VETractive!

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The project "VET is attractive! - Promotion of Vocational Education and Training (VET) by career counsellors"

VET is attractive!

Improving the quality and attractiveness of vocational training and education in Poland and Croatia

Good practice guide

2024

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Elaboration:
Radom Chamber of Commerce and Industry (Poland)
Elektrostrojarska škola Varaždin (Croatia)

IZBA PRZEMYSŁOWO-HANDLOWA ZIEMI RADOMSKIEJ

Škola za nove tehnologije
ELEKTROSTROJARSKA ŠKOLA VARAŽDIN

Authors:

Katarzyna Skoczylas, Ewelina Sikora.... (Chamber of Commerce and Industry of Radom, Poland)

Igor Kos, (Elektrostrojarska škola Varaždin, Croatia)

Editorial development:

Katarzyna Skoczylas (Chamber of Commerce and Industry of Radom, Poland)

Language correction:

Katarzyna Skoczylas - Polish and English (Chamber of Commerce and Industry of the Radom Area, Poland)

Igor Kos - Croatian and English (Elektrostrojarska škola Varaždin, Croatia)

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IZBA PRZEMYSŁOWO-HANDLOWA ZIEMI RADOMSKIEJ

Radom Chamber of Commerce and Industry
8 Rwańska Street, 26-600 Radom (Poland)
telephone: 048 384 56 60; 600 245 881; 668 446 048
e-mail: izba@radomskibiznes.pl
http:// https://radomskibiznes.pl

ELEKTROSTROJARSKA ŠKOLA VARAŽDIN
Škola za nove tehnologije

Elektrostrojarska škola Varaždin
Hallerova aleja 5, 42 000 Varaždin (Croatia)
Telephone: 042/313-491
e-mail: ess@vz.t-com.hr
https://www.ess.hr/

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1. Introduction

The publication presents a best practices guide developed by the participants of the project "VET is attractive! - Promotion of Vocational Education and Training (VET) by Vocational Counsellors' (2022-1-PL01-KA210-VET-000083332) funded by the European Union under the Erasmus+ Programme, Action KA210-VET - Small-Scale Partnerships in the Vocational Education and Training Sector.

The project was implemented between 2022 and 2024 by a consortium comprising:

1) Chamber of Industry and Commerce of the Radom Area (Poland),
2) Elektrostrojarska škola Varaždin (Croatia).

The need for the project stems, including, from the fact that the reality around us is generating many changes. Progress in civilization, technological progress, Industry 4.0, digital transformation - these are challenges. Challenges for both the young person and the career counsellor.

The European Skills Agenda for Sustainable Competitiveness, Social Justice and Resilience (2020) points out that 'to be successful, accessible lifelong learning for all must become a reality in Europe'. The guiding principle of these aspirations should be the acquisition of the skills needed for the job.

In the partnership evaluation of the project "VET is attractive! - Promotion of Vocational Education and Training (VET) by Vocational Counsellors" an important role is played by strengthening cooperation between vocational counsellors and the business environment.

Surveys conducted by the project partners and interviews with vocational counsellors and teachers of practical vocational training indicate that there is a lack of cooperation between vocational schools and the business environment, a lack of tools for such cooperation, a perceptible mismatch between vocational education and the needs of the labour market and a lack of adaptation of vocational education in terms of technology, tools used on the labour market.

In view of the above, it made sense to take measures to strengthen cooperation between vocational counsellors, vocational training teachers, headmasters of vocational schools and employers in terms of updating the content of education and improving the quality of apprenticeships, and to take measures aimed at adapting to the challenges of Industry 4.0.

The two institutions IPHZR and Elektrostrojarska skola carried out an analysis of the relevant strategic context and defined the institutions' key internationalisation needs for the period 2021-2027, based on the framework of the EU Vocational Education and Training (VET) strategy documents, with the aim of:

- rapid adaptation of VET to labour market needs also in the context of the negative impact of COVID-19;
- compliance with green priorities and digital requirements based on the European Green Deal, which requires comprehensive upskilling (improving existing skills) and retraining (training in new skills);
- extensively developed work-based learning opportunities.

One of the biggest challenges for both institutions in improving the quality and relevance of VET programmes is internationalisation. This has been addressed in the project by both institutions with a balanced development of key competences related to VET and the exploration of EU best practices in innovative VET approaches.

Despite the fact that the level of education in vocational schools is judged to be good, however, expectations on the part of businesses are increasing. This is due to changes in the global economy, as well as trends dictated by the challenges of digital transformation and the 'industry of the future', which will rely heavily on the technological solutions of Industry 4.0. In 2017-2019, a great number of manufacturing companies were struggling to maintain the number of employees, especially in low- and medium-skilled positions. In a perspective of 5-10 years, there may still be a shortage of skilled workers with vocational and secondary technical education, who can demonstrate not only a high level of technical knowledge, but also interdisciplinarity in its practical application. It is therefore necessary to create education systems based on so-called hard theoretical knowledge and practical skills.

The main aim of the project was to increase the attractiveness of VET by providing vocational school management representatives and guidance counsellors with the knowledge, practical methods and good practice examples needed to provide guidance and counselling services to school students as well as their parents and teaching staff.

In our assessment, the project activities have a direct or indirect impact on:

- improving the quality of vocational education and the matching of education and training systems with labour market needs,
- an increase in the employability of vocational school students,
- increasing the chances of vocational students to succeed in the labour market,
- support students in acquiring additional competences to improve their chances in the labour market,
- Strengthening the school's cooperation with employers in updating educational content and enhancing the quality of apprenticeships,
- Increasing and systematising cooperation between vocational schools and entrepreneurs in the field of dual education.

The project also aimed to strengthen cooperation between educational institutions and business by developing and creating examples of good practice and recommendations to assist young people in choosing a career path related to the technical industry and to improve the overall image of vocational education.

The project included study visits to Croatia and Poland, which were attended by representatives of management, vocational education teachers and vocational counsellors from vocational schools. In our opinion, the knowledge and competences they acquired made it possible to fill competence gaps in the development of cooperation with employers, making vocational education more attractive. This was facilitated by the mutual exchange of experiences related to, including, the implementation of dual training. Through dual training, pupils are trained in modern companies and thus learn a profession in practice, which makes them well-qualified and experienced employees. Working in a high-tech environment gives students an advantage and increases their confidence in their next career steps.

However, the introduction of dual education faces a number of problems, which were experienced by employees of the Chamber of Industry and Commerce of the Radom area. Based on current feedback, which is the result of monitoring the effectiveness of the conducted dual training, consisting of opinions of both entrepreneurs, students and vocational counsellors, as well as the result of the promotion of the vocational education pathway so far, they pointed to the necessity of taking further measures to support the communication strategy of enterprises with vocational education.

Through direct participation and exchange of experiences with experts from the project partner country, participants experienced an increase in existing competences, the acquisition of new ones, which also influenced the development of key competences (multilingualism, digital, personal, social and lifelong learning competences).

The publication presents examples of good practice in improving the quality and attractiveness of vocational training and education in Poland and Croatia. It was developed in three language versions: Polish, English, Croatian.

The good practices described include activities that, in the opinion of the project implementers, can inspire other organisations to undertake similar activities aimed at:

- Strengthening the school's cooperation with employers in updating educational content and enhancing the quality of apprenticeships,
- Increasing and systematising cooperation between vocational schools and entrepreneurs in the field of dual education.

The background to the examples of good practice is the presentation of brief descriptions of the history and development of vocational education in Poland and Croatia including the legal framework, descriptions of implemented reforms and basic statistical data on the number of students, programmes and institutions involved in the vocational education and training sector. Information on the implementation of vocational counselling in vocational schools in Poland in Croatia is also relevant.

The recommendations presented in the publication as a result of the exchange of international experience between Polish and Croatian experts will, in our opinion, allow readers to identify both the strengths of the existing cooperation and the elements requiring improvement. It will also enable them to implement selected examples in their own vocational training environment.

We address the content of the publication to a wide audience linked directly or indirectly to vocational education in Poland and Croatia and other countries. We encourage you to familiarise yourself with our study:

- management representatives of vocational schools,
- vocational teachers,
- teacher-career advisors,
- entrepreneurs,
- representatives of business environment institutions,
- decision-makers managing education at all levels,
- representatives of local society with an interest in improving vocational education.

The reader will get answers to the following questions after reading the content in the publication:

1) How has vocational education developed in Poland and Croatia?
2) How do vocational schools in Poland and Croatia cooperate with employers to adapt educational programmes to the needs of the labour market?
3) What actions can be taken to improve curriculum quality?
4) What support is given to the professional development of teachers in Poland and Croatia to better meet the challenges of new technologies?
5) What measures are being taken to increase the chances of vocational students succeeding in the labour market?
6) By taking what measures can the cooperation of a vocational school with employers be strengthened in terms of updating the content of education or improving the quality of apprenticeships?

7) How is the attractiveness of vocational training in Poland and Croatia increasing?
8) What are the problems facing vocational education in Poland and Croatia?
9) What can be done to improve vocational training systems in both countries?

In conclusion, our publication provides a solid basis for the development of further international communication and cooperation, as a reference point for local, national and international efforts to improve the quality and attractiveness of vocational education.

2. Overview of vocational education and training in Poland and Croatia

The chapter presents:

- brief descriptions of the history and development of vocational training in Poland and Croatia;
- the current legal framework, structure and reforms implemented over the past few years in both partner countries;
- basic statistics on the number of students, programmes and institutions involved in the VET sector;
- information on the implementation of career counselling in vocational schools in Poland in Croatia.

2.1 The vocational training system in Poland

History and development of vocational training in Poland

Vocational education in Poland has evolved over the centuries, adapting to changing socio-economic conditions and the needs of the labour market. Its development can be divided into several key stages: from medieval craft guilds, through the development of vocational schools in the 19th century, to contemporary reforms taking into account globalisation and the digitalisation of the economy.

1. Medieval origins (13th-18th centuries)

The first forms of vocational training in Poland appeared in the Middle Ages as part of craft guilds. These institutions performed not only economic, but also educational and social functions. The transmission of knowledge took place in the master-apprentice system. Pupils began their education in craft workshops, where they acquired practical skills in trades such as blacksmithing, pottery or weaving. The journeyman and master's examinations, organised by guilds, were a form of competence verification.

This system was based on long-standing traditions and internal regulations of the guilds, which determined the length of study, the standards of work and the duties of the student. In the modern period (16th-18th centuries), the growth of cities and the increased importance of crafts led to the spread of this form of vocational education.

As Roman Marcinek notes: "Craft guilds became the first vocational training institutions in Poland that combined practical education with education in the spirit of professional ethics" (Marcinek, 2001, p. 45).

2. the period of partition (1772-1918)

The partitions of Poland in the 18th century influenced the development of vocational education, which developed at different rates in the individual partitions. The most dynamic development took

place in the Prussian and Austrian annexations, where the authorities promoted the development of educational institutions. In the Russian partition, due to the Russification policy, this development was more limited.

Prussian annexation

In the Prussian partition, the first industrial schools were established, such as the Mechanical School in Poznan (1830). Compulsory schooling was also introduced, which fostered the development of primary and vocational education.

Austrian annexation

In Galicia, the development of vocational education was given a boost by the 1873 law, which laid down the rules for industrial and agricultural schools. Among others, weaving schools were established in Biała and Nowy Targ.

Russian annexation

In the Kingdom of Poland, the Tsarist authorities restricted the development of institutions of a national character, but managed to establish several important technical and commercial schools, such as the Warsaw School of Commerce (1866).

The development of vocational schools during this period was a response to the needs of industrialisation. As Zbigniew Kwieciński emphasises: 'The differences in the development of vocational education in the partitions were one of the factors influencing the subsequent difficulties in integrating the educational system in the reborn Poland' (Kwieciński, 2014, p. 112).

3 Vocational training in the Second Republic (1918-1939)

After regaining independence in 1918, a key task became the integration of the education system. Grabski's reform of 1924 introduced vocational schools as an integral part of the Polish education system. This was a landmark moment that laid the foundations for modern vocational education.

