreign, and new jobs for our companies and new jobs for our citizens. That is why it is important that we educate children who will replace report books, instead of waiting at the bureau, with employment contracts here in Serbia. It is also important that we produce according to the standards of developed markets and export products to the world, not people (Grujic, 2019; 2020).

The Ministry of Education, Science and Technological Development has committed itself to educational reforms in the light of accession to the European Union. Education reform is focused on the modernization of general, vocational and higher education, digitalisation, entrepreneurship, scope and quality of preschool education. Serbia has launched an ambitious skills development agenda, taking into account the skills that will be needed in the future. The Ministry of Education, Science and Technological Development has expanded its capacity to meet national priorities, establishing a dual education sector and a digitalization sector in education and science (Grujic, 2019; 2020).

Key Institutions, Organizations and Bodies

A prerequisite for the successful realization of the designed National Model of Dual Education is continuous and quality intersectoral cooperation and institutional partnership at various levels (national, regional, and local). Figure 1 shows a graphical presentation of all key actors in the process of planning, implementation, but also monitoring and further improvement of the established National Model of Dual Education.

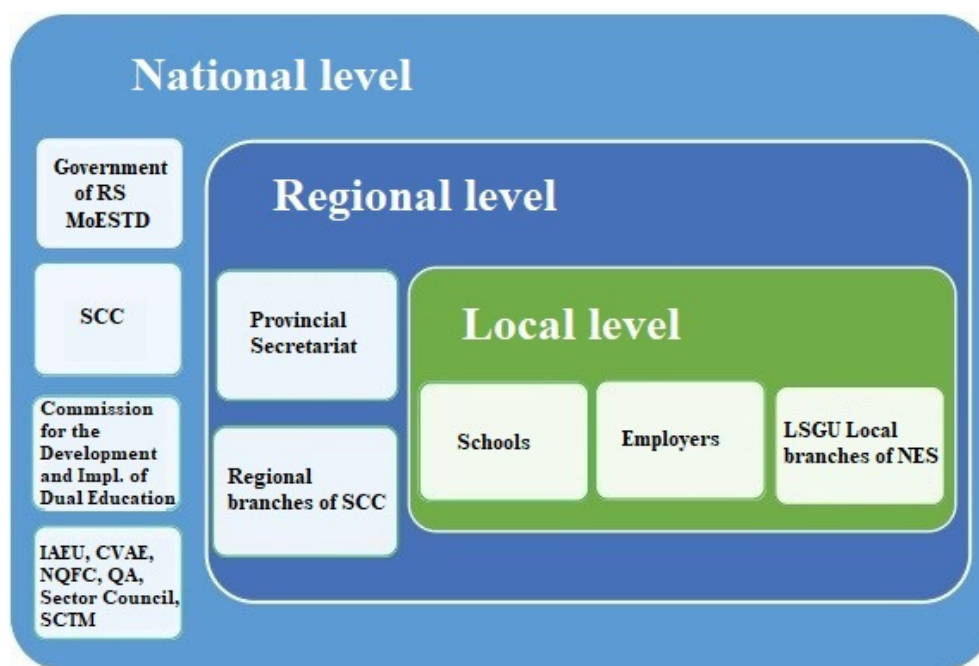


Figure 1. Main actors in the implementation of dual education at different levels.

Notes. RS—Republic of Serbia, MoESTD—Ministry of Education, Science and Technological Development, SCC—Serbian Chamber of Commerce, IAEU—Institute for the Advancement of Education and Upbringing, CVAE—Council for Vocational and Adult Education, NQFC—Council for the National Qualifications Framework, QA—Qualifications Agency, SCTM—Standing Conference of Towns and Municipalities, LSGU—local self-government units, and NES—National Employment Service.