Types of vocational schools in the Second Republic:

- Industrial schools - prepared workers for the growing industry;
- agricultural schools - supported the modernisation of agriculture;
- Trade schools - developed trade and management competences.

By the end of the 1930s, the number of vocational schools in Poland had increased significantly. By 1938, there were already more than 500 such establishments, indicating the dynamic development of this segment of education.

4 Vocational training during the Second World War (1939-1945)

The period of World War II brought great losses to the Polish education system, including vocational education. The German occupiers closed most schools, leaving only those that prepared workers for the war economy of the Third Reich.

Secret education, organised by the Polish underground, played a key role in maintaining the continuity of education. As historians emphasise: "Despite repression, Poles managed to create an underground education system that included vocational training" (Marcinek, 2001, p. 145).

5 Vocational training in the People's Republic of Poland (1945-1989)

After World War II, vocational education became one of the priorities of the educational policy of the People's Republic of Poland. Basic vocational schools (ZSZ) and technical schools were introduced to meet the needs of the planned economy.

Main features of the communist system:

- linking schools to workplaces - e.g. Huta Katowice had its own workplace school;
- the dominance of industrial professions - mainly technicians and workers for heavy industry were trained;
- central planning - the structure of education was strictly subordinated to the needs of state-owned enterprises.

Despite many successes, such as mass vocational training, the system has been criticised for being inflexible and mismatched to the changing needs of the labour market.

6. systemic transformation (after 1989)

After 1989, the transformation of the vocational education system began, resulting from the transition to a market economy. Key changes included:

- reducing the role of the state in the management of vocational schools;
- the introduction of flexible curricula, taking into account the needs of employers;
- development of qualification courses and cooperation with the private sector.

7 Contemporary reforms (post-2010)

The most important change in recent years has been the introduction of first- and second-level trade schools in 2019, with the aim of rebuilding the prestige of vocational education. The reform also took into account the development of the dual education system, which combines theory and practice in enterprises.

In summary, the history of vocational education in Poland shows that the system has always been closely linked to the needs of the economy. From medieval guilds to modern trade schools, vocational education has played a key role in the country's socio-economic development. The current reforms aim to restore its rightful place, especially in the context of 21st century challenges such as digitalisation and globalisation.

2.1.2. Legal framework, structure and changes implemented in Polish vocational education from 2019 onwards

Legal framework for vocational education in Poland

The education system in Poland, including vocational education, is regulated by a number of legal acts that define the organisation, rules of operation and objectives of the various levels of education. The key legal acts and their relevance to vocational education are outlined below.

Constitution of the Republic of Poland of 2 April 1997 (Journal of Laws 1997, No. 78, item 483).

The Polish Constitution sets out the fundamental principles of the education system:

- Article 70(1): Everyone has the right to education and education in public schools shall be free.
- Article 70(4): The public authorities shall ensure that citizens have universal and equal access to education by also promoting vocational education.

This overarching law places an obligation on the state to create conditions conducive to the development of the education system at all levels, including vocational training.

2 The Act of 14 December 2016. - Education Law (consolidated text Dz.U. 2024 item 737)

The Education Law forms the basis for the organisation of the education system in Poland, specifying:

- the structure of the education system, including the division into primary schools, secondary schools (secondary schools, technical schools, trade schools) and further education institutions;

- rules for the establishment of public and non-public schools;
- compulsory schooling and compulsory education, lasting until the age of 18.

In the context of vocational training, the Act introduces first- and second-level trade schools and technical schools, enabling the acquisition of vocational qualifications.

3. the Act of 7 September 1991 on the educational system (consolidated text Dz.U. 2024, item 750)

Although partly replaced by the Education Law, it still regulates certain aspects of the education system:

- introduces detailed provisions on vocational and continuing education, including a framework for vocational examinations;
- defines the objectives of vocational education, such as preparation for work in a specific profession and for activity in the labour market;
- regulates the cooperation of vocational schools with employers and the organisation of practical vocational training.

4. the Act of 22 November 2018 amending the Act - Education Law and other acts (Journal of Laws 2018, item 2245, as amended)

The 2019 reform was crucial for vocational education. It introduced, among other things:

- Replacement of basic vocational schools with first- and second-level trade schools.
- National vocational qualification system, based on modules and market qualifications.
- A dual training system that combines theoretical learning at school with work experience at the employer's premises.
- Obligation for schools to cooperate with professional organisations and local businesses.

5. the Act of 26 June 1974. - Labour Code (consolidated text Dz.U. 2023 item 1465 as amended)

The Labour Code plays an important role in vocational training, particularly in relation to apprenticeships and apprenticeships:

- Articles 190-197: Regulates the employment of young workers who are learning an occupation;
- sets out the terms and conditions of the contract of employment for vocational preparation and the rules for the implementation of practical vocational training.

6. Regulations of the Minister of Education

The regulations clarify statutory provisions and provide detailed guidelines for general and vocational education.

The most important regulations common to general and vocational education in Poland are:

a) on the core curriculum for pre-school education and the core curriculum for general education for primary school, including for pupils with moderate or severe intellectual disabilities, general education for an industry school of the first degree, general education for a special needs school and general education for a post-secondary school (Journal of Laws 2017, item 356, as amended).

The document specifies:

- the core curriculum for pre-school education, which indicates:
  - objectives of pre-school education, including supporting the holistic development of the child,
  - preventive and educational tasks of the kindergarten,
  - the performance outcomes that children should achieve at the end of pre-school education;

- the core curriculum for primary education, including:
  - general education objectives, including the development of key competences,
  - the learning content and skills that students should master at each stage of their education,
  - special requirements for pupils with moderate or severe intellectual disabilities;
- the core curriculum for general education for the lower secondary industrial school, including:
  - the aims and objectives of general education in the context of preparation for professional work,
  - teaching content adapted to the specificities of vocational training;
- the core curriculum for general education for a special needs school, including:
  - the aims and objectives of general education in the context of preparation for independent adult life;
  - teaching content adapted to the needs of pupils with disabilities.
- the core curriculum for post-secondary education:
  - the aims and objectives of general education in the context of complementing vocational qualifications.
  - teaching content adapted to the specificities of post-secondary education.

This regulation aims to ensure that education at different levels of education is consistent and of high quality, and adapted to the needs of students with different abilities and requirements.

The core curriculum for general education is one of the most important legal instruments for the management of Polish education. As of 1 September 2019, new types of 4-year general secondary school and 5-year technical school (post-primary schools) were established and the respective existing secondary schools were created or statutorily transformed. As of 1 September 2020, industry upper secondary schools for graduates of industry upper secondary schools (these are entirely new schools) have begun to operate.

The core curriculum for vocational education is published in the form of a regulation and is also posted on the website of the Centre for the Development of Education: https://ore.edu.pl/2017/03/podstawa-programowa-ksztalcenia-w-zawodach/ (accessed May 2024).

b) on the core curriculum of general education for general secondary school, technical secondary school and upper secondary school (Journal of Laws 2018, item 467, as amended).

The document specifies:

- general education objectives:
  - developing key competences such as analytical, synthetic, logical and creative thinking and communication skills,
  - preparing students for active participation in social and professional life,
  - fostering attitudes conducive to further individual and social development, such as honesty, responsibility, cognitive curiosity and entrepreneurship;
- learning content:
  - defining the range of knowledge and skills that pupils should master at each stage of their education,
  - integration of theory and practice, including the development of skills in the use of modern information and communication technologies;
- implementation conditions:
  - requirements for school equipment and teacher qualifications,

- principles for organising the teaching process, including methods and forms of working with pupils;

- assessment and evaluation:
  - principles for assessing student achievement and monitoring the implementation of the core curriculum,
  - procedures for evaluating curricula and adapting them to changing educational and social needs.

c) Regulation of the Minister of Education of 20 May 2024 on framework teaching plans for public schools (Journal of Laws 2024, item 781).

The document specifies:

- the scope of the framework teaching plans:
  - determining the weekly or semester hours for pupils in each class or semester in different types of school.
  - inclusion of compulsory general and vocational education classes.
  - classes with educators on relevant social, health, legal, financial, climate and environmental issues.
- special educational needs:
  - minimum weekly hours of remedial classes for pupils with disabilities,
  - career guidance classes;
- additional educational activities:
  - activities to develop pupils' interests and talents,
  - activities related to the development of professional competences in vocational training schools,
  - religion or ethics classes, upbringing for family life, learning a national minority language, an ethnic minority language, a regional language and learning one's own history and culture.
- organisation of activities:
  - the rules on the allocation of additional hours for selected educational activities,
  - conditions for the implementation of remedial classes, psychological and pedagogical assistance and classes within the training programme in the military preparation unit.

This regulation aims to ensure consistency and high quality of education in public schools and to adapt the educational offer to the needs of students.

d) on the assessment, classification and promotion of pupils and students in public schools (consolidated text Dz.U. 2023 item 2572, as amended).

The document specifies:

- assessment conditions:
  - specific educational requirements adapted to the individual needs of pupils, including pupils with a statement of special educational needs,
  - the grading scale and the rules for determining interim and annual grades;
- pupil classification:
  - the rules for interim and annual classification, including the conditions for obtaining promotion to the next grade,
  - procedures for the conduct of classification and correction examinations;
- promoting students:

- criteria for promoting pupils to the next grade or to a higher level of education,
- rules on conditional promotion for pupils who have not met all the educational requirements;

- documentation and examinations:
  - the way in which the results of assessment and grading are documented,
  - the rules for the conduct of correction and classification examinations, including the composition of examination boards and examination procedures.

This regulation aims to ensure uniform standards for the assessment and classification of students and to adapt these processes to the individual learning needs of students.

e) on the principles of organising and providing psychological and pedagogical assistance in public kindergartens, schools and institutions (consolidated text Dz.U. 2023, item 1798).

The document specifies:

- the scope of psychological and pedagogical assistance:
  - Psychological and pedagogical assistance comprises activities that support the development of pupils, including the diagnosis of the educational and developmental needs and the psychological and physical capabilities of the pupils,
  - organising specialised classes, such as corrective-compensatory classes, speech therapy, sociotherapy and other classes of a therapeutic nature;
- aid organisation:
  - Psychological and pedagogical assistance is organised by the head teacher in cooperation with teachers, tutors and specialists,
  - Support can be provided on an individual or group basis, depending on the students' needs;
- documentation and cooperation:
  - Maintaining documentation on the assistance provided, including individual educational and therapeutic programmes (IPET) for pupils with an assessment of the need for special education,
  - cooperation with pupils' parents and supporting institutions such as psychological-educational counselling centres;
- tasks of specialists:
  - specialists, such as psychologists, pedagogues, speech therapists and therapists, are responsible for implementing measures to support pupils' development and providing psychological and pedagogical assistance,
  - monitoring the effects of the support provided and adapting activities to the changing needs of the students.

This regulation aims to ensure that pupils are supported in their educational and emotional development and that activities are tailored to the individual needs of each pupil.

The most important regulations clarifying the statutory provisions on vocational training are:

a) Regulation of 15 February 2019 on the classification of vocational education professions (consolidated text Dz.U. 2024, item 611).

The document specifies:

- the structure of the classification of occupations, in which:
  - occupations are organised by industry, taking into account the specific vocational skills and the range of their use,
  - Each industry has an assigned occupation, which is indicated by names and numerical symbols;

- qualification levels - occupations are assigned to relevant levels of the Polish Qualification Framework (PRK), which facilitates the comparison of qualifications on the labour market;
- types of school - the types of school in which a profession can be trained, such as lower secondary school, technical school, upper secondary school and post-secondary school, are specified;
- updating the classification, i.e. the possibility of introducing new professions into the classification and updating existing ones in order to adapt education to the changing needs of the labour market.

This regulation aims to organise and standardise the vocational training system, allowing the educational offer to be better adapted to the requirements of the labour market

b) Announcement by the Minister of Education of 27 February 2024 on the publication of the consolidated text of the Regulation of the Minister of National Education on the detailed conditions and manner of conducting the vocational examination and the examination confirming qualifications in the profession (consolidated text Dz.U. 2024 item 552).

The document specifies:

- scope of examinations:
  - The examinations confirming vocational qualifications include a written and a practical part,
  - the scope of the examinations is in accordance with the core curriculum for the profession;
- organisation of examinations:
  - the conditions for organising the examinations, including the requirements for venues,
  - the rules for setting up examination boards and their responsibilities;
- the course of the examinations:
  - procedures for the written and practical parts of the examination,
  - grading rules and pass criteria.
- Documentation and certification:
  - the way the results of the examinations are documented,
  - rules for issuing certificates of professional competence.

This regulation is intended to ensure uniform standards for vocational examinations and their alignment with labour market requirements.

c) Regulation of the Minister of National Education of 22 February 2019 on practical vocational training (Journal of Laws 2019, item 391 as amended).

The document specifies:

- forms of practical vocational training such as:
  - apprenticeships,
  - practical activities,
  - student internships;
- organisation of practical vocational training by defining:
  - requirements for practical training programmes,
  - the conditions to be met by employers taking on apprentices,
  - principles of cooperation between schools and employers.
- implementation conditions, including:
  - workstation equipment,
  - qualifications of practical training instructors,
  - health and safety at work.

- Documentation and assessment by application:
  - the way in which the practical training is documented,
  - rules for the assessment of students during practical training.

This regulation aims to ensure that practical training is of high quality and adapted to the needs of the labour market

d) on the general objectives and tasks of education in vocational education professions and the classification of vocational education professions (consolidated text Dz.U. 2024, item 611).

The document specifies:

- general educational aims and objectives, including:
  - Preparing students for vocational work and active functioning in the labour market,
  - ensuring full professional qualifications and the possibility of obtaining additional professional qualifications,
  - integration of general and vocational education, taking into account the key competences;
- classification of occupations for vocational education:
  - organising occupations by industry and assigning appropriate qualifications to them.
  - specify the types of school in which the profession can be trained (lower secondary school, technical school, upper secondary school, post-secondary school).

The regulation also introduces rules for cooperation between schools and employers, with the aim of adapting education to the needs of the labour market

e) on core curricula for education in vocational trades and additional professional skills for selected vocational trades in vocational education (Journal of Laws 2019, item 991, as amended).

The document specifies:

- the core curriculum, in which:
  - the learning outcomes to be achieved by students, including knowledge, professional skills and personal and social competences, are identified,
  - a breakdown of the learning outcomes into units that can be delivered in vocational skills courses is specified,
  - indicated the conditions for the implementation of the training, including the equipment and facilities necessary for the programme;
- additional professional skills whereby:
  - additional vocational skills have been identified for selected professions, which schools can provide within the hours allocated to vocational education,
  - opportunities were identified to improve professional qualifications in selected professions through the realisation of additional vocational skills.

  This regulation aims to adapt vocational training to the needs of the labour market and to ensure that students are able to obtain full vocational qualifications

f) Regulation of the Minister of Education and Science of 6 October 2023 on continuing education in non-school forms (Journal of Laws 2023, item 2175).

The document specifies:

- forms of lifelong learning, including consideration of:
  - qualification courses,
  - vocational skills courses,

- general competence courses,
- courses that enable you to acquire and supplement your knowledge, skills and professional qualifications.

- the organisation of education, which consists of:
  - rules for the organisation of courses, including curriculum requirements,
  - the conditions to be met by further education establishments,
  - the way in which the course of training and its outcomes are documented.
  - cooperation with employers by defining the principles of cooperation between lifelong learning institutions and employers in order to adapt the educational offer to the needs of the labour market.
- examinations and certification, including:
  - the conditions for conducting examinations confirming professional qualifications,
  - the rules for issuing certificates and course completion certificates.

This regulation aims to ensure high quality continuing education and its adaptation to the dynamically changing needs of the labour market

7 National Qualifications Framework (NQF)

Introduced in 2012, the NQF is the foundation of the vocational education system. The framework:

They make it possible to compare professional qualifications at national and international level.

They divide qualifications into modules that can be acquired in stages through formal and non-formal education.

8. acts relating to the integration of Poland into the European Union

EU integration has influenced the harmonisation of the Polish education system with European standards. Key regulations:

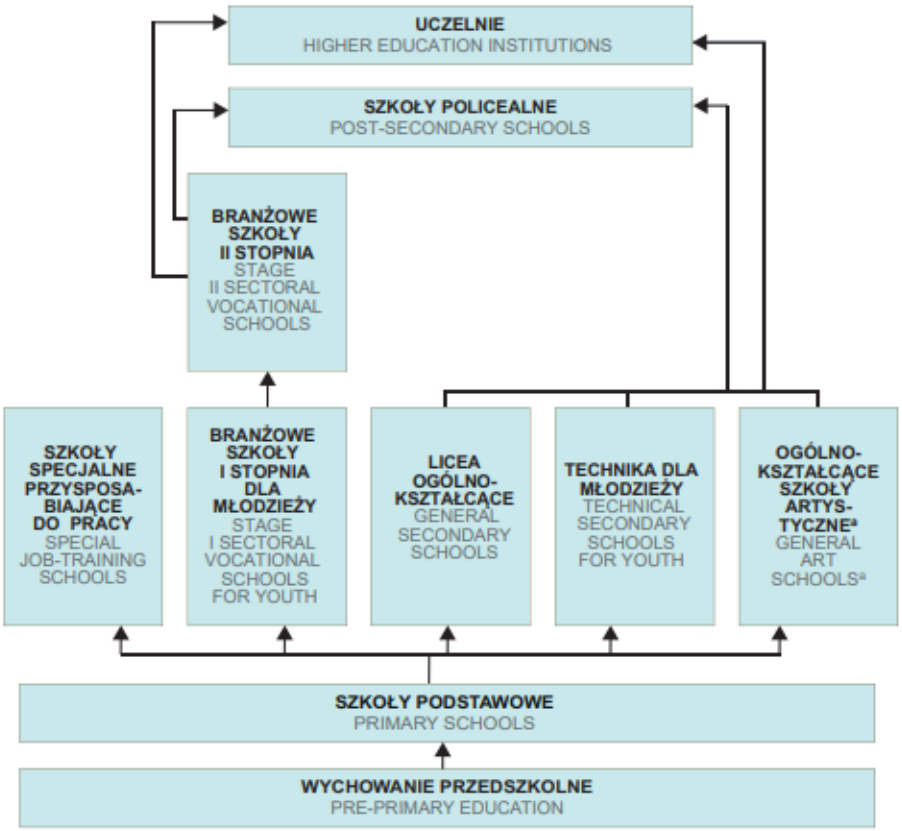
- Decision 2009/C 155/02 of the European Parliament and of the Council - introduction of the European Qualifications Framework (EQF), which is linked to the NQF.
- Erasmus+ programme - supports student and teacher mobility, including in vocational education.

In summary, the legal framework for vocational education in Poland is based on the constitutional principles of universality and equality of access to education, as well as on specific provisions set out in laws and regulations. The 2019 reform of the vocational education system was a key step towards its modernisation, and the introduction of trade schools and the dual system of teaching allows it to better respond to the needs of the labour market. The system is based on contemporary legislation that combines the traditional goals of education with the requirements of a dynamically changing economy.

Structure of vocational education in Poland

As a result of the 2017-2023 education reform, the following school structure was introduced (Figure 1):

- 8-year primary school (primary school);
- 4-year general secondary school;
- 5-year technical secondary school;
- 3-year Stage I sectoral vocational school;
- 2-year Stage II sectoral vocational school;
- 3-year special school preparing for employment;
- post-secondary school.



a Dające uprawnienia zawodowe.
a Leading to professional certification.

Figure 1: Education by level of education in the 2022/23 school year

Source: Oświata i wychowanie w roku szkolnym 2022/2023. Główny Urząd Statystyczny, Urząd Statystyczny w Gdańsku, Warszawa - Gdańsk 2023, p. 40.

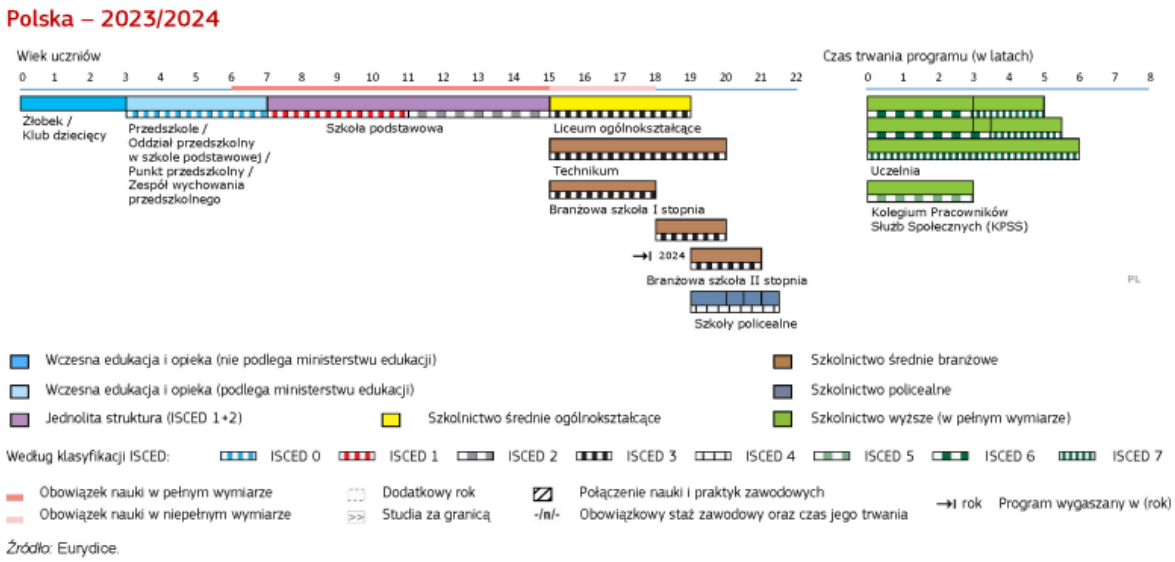


Fig. 2. Diagram of the Polish education system with reference to ISCED classification - school year 2023/2024

Source: Eurydice (2024): Diagram of the Polish education system (accessed June 2024).

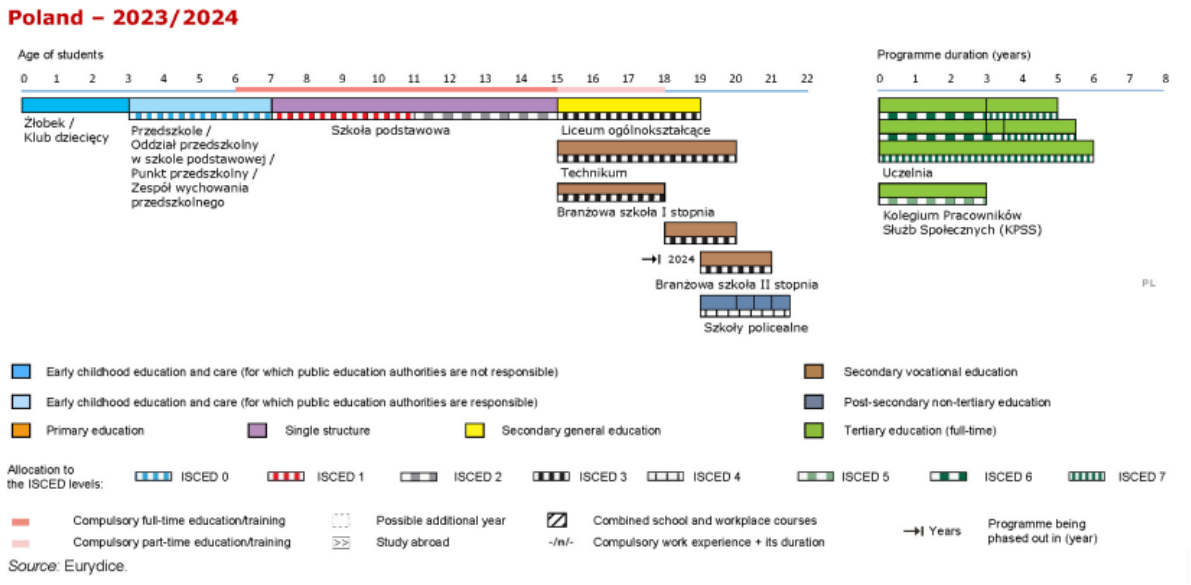


Fig. 2. Structure of the National Education System with reference to classification

Source: Eurydice (2024): Diagram of the Polish education system (accessed June 2024).