Ministry of Education, Science and Technological Development

The Ministry of Education, Science and Technological Development (MoESTD) is responsible for: research, planning, and development of preschool, primary, secondary and higher education and student standards; inspection supervision in pre-school, primary, secondary, and higher education; participation in the construction, equipping, and maintenance of facilities in which classes are held; practical application and other issues. Furthermore, the obligations of the MoESTD include: professional evaluation and verification of professional development of employees in educational institutions; recognition and nostrification of foreign certificates and diplomas; improving social care for talented students and students who need special support in education; and other obligations provided by law. The Sector for Secondary Education and Adult Education of the MoESTD is responsible for secondary vocational education, general and artistic secondary education, adult education, regulation and administrative issues, while the Sector for Dual Education deals with dual education, entrepreneurship, career guidance and counseling, professional orientation and guidance and financial literacy at all levels of education. School administrations (as regional units of MoESTD), in cooperation with the competent authorities of the autonomous province, are responsible, among other things, for drafting a municipal or city proposal for a plan for enrolling students in secondary schools (Grujic, 2019; 2020).

Chamber of Commerce and Industry of Serbia

The Chamber of Commerce and Industry of Serbia (CCIS) together with the MoESTD has a leading role in the implementation of dual education. It achieves cooperation between the education sector and the employment sector. The responsibilities of the CCIS are in the field of accreditation of employers for

work-based learning, training and licensing of instructors, keeping the register of employers and contracts on dual education (contract signed by the school and the employer). Representatives of the CCIS are members of the Sector Skills Councils and the Council for the National Qualifications Framework in accordance with the Law on the National Qualifications Framework in Serbia (Grujic, 2019; 2020).