The Polish vocational education system is part of the education system and aims to prepare young people and adults for specific professions. Its structure includes several levels and types of schools and forms of education that enable the acquisition of professional qualifications adapted to the needs of the labour market.

Structure of vocational training (Figure 1) and learning pathways (Figure 3)

1) Stage I sectoral vocational school:
   - study lasts three years,
   - is designed for primary school leavers,
   - enables you to gain qualifications in one profession and to continue your studies at an upper secondary vocational school,
   - graduates are awarded a school-leaving certificate and, after passing a vocational examination, the title of skilled worker or equivalent,
   - On completion of an upper secondary school, a graduate can:
     - start working in the profession,
     - continue their studies in an upper secondary vocational school in a profession in which one of the qualifications is obtained in an upper secondary vocational school.
     - continue your studies at a general upper secondary school for adults (from the second year onwards), and you can continue your education in higher education after you have passed the upper secondary school leaving certificate,
     - acquire new qualifications as part of: qualifying vocational courses, vocational skills courses, courses of general competence and other courses enabling the acquisition and completion of knowledge, skills and professional qualifications in adult education institutions.

2) Stage II sectoral vocational school:
   - study lasts 2 years,
   - is the opportunity to gain a supplementary qualification in a particular profession and to take the baccalaureate,

- graduates can obtain the title of technician after passing the vocational examination,
- On completion of an upper secondary school, a graduate can:
  - start working in the profession,
  - once you have passed the baccalaureate exam, you can continue your higher education,
  - acquire new qualifications as part of: qualifying vocational courses, vocational skills courses, courses of general competence and other courses enabling the acquisition and completion of knowledge, skills and professional qualifications in adult education institutions.

3) Technical secondary school:
   - study lasts five years,
   - combines general education (for passing the baccalaureate) with vocational training,
   - graduates are awarded the title of technician after passing the vocational exam and can continue their studies at university after passing the baccalaureate,
   - After completing the technical school, the graduate can:
     - start working in the profession,
     - continue their studies at university,
     - pursue vocational training at a post-secondary school,
     - acquire new qualifications as part of: qualifying vocational courses, vocational skills courses, courses of general competence and other courses enabling the acquisition and completion of knowledge, skills and professional qualifications in adult education institutions.

4) Special schools for work:
   - study lasts 3 years according to an individual educational programme,
   - enable pupils with a moderate or severe mental handicap and pupils with multiple disabilities to learn,
   - enable an adoption certificate to be obtained (without examinations)
   - on completion of the special school for work, the graduate can take up employment or continue his/her studies in adult education institutions.

Adult continuing education takes place in:

1) Vocational and Continuing Education Centres (VETCs) which:
   - provide vocational training for adults in various forms, such as qualification courses or post-secondary schools,
   - qualification courses allow you to acquire or supplement your professional qualifications in a flexible way.

2) Post-secondary schools that:
   - are designed for people with secondary education who wish to gain qualifications in occupations that do not require a high school diploma,
   - They usually last between one and two years,
   - Upon completion of the post-secondary school, the graduate can:
     - go to work,
     - to pursue a higher education if he or she has a baccalaureate degree,
     - acquire new qualifications as part of: qualifying vocational courses, vocational skills courses, courses of general competence and other courses enabling the acquisition and completion of knowledge, skills and professional qualifications in adult education institutions.

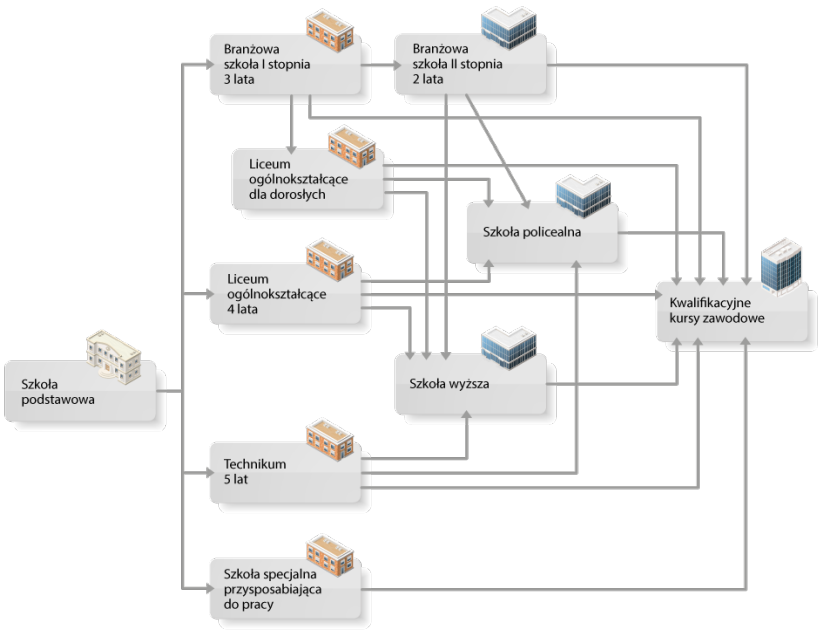


Fig. 3. Education pathways in Poland (valid as of 01.09.2019)

Source: Centre for the Development of Education - Vocational guidance portal - learning pathways https://doradztwo.ore.edu.pl/sciezka-ksztalcenia/ (accessed August 2024).

Professional examinations and qualifications

The system of vocational examinations in Poland is based on qualifications within occupations, in accordance with the classification of occupations of vocational education.

Vocational exams are organised by the District Examination Boards (OKE) and consist of a theoretical and a practical part.

After passing the professional examinations, the graduate is awarded a certificate of qualification in the relevant profession.

Link to the labour market

The Polish vocational education system is oriented towards the needs of the labour market, which is manifested in:

- close cooperation between schools and businesses, e.g. through apprenticeships and traineeships;
- the development of the so-called 'dual system' of education, where theoretical learning at school is combined with practice in the workplace;
- updating the classification of professions and curricula in response to the needs of the economy.

Adult and continuing education

Adults are given the opportunity to gain new qualifications or retrain through:

- qualified vocational courses (QC).
- in-service training courses organised, inter alia, by vocational schools, Vocational and Continuing Education Centres and other further education establishments.

2019 reform

The recent reform introduced, among other things:

- Replacement of basic vocational schools with trade schools.

- New education standards based on market qualifications.
- Increasing the importance of career guidance in primary and secondary schools.

The Polish vocational education system is dynamic and constantly adapted to changing socio-economic realities, with the aim of increasing the employability of graduates and developing professional competences at different stages of life.

Changes being implemented in vocational education from 2019

The structure of the Polish education system has undergone quite significant changes since 1999. The process of significant changes in the education system in Poland was initiated on 1 September 1999. At that time a new type of educational institution was introduced - gymnasium. As a result:

- The primary school was transformed from an 8-year school into a 6-year school,
- General secondary school changed from 4-year to 3-year,
- technical school from a 5-year to a 4-year school.

This structure with the middle school functioned as a stage in the educational process between primary and secondary school until 2019.

The most important change was the educational reform that came into effect on 1 September 2017. This reform abolished lower secondary schools and reinstated an 8-year primary school and a 4-year upper secondary school. It also introduced a 5-year technical school and a 3-year lower secondary school and a 2-year upper secondary school (Figure 4).

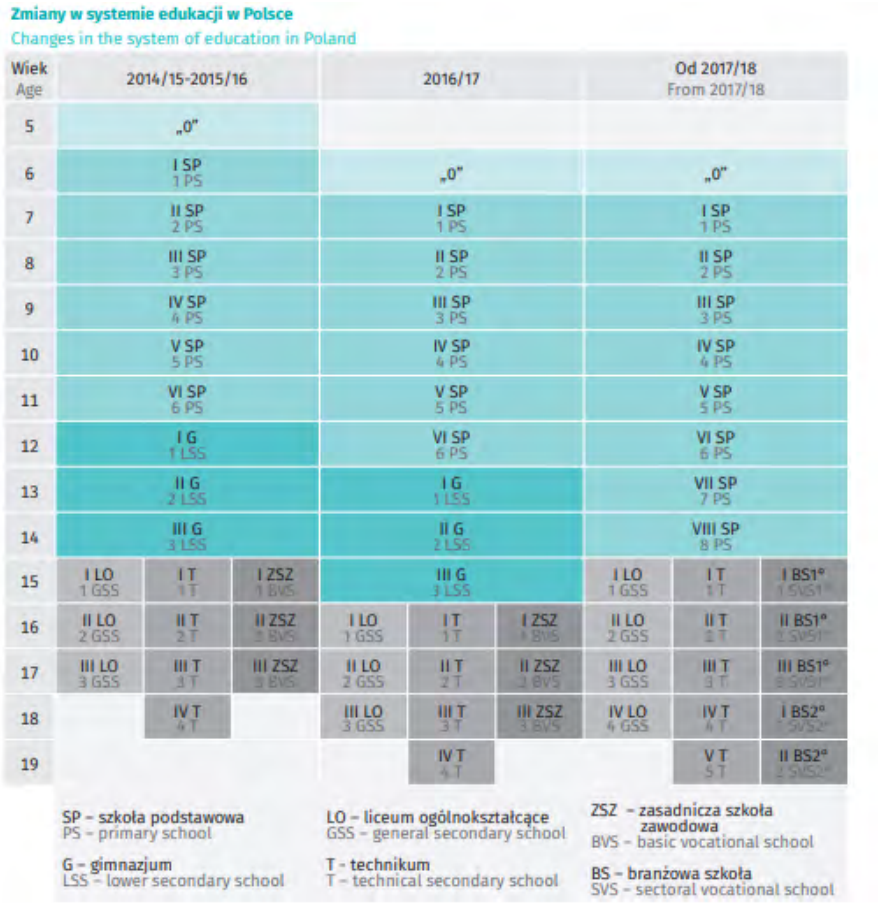


Fig. 4. Changes in the education system in Poland between 1999 and 2023

Source: Oświata i wychowanie w roku szkolnym 2022/2023. Główny Urząd Statystyczny, Urząd Statystyczny w Gdańsku, Warszawa - Gdańsk 2023, p. 41.

The contemporary image of vocational education in Poland is the result of changes introduced since 2017. A number of significant changes have been introduced to improve the quality of education and better adapt it to the needs of the labour market. Here are the most important of these:

1) New framework teaching plans have been introduced, under which
   - the number of hours allocated to vocational training in technical schools was increased from 51 to 56 hours over a five-year training period,
   - the possibility of providing vocational training in the form of qualified vocational courses in upper secondary vocational schools was introduced.
2) Changes have been made to the professional examinations in that:
   - Vocational examinations have become compulsory in order to verify the quality of the education process and to increase the number of graduates obtaining vocational qualifications. In order to graduate, every pupil or student of a vocational training school should pass an exam and obtain the relevant vocational qualification,
   - new rules for the organisation of examinations have been introduced to make them more efficient and effective.
3) There was a focus on working with employers because:
   - Pupils at lower secondary vocational schools and technical colleges can undertake apprenticeships under a contract with an employer, enabling them to learn a trade under real working conditions,
   - employers have the opportunity to get to know and prepare potential employees by organising internships,

Closer cooperation between schools and employers and their organisations is also possible through agreements between schools and employers and the creation of so-called patronage classes, which can train students in a particular profession or specialisation needed by a specific company.

4) Directional measures have been taken to improve teachers' qualifications. As a result of which, vocational teachers are obliged to systematically improve their work skills through compulsory industry internships in order to enhance their skills and competences. The teacher is obliged to participate in training courses implemented for a total of 40 hours in 3-year cycles at employers related to the profession/industry taught. Participation in the training can be financed, inter alia, from the National Training Fund.
5) There has been a focus on flexibility in education, as schools have been given the opportunity to be more flexible in adapting their provision to the needs of adult learners by running shorter course forms, such as vocational skills courses.

Other opportunities for students to acquire additional vocational skills during their time at school include the introduction of additional skills or marketable qualifications. The head of the school can allocate approximately 20%-30% of the compulsory education pool to adapt education to the needs of the local and regional labour market, e.g. through the acquisition of additional skills (e.g. barista in a waiter's profession), preparation for additional qualifications or a certified market qualification.

6) Preparation for students to acquire selected vocational qualifications was introduced:
   - Which, in turn, translates into a shorter path to practice,
   - is compulsory, and the acquisition of selected qualifications necessary for the profession may include, for example, preparation for a train driver's licence in the rail transport sector, electrical qualifications in the electrical and energy professions, a category C driving licence in the road transport sector.
7) Changes have been made to funding and support consisting of:
   - increase the educational subsidy for students of schools educating in occupations for which there is a higher demand in the labour market. They are based on annual forecasts of the demand for employees in occupations of vocational education in the national and provincial labour market published on the website of the Ministry of National Education https://www.

gov.pl/web/edukacja/prognoza-zapotrzebowania-na-pracownikow-w-zawodach-szkolnictwa-branzowego, accessed September 2024),

- introducing the possibility of organising free transport and care for children and young people with disabilities during transport to secondary schools.

8) The importance of career counselling for students has been increased:
   - compulsory counselling classes were introduced at every stage of education, from kindergarten to secondary schools,
   - Careers counselling aims to support students in making an informed choice about their educational and career paths, taking into account their interests, aptitudes and the needs of the labour market,
   - Career counsellors, teachers and school specialists (educationalists, psychologists) work together to provide students with career planning support.
9) The focus was on adapting the offer of vocational schools to the needs of the labour market by making it compulsory for schools to obtain an opinion from the provincial labour market council issued for a period of five years:
   - in terms of assessing the relevance of training in a given profession according to the needs of the regional and local labour market,
   - A second opinion is not required if the Ministry of Education's forecast for the occupation shows a demand in the national or provincial labour market.

These changes are aimed not only at improving the quality of vocational education, but also at better preparing students to enter the labour market and increasing the prestige of vocational education in Poland.

2.1.3. Statistics on finances, number of pupils, core curricula for vocational training and institutions involved in the vocational education and training sector

Expenditure on education in Poland

The Central Statistical Office in Poland reports that between 2003 and 2022, a systematic increase in public expenditure and general subsidies for education was evident, with a relatively stable share of these expenditures in Gross Domestic Product (Figure 1).

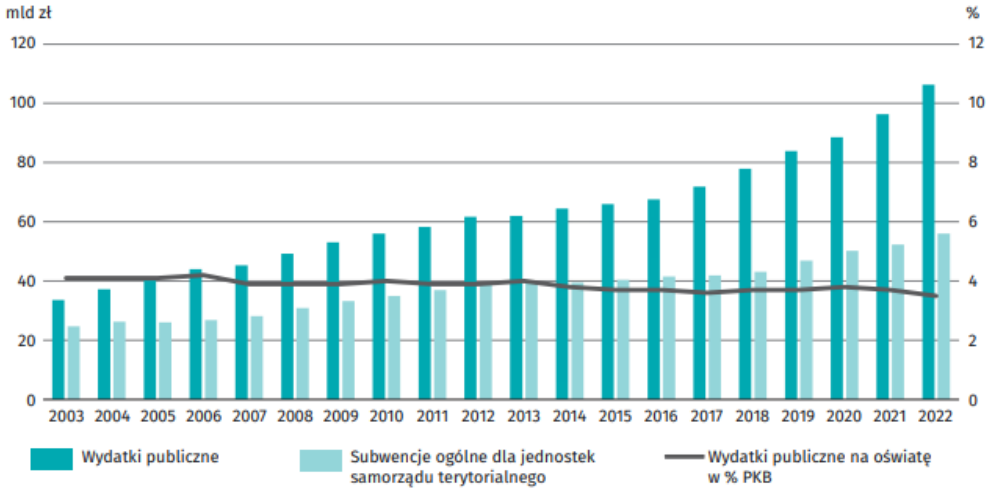


Fig. 5. Public expenditure on education and subsidies to local authorities

Source: Oświata i wychowanie w roku szkolnym 2022/2023. Główny Urząd Statystyczny, Urząd Statystyczny w Gdańsku, Warszawa - Gdańsk 2023, p. 19.

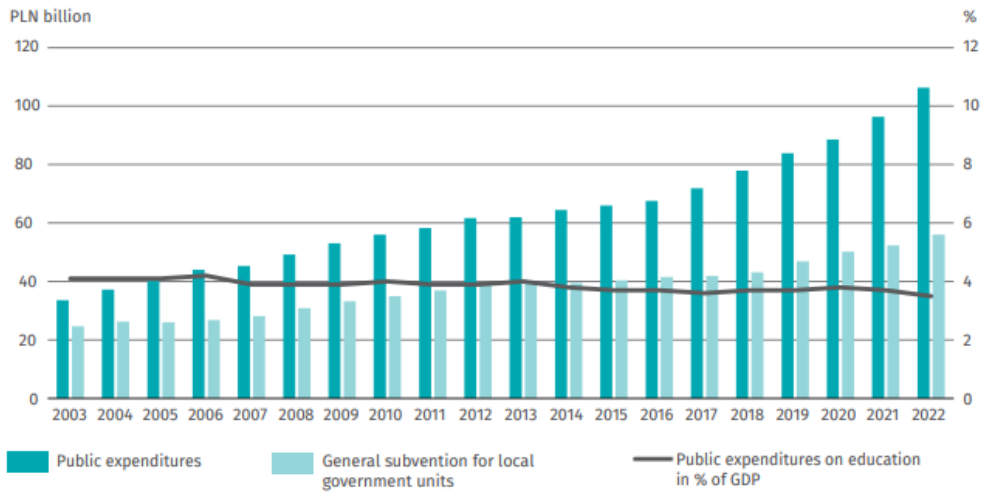


Chart 5. Public expenditures on education and subvention for local government units

Source: Oświata i wychowanie w roku szkolnym 2022/2023. Główny Urząd Statystyczny, Urząd Statystyczny w Gdańsku, Warszawa - Gdańsk 2023, p. 19.

Number of vocational schools, students and graduates in Poland

Over the past five years, vocational education in Poland has undergone significant quantitative changes, reflecting the growing interest in this type of education and the adaptation of the educational offer to the needs of the labour market.

Data from the Central Statistical Office shows that in the school year 2023/24, there were 6.9 thousand post-primary schools for young people (including special schools) in Poland, attended by a total of 1818.9 thousand pupils (1671.2 thousand in the previous school year). For comparison, in the 2019/20 school year, there were a total of 6551 post-primary schools for young people (excluding post-secondary schools) attended by 1.5 million pupils. A comparison of the data shows that from the 2019/20 school year to 2023/24, there were around 350 (5.3/%) more schools and an increase in the number of pupils attending by around 319,000 (over 20%).

In the school year 2023/24, Poland's 2449 general secondary schools for young people had 806.1 thousand students, among whom women predominated (62.2%), while 1858 technical schools had 755.2 thousand students and here the majority were men (61.2%). In the 2019/20 school year, more than 642,000 pupils attended 2334 general secondary schools and 647,000 pupils attended 1850 technical schools. The increase in the number of schools and students in both types of institution suggests a growing demand for secondary education. A greater increase in the number of pupils is noticeable in general secondary schools compared to technical schools. The gender proportions in both types of schools remained stable, with a clear advantage for females in secondary schools and males in technical schools.

In the school year 2023/24, 1 695 lower-secondary vocational schools in Poland were attended by 217.5 thousand students, of whom males accounted for 66.7%. Education in 261 industry upper secondary schools was continued by 13.0 thousand students, of whom 12.4 thousand were in urban areas and 0.6 thousand in rural areas. On the other hand, in the 2019/20 school year, there were 1283 lower secondary sector schools with over 183 000 students.

Table 1. Number of secondary schools for young people in Poland

Type of school	Number of pupils				
	2019/2020	2020/2021	2021/2022	2022/2023	2023/2024
General secondary school	2334	2319	2331	2398	2449
Technical School	1851	1828	1820	1861	1858
Secondary technical school	1283	1277	1278	1672	1695
Secondary technical school	---	82	136	226	261
Special schools for work preparation	538	550	557	560	565

Source: own compilation based on statistical data from the Central Statistical Office.

Special schools for work are three-year institutions for pupils with moderate or severe intellectual disabilities and with multiple disabilities. Graduates of these schools receive a certificate confirming adoption for work. In the 2019/20 school year, 12,500 pupils attended 538 such schools, and in the 2023/24 school year the number of schools will increase to 565, with the same number of pupils.

Table 2. Number of students - secondary schools for youth in Poland

Type of school	Number of pupils				
	2019/2020	2020/2021	2021/2022	2022/2023	2023/2024
General secondary school	642317	643733	652690	726386	806123
Technical School	647495	646230	655630	711140	755167
Secondary technical school	183086	189273	194574	195097	217499
Secondary technical school	---	1699	3729	11375	12973
Special schools for work preparation	12513	12611	12832	12713	12483

Source: own compilation based on statistical data from the Central Statistical Office.

Table 3. Number of graduates - post-primary schools for youth in Poland

Type of school	Number of pupils			
	2019/2020	2020/2021	2021/2022	2022/2023
General secondary school	144827	146289	149139	159937
Technical School	107849	110882	111211	117346
Secondary technical school	39763	37376	36083	46799
Secondary technical school	---	1699	2705	1372
Special schools for work preparation	2337	2387	2207	2868

Source: own compilation based on statistical data from the Central Statistical Office.

In summary, in recent years there has been a noticeable increase in the number of students in general secondary schools, technical high schools, industry schools of the first and second degree. It should be emphasised that despite the significant increase in the number of students in general secondary schools, it is the graduates of primary schools who are more willing to choose vocational schools (technikum and industry school of the first degree), which testifies to the growing interest in vocational and technical education.

In Poland, new fields of study that respond to the dynamically changing needs of the labour market, such as programmer technician, robotics technician or automation technician, are systematically introduced into the classification of vocational education professions. At present, 238 professions can be trained in the Polish vocational education system .

More and more students are participating in dual education, which combines theoretical learning at school with work experience in enterprises. However, in 2021, only 11.6 per cent of VET graduates will have benefited from learning in real working conditions .

The number of students taking vocational examinations has increased as a result of the introduction of compulsory vocational qualification examinations.

These trends indicate the growing importance of vocational education in Poland and its adaptation to labour market needs. The increase in the number of students, schools and teachers in vocational education testifies to the growing interest in this type of education and its role in preparing young people to enter the labour market.

2.1.4. Information on the implementation of vocational counselling in vocational schools in Poland

Legal basis

In Poland, career counselling was introduced to all types of schools, including vocational schools in the 2019/2020 school year.

Career guidance issues are reflected in the following legislation:

1. The Act of 14 December 2016. - The Education Law (Dz. U. of 2024, item 737, as amended) regulates the following issues related to career counselling in Polish schools:
   - objectives of career guidance:
     - Preparing pupils to make an informed choice of profession and field of study,
     - support students in career and education planning;
   - organising career guidance:
     - Careers counselling is an integral part of the education system and is provided at all stages of education,
     - Schools are required to develop and implement career guidance programmes that take into account the needs of students;
   - the role of career counsellors:
     - Career counsellors are responsible for conducting career guidance classes, diagnosing students' needs and providing individual counselling;
   - cooperation with external actors:
     - schools can cooperate with employers, employers' organisations, business councils and other organisations to organise vocational visits and learn about the working environment;
   - support for students:

- Pupils have access to psychological and pedagogical support, which includes career counselling,
- schools provide conditions for pupils to develop their professional interests and talents.