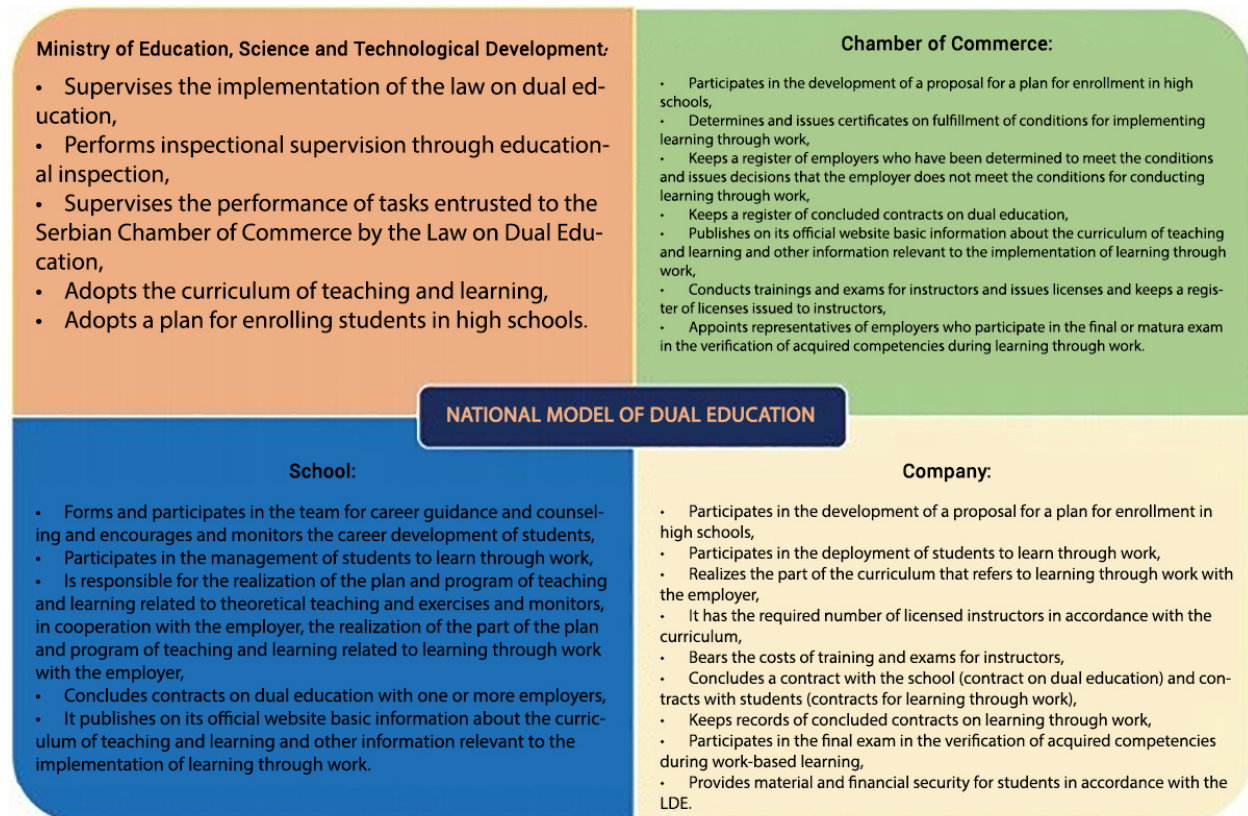


Figure 2. Overview of the main roles of key actors from the education system and the world of work in achieving dual education.

The legal framework for the realization of the National Model of Dual Education is the following set of laws and bylaws¹.

¹ See Law on Dual Model Studies in higher education, “Official Gazette of the Republic of Serbia”, No. 66/2019 of 18.9.2019; Law on the Fundamentals of the Education System, “Official Gazette of the Republic of Serbia”, No. 88/17, 27/18—other laws and 10/19); Law on Secondary Education, “Official Gazette of the Republic of Serbia”, No. 55/13, 101/17 and 27/18—second law; Law on Dual Education, “Official Gazette of the Republic of Serbia”, No. 101/17) ü Rulebook on the curriculum of teaching and learning (different documents depending on the educational profile); Rulebook on the final exam program (different documents depending on the educational profile); Rulebook on the training program for instructors and more detailed conditions for taking the exam for instructors, “Official Gazette of the Republic of Serbia”, No. 70/18; Rulebook on the manner of allocating students for learning through work, “Official Gazette of the Republic of Serbia”, No. 102/18; Rulebook on detailed conditions, manner of work, activities and composition of the team for career guidance and counseling in high school that implements educational profiles in dual education, “Official Gazette of the Republic of Serbia”, No. 2/19; Decree on Determining Dangerous Work for Children, “Official Gazette of the Republic of Serbia”, No. 53/17; Rules of the organization, composition and manner of work of the Commission for determining the fulfillment of conditions for conducting learning through work with the employer, “Official Gazette of the Republic of Serbia”, No. 46/18; Law on Health Insurance (Article 22, Paragraph 1), “Official Gazette of the Republic of Serbia”, No. 25/19; Law on Contributions for Compulsory Social Insurance (Article 11, Paragraph 3, Articles 35 and 47), “Official Gazette of the Republic of Serbia”, No. 4/19—adjusted dinar amount; Law on Personal Income Tax, Article 9, Paragraph 23a, “Official Gazette of the Republic of Serbia”, No. 4/19—adjusted dinar amount.

Levels of Dual Education

Dual Education in Secondary Schools

In 2017, the Republic of Serbia adopted the Law on Dual Education, which introduces dual education into the formal education system as a model for the implementation of teaching in the system of vocational education and training. Three rulebooks were adopted: Rulebook on training programme, detailed conditions and other issues of importance for taking instructor examination, Rulebook on placement of students to work-based learning and Rulebook on detailed conditions, operation, activities and composition of the career guidance and counselling team in secondary schools delivering dual education profiles. The Chamber of Commerce and Industry of Serbia has adopted the rulebook on the organization, composition, and methods of work of the Commission for determining the fulfillment of conditions for performing work-based learning with the employer. The full implementation of the Law began in the 2019/2020 school year. In addition to the three mentioned rulebooks, before the full implementation of the Law, the Chamber of Commerce and Industry of Serbia conducted training for instructors, that is, employees in companies. The government of the Republic of Serbia has established the Commission for the Development and Implementation of Dual Education for the implementation and improvement of dual education and a three-year evaluation of the achieved results (Grujic, 2019; 2020).