2. The Act of 26 January 1982. - The Teachers' Charter (Journal of Laws of 2024, item 986) regulates the following issues related to career counselling:
   - teachers' responsibilities:
     - teachers are required to support students in their choice of educational and career path, which includes career counselling;
   - professional development:
     - The Act provides for mandatory in-service training for teachers, including participation in training and courses, which may include issues related to career guidance;
   - cooperation with career counsellors:
     - teachers collaborate with career counsellors to provide students with comprehensive career planning support;
   - legal protection:
     - teachers, including guidance counsellors, are covered by legal protection in relation to the performance of their duties, which includes career guidance.
3. The Regulation of the Minister of National Education of 3 April 2019 on framework educational plans for public schools (Journal of Laws 2024, item 80) regulates the following key issues related to career guidance:
   - minimum hours:
     - sets out the minimum weekly hours of counselling that must be provided in schools (primary schools - 10 teaching hours in grade 7 and 10 teaching hours in grade 8; technical schools - 10 hours for the whole education cycle; lower secondary schools - 10 hours for the whole education cycle; upper secondary schools - 10 hours for the whole education cycle);
   - programme content:
     - Careers guidance classes include curriculum content tailored to different educational stages, including trade schools and technical colleges;
   - organisation of activities:
     - Careers counselling is carried out as part of compulsory education classes and tutor classes that address relevant social issues, including careers.
4. The Regulation of the Minister of Education and Science of 14 September 2023 on the specific qualifications required of teachers (Journal of Laws, item 2102) specifies:
   - qualifications of career counsellors:
     - It defines the specific qualifications required of teachers, including guidance counsellors, in terms of the level of education and the extent of pedagogical preparation (higher education obtained as a result of completion of a single master's degree or postgraduate studies is required);
   - pedagogical preparation:
     - It is required that guidance counsellors have an appropriate pedagogical background, which includes knowledge and skills in psychology, pedagogy and specific didactics.
5. The Regulation of the Minister of National Education of 25 August 2017 on the manner in which public kindergartens, schools and institutions keep records of the course of teaching, educational and caring activities, as well as the types of such records (Journal of Laws of 2024, item 50) regulates the following issues related to professional counselling:

- career guidance documentation:
  - schools are obliged to keep records of careers guidance, including work plans for careers advisers and reports on the implementation of these plans;
- recording of consultancy activities:
  - documentation includes the recording of guidance activities carried out by career counsellors;
- cooperation with parents and external institutions:
  - The documentation should also include information on cooperation with parents and external institutions such as employers, NGOs and labour market institutions.

6. The Regulation of the Minister of National Education of 25 August 2017 on pedagogical supervision (Journal of Laws of 2024, item 15) regulates issues related to career counselling, including:
   - control and evaluation:
     - Pedagogical supervision includes control and evaluation of the implementation of vocational counselling in schools. This control is aimed at assessing the state of compliance with the law on teaching, upbringing and caring activities, including career counselling. The audit may be carried out by the body supervising pedagogical supervision or the head of the school;
   - support:
     - the body supervising pedagogical supervision and school principals are to support processes aimed at improving and perfecting the work of the school, including vocational guidance. This support is intended to inspire and intensify activities aimed at the development of students
   - action planning:
     - pedagogical supervision activities, including those concerning vocational counselling, are planned in accordance with the basic directions of the state's educational policy implementation. Planning includes both planned and ad hoc activities resulting from the needs of the school;
   - documentation and reporting:
     - Schools are required to keep records of career counselling and report the results of checks and support activities. These records are used to evaluate the effectiveness of career counselling and take corrective action.

   The audit is based on an analysis of school records, including but not limited to:
   a) the school organisation sheet prepared for a specific school year (e.g. 2023/2024) and the annexes to that sheet,
   b) school statutes,
   c) the programme for the implementation of career guidance from the school year (approved by the principal and the board of education),
   d) minutes of meetings of the board of education,
   e) orders of the head teacher,
   f) the pedagogical supervision plan from the school year under review,
   g) reports on the implementation of the pedagogical supervision plan,
   h) teaching records, including class diaries, logbooks of pedagogical and psychological counselling classes, where entries are made on the vocational counselling classes conducted,
   i) documents confirming the qualifications of the guidance teacher,
   j) a register of group outings or professional excursion sheets.

7. The Regulation of the Minister of National Education of 12 February 2019 on career counselling (Journal of Laws 2019, item 325) is the KEY legal document regulating career counselling and the

correct interpretation of its provisions determines whether career counselling is implemented in an effective and efficient manner.

A model for Polish career counselling in vocational schools - analysis of the regulation on career counselling

From the wording of the Career Counselling Regulation it follows that:

1. Career counselling in vocational schools is implemented:
   - by general education teachers in compulsory general education classes and in compulsory vocational education classes;
   - in careers guidance classes led by careers advisors (so-called 10 hours per learning cycle;
   - in class with the class teacher in charge of the class;
   - within the framework of psychological and pedagogical assistance, by career counsellors - psychologists working in psychological and pedagogical counselling centres;
   - as part of vocational visits to familiarise children and pupils with the working environment in selected professions, organised at employers.

Unfortunately, the lack of proper interpretation of these provisions leads to a stereotypical identification of guidance activities in schools by headmasters, teachers, parents of students and pupils only with teachers qualified as guidance counsellors. This results in a low level of involvement of the other co-implementers. This is also confirmed by the results of research in Eastern Wielkopolska .

2. The school should develop an in-school career guidance system.
3. The school shall develop a programme for the implementation of career counselling for each school year, taking into account the intra-school career counselling system. The programme should include:
   - activities related to the implementation of career guidance, including:
     - the theme of the activities, taking into account the curriculum content, as set out in the regulation,
     - branches affected,
     - the methods and forms of implementation of the activities, taking into account the participation of parents in these activities, in particular through the organisation of meetings with parents,
     - deadlines for action,
     - the persons responsible for carrying out the various activities,
   - entities with which the school cooperates in the implementation of the activities,
   - programme, is developed by the guidance counsellor or other teacher(s) responsible for the implementation of career guidance in the school, designated by the head teacher,
   - The headmaster shall, by 30 September of each school year, after consulting the board of education, approve the programme.

According to the results of the study , the programmes developed by vocational schools do not always include all the measures indicated in the regulation. This is another area for improvement.

4. The tasks of the career counsellor include:
   - systematically diagnose the needs of pupils and students for career guidance activities;
   - conducting career guidance classes;
   - to develop the programme in cooperation with other teachers, including the teachers in charge of the departments, psychologists or pedagogues, and to coordinate its implementation;
   - supporting teachers, including classroom supervisors, psychologists or pedagogues, in the implementation of the activities set out in the programme,

- coordinating the information and advisory activities carried out by the school, including collecting, updating and making available educational and vocational information appropriate to the level of education;
- implementation of programme activities.

5. In implementing career guidance, the school may collaborate with:
   - employers,
   - employers' organisations,
   - economic authorities or other economic organisations,
   - associations or professional bodies,
   - vocational training schools,
   - psychological-educational counselling centres,
   - teacher training centres
   - labour market institutions.
6. The regulation sets out the curriculum content for career counselling, including but not limited to:
   - industry lower secondary schools (Annex 4 to the Regulation);
   - general secondary schools (Annex 5 to the Regulation);
   - technicians (Annex 6 to the Regulation);
   - industry upper secondary schools, post-secondary schools and adult schools.
7. The curriculum content for career counselling includes learning outcomes grouped into 4 thematic areas:
   - Getting to know one's own resources;
   - The world of professions and the labour market;
   - The education market and lifelong learning;
   - Self-development planning and educational and professional decision-making.

The above provisions aim to ensure that students are supported in making informed decisions about their professional and educational future.

2.2 The vocational training system in Croatia

- Brief description of the history and development of vocational training in Croatia
- The current legal framework and the reforms implemented over the last few years
- Statistics on the number of students, programmes and institutions involved in the VET sector
- Information on the implementation of career counselling in vocational schools in Croatia

2.2.1. History and development of vocational training in Croatia

The history and development of vocational training in Croatia have evolved significantly over the years. Here's an overview:

Early Development

- Pre-1990s: Vocational education in Croatia has deep roots, with its origins tracing back to the Austro-Hungarian Empire. During this period, vocational schools were established to meet the needs of the industrial and agricultural sectors

Post-Independence

- 1990s: After gaining independence in 1991, Croatia began to reform its educational system, including

vocational training. The focus was on aligning vocational education with the new market economy and the needs of a developing nation

Modernization and EU Integration

- 2000s: Significant reforms were introduced to modernize the vocational education system. The Development Strategy of the Vocational Education System (2008-2013) aimed to enhance the quality and relevance of vocational training
- 2013: Croatia's accession to the European Union marked a pivotal point. The country adopted EU standards and practices, which included improving vocational education and training (VET) to meet European benchmarks

Recent Developments

- 2020: During its presidency of the Council of the EU, Croatia emphasized the importance of vocational education. Efforts were made to improve teacher status, promote lifelong learning, and integrate digital skills into the curriculum
- Current Challenges: Despite progress, challenges remain, such as increasing adult participation in vocational training and ensuring continuous updates to the curriculum to match industry needs

Croatia's vocational education system is characterized by a strong tradition and high participation rates at the upper secondary level, making it one of the highest in the EU.

2.2.2. Legal framework, structure and changes implemented in vocational education in Croatia

The legal framework for vocational education in Croatia is primarily governed by the Vocational Education and Training Act. This act outlines the structure, organization, and implementation of vocational education and training (VET) programs. Key amendments to this act were made in 2022 to enhance the acquisition of competencies and improve learning outcomes

Structure

Vocational education in Croatia is part of the secondary education system and is overseen by several bodies:

- Central Authorities: The Ministry of Science and Education and the Ministry of Economy, Entrepreneurship, and Crafts are responsible for establishing and supervising vocational institutions, managing the Croatian Qualifications Framework, and promoting lifelong learning
- Regional Authorities: Counties (županije) manage work-based learning, provide vocational training and lifelong learning, and ensure cooperation between educational institutions and economic operators
- Local Authorities: Municipalities and cities (općine i gradovi) participate in the vocational training system and may establish public open universities for adult education

Recent Changes and Reforms

1. Ordinance Amendments (2024): Recent amendments to the Ordinance on the Manner of Organising and Conducting Teaching in Vocational Schools have been implemented. These changes regulate the organization, implementation, and monitoring of classes, work-based learning, and professional practice
2. Regional Centers of Competence (2018, 2023): Croatia has established 25 Regional Centers of Competence, which are centers of excellence in vocational education. These centers focus on innovative learning models, high-quality infrastructure, and cooperation with social partners

3. Dual Education Model (2022): The dual education model has been updated to include a register of business entities involved in providing practical training for various qualifications, such as glass-maker, chimney sweep, and CNC operator

These reforms aim to ensure that vocational education in Croatia remains relevant, high-quality, and aligned with the needs of the labor market.

The education system in the Republic of Croatia consists of:

- pre-school education
- primary (including lower secondary) education
- (upper) secondary education
- higher education.

High schools (secondary education), depending on the type of curriculum they implement, are:

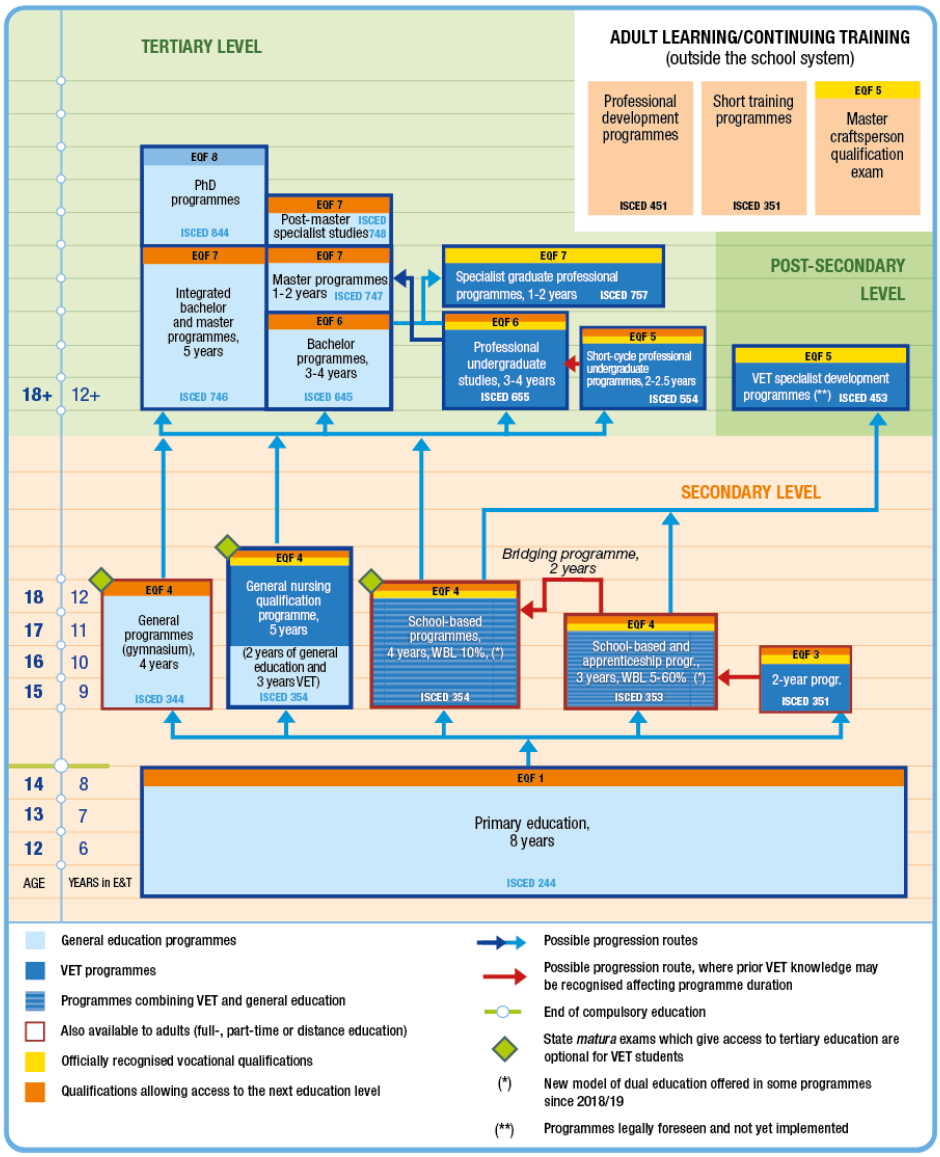
1. Grammar schools (general or specialized) lasting for four years.
2. Vocational schools, lasting from one to usually three or four years, exceptionally five, upon the completion of which the students acquire a qualification of a certain level, scope, profile and quality which is proven by a public document whose content and form are prescribed by the ministry responsible for education.
3. Art schools (music, dance, art and other, determined by the type of curriculum) lasting a minimum of 4 years.

The existing system of vocational education covers 66.9% of the total secondary school population, i.e. 96,018 students in 300 schools.

The system of regular vocational education for acquiring low and intermediate level qualifications, according to educational programs, consists of:

- one-year and two-year programs of lower education in 8 educational programs. The number of students attending these programs is 159, which is 0.17% of the total number of vocational education students, or 0.1 % of the total secondary school population.
- three-year programs for occupations in industry and crafts in 139 educational programs. They are attended by 26,995 students, which is 28.1% of the total number of vocational education students, or 18.8% of the total secondary school population.
- four-year technical programs and similar orientations in 83 educational programs. They are attended by 63,442 students, which is 66.1% of the total number of vocational education students, or 44.1% of the total secondary school population.*

Scheme of the education system in the Republic of Croatia:



NB: ISCED-P 2011.
Source: Cedefop and ReferNet Croatia, 2022.

Source of image:

2.2.3 Statistical data on the number of students, education programmes and institutions involved in the vocational education and training sector in Croatia

Vocational Education and Training (VET) (VET) in Croatia plays a significant role in the country's educational landscape, encompassing a substantial portion of secondary education. Here's an overview of the statistical data related to students, educational programs, and institutions involved in the VET sector:

Student Enrollment in VET Programs:

- Overall Participation: Approximately 66.9% of the total secondary school population in Croatia is enrolled in vocational education programs, amounting to 96,018 students across 300 schools.
- Program Distribution:

- POne-year and Two-year Programs: These programs cater to lower educational qualifications across 8 educational programs, with 159 students enrolled, representing 0.17% of vocational education students and 0.1% of the total secondary school population.
- PThree-year Programs: Focused on occupations in industry and crafts, these programs encompass 139 educational programs with 26,995 students, accounting for 28.1% of vocational education students and 18.8% of the total secondary school population.
- PFour-year Programs: These technical and similar orientation programs include 83 educational programs, enrolling 63,442 students, which is 66.1% of vocational education students and 44.1% of the total secondary school population.

Educational Programs and Institutions:

- Diversity of Programs: The VET system in Croatia offers a wide array of programs tailored to various industries and crafts, ensuring that students acquire specific skills relevant to the labor market.
- Institutional Framework: Vocational education is provided through 300 schools across the country, each offering programs that align with national educational standards and labor market needs.

Recent Developments:

- Modernization Efforts: The Agency for Vocational Education and Training and Adult Education (ASOO) is leading initiatives to modernize the VET system, focusing on updating qualifications and reforming curricula to better match labor market demands.
- Policy Focus: The Croatian government emphasizes the importance of VET in its educational policies, aiming to enhance the quality and relevance of vocational training to support economic growth and employment.

These statistics and developments highlight the critical role of vocational education in Croatia's educational system, reflecting ongoing efforts to align VET programs with the evolving needs of the labor market.

2.2.4 Information on the implementation of career counselling in vocational schools in Croatia

Career counselling in vocational schools in Croatia is a structured process integrated into the education system, aiming to assist students in making informed decisions about their career paths and aligning their skills with labor market needs. Here's an in-depth look at the implementation of career counselling in vocational schools in Croatia:

1. Framework and Objectives

Career counselling in Croatia is guided by national education policies and overseen by agencies like the Agency for Vocational Education and Training and Adult Education (ASOO). Its primary goals include:

- Enhancing Career Readiness: Helping students understand their strengths, interests, and potential career paths.
- Aligning with Labor Market Demands: Providing insights into current job market trends and future opportunities.
- Facilitating Lifelong Learning: Encouraging students to consider further education and skills development.

2. Delivery Mechanisms

Career counselling in vocational schools is implemented through various methods:

a) Career Counsellors

- Schools often have designated career counsellors or pedagogical staff trained to provide guidance.

- These professionals assist students in identifying career options, setting goals, and understanding pathways.

b) Workshops and Seminars

- Schools organize interactive sessions on topics like resume writing, interview skills, and job market exploration.
- Collaboration with employers and industry experts is common to provide real-world insights.

c) Individual and Group Counselling

- Students receive one-on-one guidance tailored to their specific needs and aspirations.
- Group counselling sessions focus on common challenges, such as choosing the right vocational program or preparing for internships.

3. Integration with the Curriculum

Career counselling is embedded in the educational framework through:

- Practical Training: Students gain hands-on experience in their chosen fields, helping them make informed career choices.
- Modules on Career Development: Some vocational programs include courses or units focused on personal development and career planning.
- Internships and Apprenticeships: These provide real-world exposure, allowing students to explore potential careers.

4. Partnerships and Collaboration

Career counselling initiatives often involve partnerships between schools and external stakeholders:

a) Employers and Industry Representatives

- Schools collaborate with businesses to provide students with insights into specific industries.
- These partnerships facilitate internships and on-the-job training opportunities.

b) Career Fairs and Events

- Schools participate in career fairs where students can interact with employers and explore various professions.
- Industry-specific events provide exposure to niche career options.

c) Public Employment Services

- Agencies like the Croatian Employment Service (CES) support career counselling through job market data, career exploration tools, and specialized programs.

5. Challenges in Implementation

Despite its structured approach, career counselling in vocational schools faces challenges:

- Resource Limitations: Some schools lack sufficient staff or funding for comprehensive counselling services.
- Awareness Gaps: Not all students fully utilize the available resources or understand their importance.
- Labor Market Mismatch: Rapidly changing market demands can make it difficult to provide up-to-date guidance.

6. Recent Developments and Innovations

- Digital Tools: Online platforms and apps are increasingly used for career guidance, offering resources like aptitude tests and job market analytics.
- Teacher Training: Programs are in place to enhance the skills of educators and counsellors in providing effective guidance.

- Policy Support: Government initiatives focus on strengthening the role of career counselling in reducing unemployment and ensuring smoother transitions to the workforce.

Career counselling in vocational schools in Croatia plays a vital role in bridging education and employment. Through a combination of structured programs, partnerships, and practical experiences, students are better equipped to navigate their career journeys. Continuous investment in resources, training, and innovation is essential to address challenges and maximize the impact of these services.

3. Good practices in vocational training

3.1 Integration of vocational schools into the labour market

This chapter presents examples of good practice aimed at integrating vocational education with the labour market. Through the indicated practices we can learn how vocational schools in Poland and Croatia cooperate with employers in order to adapt educational programmes to the needs of the labour market.

In the case of Poland, two examples are described related to the introduction of dual vocational education at the level of lower secondary vocational school (the profession of machine tool operator) and technical secondary school (the profession of automation technician.

The Croatian partner presented the e-School project and the use of digital tools in vocational education.

Dual system of vocational training - cooperation between companies and vocational schools in Poland

Good practice 1: Radom Metal Cluster - dual training in the profession of machine tool operator

Rationale for selection of good practice

The subject of dual training in the Radom Metal Cluster was chosen for its innovation and effectiveness in preparing students for work in the metal industry. This model combines theory and practice, which increases the attractiveness of vocational education and responds to the real needs of the labour market. In addition, cooperation between schools and companies provides an example of good practice that can be implemented in other regions. The initiative to organise dual training was taken by employers, who also cover a significant part of the costs of its organisation by purchasing students' work clothes, textbooks and subsidising the salaries of employees acting as practical training instructors.

Coordinating or implementing body

- Name: Radom Metal Cluster
- Location: Radom, Poland
- Partners: 25 companies from the metal industry, 8 supporting partners (e.g. Radom City Hall, Łukasiewicz Research Network - Institute of Exploitation Technology in Radom, University of Radom Faculty of Mechanical Engineering), 3 educational establishments (Mjr H. Hubal Vocational School Complex in Radom, T. Kościuszko Technical School Complex in Radom, Vocational and Continuing Education Centre No. 2 in Radom).

Context and background

Radom is an important centre for the development of the metal industry in Poland. Challenges such as the lack of skilled workers and the outflow of human resources to better-paid professions have prompted local businesses to cooperate within the Radom Metal Cluster. The cluster was established in 2011 to meet the needs of the labour market and vocational schools.

Aims and objectives

- Main objective: to prepare students for a career as a machine tool operator through dual training.
- Assumed results: an increase in the number of skilled workers in the metal industry, improved quality of vocational training.

Description of the solution

- Dual training model: students start their practical classes at the Vocational and Practical Training Centre and then continue them in enterprises. In the last semester, they return to the centre to prepare for the vocational exam.
- Promotion of technical professions: company representatives attend meetings with parents of primary school pupils to promote technical professions.

Sources of funding

- Membership fees: voluntary contributions from companies affiliated to the cluster.
- National and international projects: projects such as “Platform ProFUTURE” and “PROFESSIONALS for the future of the Radom Metal Cluster”.
- Educational subsidies: reimbursement of salary costs for practical vocational training instructors.

Benefits

- For students: acquisition of practical skills in a real work environment, development of personal competences, increased employability.
- For companies: attracting qualified employees, reducing recruitment and training costs.
- For schools: working with local employers, improving pass rates in vocational exams.

Conclusions and recommendations

- Conclusions: dual education effectively prepares students for careers, increases their motivation and self-esteem.
- Recommendations: Other regions could adopt a similar model of cooperation between schools and businesses to better align vocational training with labour market needs.