Dual Model of Studies in Higher Education

The Law on the Dual Model of Studies in Higher Education was adopted on September 18, 2019, with the aim of increasing the relevance of higher education and employability of graduates, modernization of the teaching process in cooperation with the economy and in line with modern technological achievements. This type of teaching implies the direct involvement of employers in the organization and implementation of work-based learning in a real work environment. The Law on the Dual Model of Higher Education Studies stipulates that students conclude an employment-based learning contract with the employer. Student work is not a classic work, but learning through work where they acquire the skills needed to improve their competencies. The essence is to learn the job, and the employer decides whether the student will be employed in his company when he graduates. Employers will not be allowed to hire students for jobs that do not match their profession. Learning based on work in the employer's premises brings a certain number of ECTS points. Students are free to decide whether they want dual education or classic study programs before enrolling in college. The faculties define in their regulations that a student who chooses dual education can return to the classical way of studying and vice versa—that the student who has decided to study in the classical way can switch to dual education. Through this form of education, although it is more demanding and difficult, young people acquire, among other things, practical skills and abilities that will enable them easier entry into the world of work, as well as competencies for career management, lifelong learning and entrepreneurship. This form of education enables employers to participate in the education of future staff. This reduces costs in the long run due to the search for qualified personnel.

Set Goals in the Dual Model of Education in Higher Education

In the Law on the Dual Model of Studies in Higher Education, Article 3, which was adopted on September 18, 2019, the following aims of the dual model of education were set:

- provide the conditions for acquiring, upgrading and developing students' competences in accordance with the labour market needs;

- contribute to enhancing the competitiveness of the Serbian economy;
- ensure the conditions for easier employment after finishing higher education;
- ensure the conditions for further education and lifelong learning;
- develop entrepreneurship, innovativeness, creativity, professional and career advancement of every individual;
- provide the conditions for personal, economic and overall social development;
- develop teamwork ability and a sense of personal accountability at work;
- raise awareness of the significance of health and safety, including occupational health and safety;
- develop the ability of self-evaluation and expression of one's opinion, as well as of independent decision-making;
- promotion of the socially responsible role of an employer in a society².

Achieved Results

Currently in Serbia, approximately 30% of vocational schools have at least one dual educational profile. So far, the following results have been achieved: The dual education system covers about 10,038 students. The number of dual educational profiles, which are realized in 120 secondary vocational schools, increased to 47, while the number of companies participating in the implementation of work-based learning reached 900. In the school year 2020/2021, a total of 2,447 students were enrolled in the first grade of secondary school.

Areas of Work

Areas of work in which the educational profiles are: agriculture, food production and processing, forestry and wood processing, geology, mining and metallurgy, mechanical and metal processing, electrical engineering, textiles and leather, geodesy and construction, transport, trade, hospitality and tourism and chemistry, non-metals and graphics.

The Ministry of Education, Science and Technological Development, intensively in cooperation with domestic and foreign partners, respecting the principles of social partnership, has developed a master plan for the development and implementation of dual education. This ministry is also working on the implementation of promotional activities as well as on the development of a methodology for the application of dual education. It has also developed an important document, the Framework for Monitoring and Evaluating Dual Education, and is working on the analysis of the results achieved by students who complete their education according to the dual education system and who enter the labor market.

Conclusion

Serbia is making significant efforts to provide skilled labor for the economy. To that end, the introduction of dual education in the system of secondary and higher education has begun. This is expected to use the potential to advance the transition from school to the world of work and offer young people a career planning perspective. Innovation and investment in education are considered to be key preconditions for preparing society for the future.

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² See Law on Dual Model Studies in higher education, "Official Gazette of the Republic of Serbia", No. 66/2019 of 18.9.2019.

number of dual educational profiles, which are realized in 120 secondary vocational schools, increased to 47, while the number of companies participating in the implementation of learning through work reached the figure of 900. In the school year 2019/2020, a total of 2,533 students were enrolled in the first grade of high school.

With the introduction of dual education in schools, the adoption of legislation at the level of dual secondary and higher education, but also the results achieved, Serbia has become a leader in the region in the process of improving the quality of education. With this model of teaching, young people acquire a high level of knowledge and skills in accordance with the needs of the modern market, and companies get creative, educated people for their employees who make their business systems competitive.

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