Contact

- Contact person: Przemysław Radomski, Coordinator of the Radom Metal Cluster
- Website: https://klastermetalowy.radom.pl/

Good practice no. 2: Bohaterów Westerplatte Electronic School Complex in Radom - Dual training in the profession of automation technician

Rationale for selecting good practice:

The subject of dual education at the Complex of Electronic Schools in Radom was chosen for its innovation and effectiveness in preparing students for work in the electronics and mechatronics industry. The model combines theory and practice, which increases the attractiveness of vocational education and meets the real needs of the labour market. In addition, cooperation between schools and businesses provides an example of good practice that can be implemented in other regions. The

introduction of dual training at the technical school level is a new organisational solution. As part of dual training, students attend part of their classes in one of the vocational workshops in Radom's companies.

Coordinating institution

- Name: Bohaterów Westerplatte Electronic School Complex in Radom
- Location: Radom, Poland
- Partners: Local entrepreneurs in the electronics and mechatronics sector, Mazovian Education Superintendent

Context and background

The Electronic School Complex in Radom, which has been operating since 1967, decided to expand its cooperation with local enterprises in order to introduce dual training in the profession of automation technician. The aim was to better prepare graduates to enter the labour market and to reduce education costs by using the resources of enterprises.

Aims and objectives

- Main objective: To prepare students for the profession of automation technician through dual training.
- Assumed results: Increased number of skilled workers in the electronics and mechatronics industry, improved quality of vocational training.

Description of the solution

- Dual education model: Practical training is provided in two forms:
  - Apprenticeships: Carried out in Radom companies with which the school has agreements. The internship lasts 8 weeks (280 hours) and ends with an exam.
  - Practical classes: Organised as part of the Automation Systems and Installation Workshop and the Automation Devices and Systems Design and Programming Workshop. Students attend practical classes in companies once a week for one semester.

Sources of funding

- Educational subsidy: Reimbursement of the purchase of working clothes and partial costs of the wages of practical vocational instructors.
- Entrepreneurs' own funds: Costs of employing instructors, materials, utilities.
- Students' own parents' funds: Pupils' travel costs to the practical training sites.

Benefits

- For students:
  - gaining first work experience,
  - access to modern machinery,
  - mastering professional skills in a real work environment,
  - the opportunity to work on machinery and equipment used in future work,
  - development of personal and social competences,
  - Increase the chances of getting a better mark in the practical exam,
  - gaining contacts to help them in their future careers.
- For businesses:
  - cooperation with the school and implementation of corporate social responsibility,

- advertising within the school and increasing visibility in the local labour market,
- attracting potential staff by hiring graduates,
- in-service training for staff acting as instructors,
- shortening the adaptation period for newly recruited staff.

- For the school:
  - establishing direct contact with businesses,
  - raising the school's profile and promoting it,
  - Employer involvement in curriculum improvement,
  - obtaining financial or in-kind support from businesses,
  - professional development opportunities for teachers,
  - a better understanding of the needs of the local labour market,
  - increasing teaching effectiveness and improving pass rates in vocational examinations
  - increasing the satisfaction of pupils and their parents.

Conclusions and recommendations

- Conclusions: Dual education effectively prepares students for careers, increases their motivation and self-esteem. Cooperation between schools and businesses benefits all parties involved.
- Recommendations: Other schools can adopt a similar model of collaboration to better align vocational education with the needs of the labour market.

Contact

- Contact person: Konrad Witkowski, Director of Bohaterów Westerplatte Electronic School Complex in Radom
- Contact person: Wojciech Wojciechowski, Head of Practical Training at Bohaterów Westerplatte Electronic School Complex in Radom
- Website: https://www.elektronik.edu.pl/

3.1.2. e-School project and the use of digital tools in vocational education in Croatia

The e-School Project in Croatia is a landmark initiative aimed at digitizing and modernizing education across all levels, including vocational education and training (VET). When applied to vocational schools, this project emphasizes the integration of digital tools and technologies to enhance learning, teaching, and administration. Here's a detailed explanation:

1. Overview of the e-School Project

The e-School project is spearheaded by CARNet (the Croatian Academic and Research Network) and supported by the Croatian government and EU funds. It aims to:

- Equip schools with modern IT infrastructure.
- Provide digital tools and content for teachers and students.
- Improve the overall quality and accessibility of education through technology.

2. Key Components of the e-School Project in Vocational Education

a) Digital Classrooms
   - Vocational schools are equipped with smartboards, laptops, tablets, and high-speed internet.
   - Classrooms are transformed into interactive environments where students can engage in hands-on learning using digital simulations and tools.

b) e-Learning Platforms
- Platforms like Loomen, based on Moodle, allow students to access online materials, submit assignments, and participate in virtual lessons.
- Vocational students can use these platforms for practical tasks, such as interactive tutorials or virtual labs.

c) Digital Content for Vocational Training
- Tailored content is developed to meet the needs of various vocational programs, such as technical drawing software for engineering or simulation tools for healthcare training.
- These resources enable students to practice skills in a controlled, virtual environment before applying them in real-world settings.

d) Teacher Training
- Teachers in vocational schools are trained to use digital tools effectively in their lessons.
- Training includes digital literacy, blended learning methodologies, and creating interactive content.

3. Benefits of Digital Tools in Vocational Education

a) Practical Skill Development
- Simulation Software: Students in fields like mechanics, healthcare, or IT can practice complex processes without needing physical equipment.
- Virtual Reality (VR): Vocational schools increasingly use VR to simulate real-world environments, such as workshops or medical labs.

b) Enhanced Accessibility
- Digital tools make education accessible to students in remote or underserved areas.
- Online resources allow self-paced learning, particularly beneficial for vocational students balancing studies with part-time jobs or apprenticeships.

c) Improved Engagement and Outcomes
- Interactive tools, gamification, and real-time feedback systems keep students engaged.
- These tools help improve understanding of complex concepts and increase retention.

d) Alignment with Modern Workplaces
- Students are exposed to the same tools and technologies used in industries, preparing them for seamless transitions to the workforce.

4. Challenges in Implementation

a) Infrastructure Gaps
- Some vocational schools, especially in rural areas, may still face limitations in internet connectivity or device availability.

b) Digital Literacy
- Both students and teachers need adequate training to maximize the potential of digital tools.

c) Initial Investment
- Upfront costs for devices, software, and training can be significant, though they are often offset by long-term benefits.

5. Examples of Digital Tools in Vocational Education

a) Engineering and Mechanics:
- CAD software (e.g., AutoCAD) for design and drafting.
- Simulation tools for automotive diagnostics and repair.

b) Healthcare and Medical Fields:
   - VR modules for anatomy and surgical procedures.
   - Online case studies for diagnosis and patient care.

c) IT and Programming:
   - Integrated Development Environments (IDEs) for coding practice.
   - Online platforms for cybersecurity training.

d) Hospitality and Tourism:
   - Reservation management software for training in hotel and travel management.
   - Simulated environments for event planning and culinary arts.

6. Results and Feedback
   - Positive Outcomes: The project has significantly increased the quality of vocational education, with students reporting better preparedness for modern work environments.
   - Scalable Model: The e-School approach is being considered for broader application, showing its success in blending traditional teaching with digital innovation.

The e-School Project exemplifies Croatia's commitment to integrating digital tools in vocational education. By fostering an environment of innovation and skill-building, the project not only modernizes education but also equips students with the competencies needed for a digital economy.

3.2. Improving curricula in cooperation between vocational schools and companies

The subsection presents examples of good practice aimed at improving the quality of curricula and curriculum innovation, the introduction of new technologies, STEM and international standards.

3.2.1. Improving the programme of practical classes for vocational school students in companies in Poland

Good practice 1: VOCATIONALISTS as the future of the Radom Metal Cluster

Rationale for selection of good practice

This description presents an example of good practice created as a result of the implementation of the public task "PROFESSIONALS - the future of the Radom Metal Cluster", funded by the Board of the Mazowieckie Voivodeship and coordinated by the Chamber of Commerce and Industry of the Radom Area. One of the project's results was the preparation of an expert opinion on the analysis of curriculum content included in the curriculum for practical classes conducted under the principles of dual training for the school occupation of machine tool operator 722307 with a subject structure (Programme number: BS/OPE/722307 - 1). The expertise was prepared by a representative of employers, which is a kind of deviation from the accepted standards, as the authors of such studies are in the vast majority representatives of vocational schools.

Coordinating or implementing body

- Name: Radom Metal Cluster
- Location: Radom, Poland
- Partners:

  Tadeusz Kościuszko Technical School Complex in Radom
  Łukasiewicz Research Network - Radom Institute of Exploitation Technology

Context and background

Radom is an important centre for the development of the metal industry in Poland. Challenges such as the lack of skilled workers and the outflow of human resources to better-paid professions have prompted local companies to cooperate within the Radom Metal Cluster. The cluster was established in 2011 to meet the needs of the labour market and vocational schools. Since then, practical classes in companies have been held according to a standardised curriculum. However, according to representatives of companies and students, this programme was not always matched to the capabilities of companies. Therefore, a diagnostic survey was conducted as part of the project to assess the level of students' mastery of the learning outcomes included in the programme of practical classes conducted under the formula of dual training in Radom. For the purpose of conducting the diagnostic survey, a set of 3 research tools - survey questionnaires was prepared for: 1) students, 2) representatives of trade schools and 3) companies participating in dual training in the school occupation "Operator of cutting machine tools" in Radom, which have a similar structure and thematic scope of the issues raised. A particularly important issue addressed in the conducted research was to find out the respondents' opinions on the level of students' mastery of selected learning outcomes included in the programme of practical classes.

Aims and objectives

- The main objective: to design a new form of training for secondary-technical school students who, after receiving their education and graduating, will be able to supply Radom-based enterprises associated, among others, in the Radom Metal Cluster, as specialists in mechatronics, automation, programming, machine and device control and welding.
- Expected results: improvement of the quality of education through better adjustment of the programme of practical classes to the potential capabilities of enterprises in which students from vocational schools in Radom studying the occupations of CNC machine tool operator and welding technician undergo dual training.

Description of the solution

- Analysis of the functioning of the current model of dual education in Radom including the main achievements, success factors, problems and challenges identified by entrepreneurs, vocational advisors, vocational teachers, headmasters of secondary schools and students, as well as representatives of the Radom City Hall.
- Expert opinion entitled. "Analysis of the curricular content of potential classes of selected technical schools included in the occupation "Machine tool operator - 722307":

  Within the Radom Metal Cluster, a common programme of practical classes for students organised in the form of dual training was developed for all companies. Such an approach leads, on the one hand, to a fair, equal treatment of all entities - metal sector companies participating in the dual training, and on the other hand, does not take into account the specificity of these companies, e.g. related to the available technical equipment (machinery), type of production carried out (serial, unit). Therefore, it would be reasonable to develop a model programme of practical classes for students of the profession of "Machine Tool Operator", which would be the basis for the creation of an individual timetable for a specific company, which would indicate the learning outcomes that can be achieved by taking into account the available machinery and equipment, the specificity of the production process. In the development of a company-specific lesson plan, it is advisable to involve instructors - student mentors. Other learning outcomes not realised could be acquired by the student in another company or in a Vocational Training Centre. This recommendation will also increase the involvement of representatives of metalworking companies in the development of a real, company-implementable practical programme for students. Representatives of the Vocational Training Centre in Radom, where the students will be placed after the practical classes

at the company, should also be involved in the development of the programme. At the Centre, the students are prepared for an external examination confirming the qualification in the occupation "Machine tool operator".

Increasing students' involvement in practical activities is possible, including, by increasing their awareness of the activities in which they will participate. This can be achieved by familiarising the student with the practical programme and its learning outcomes. It is recommended that the familiarisation of the students with the subject area is carried out by tutors in schools or by instructors - student tutors in companies. It is important that this is not just an enumeration of the learning outcomes included in the programme, but also a discussion of them. In particular, it would be advisable to show the importance of maintaining order and tidiness at the workstation before, during and at the end of the shift and performing other ancillary activities related to working on CNC machine tools. Improving pupils' involvement in practical activities also means better preparing them at school so that they have the necessary basic professional competences "on entry" to the company, e.g. regarding metrology, quality control, handling control and measuring tools, maintaining order, observing health and safety regulations, or equipping them with the basic mathematical knowledge necessary to perform calculations at the workplace, etc.

- Dual-system training programme at technical college level (upper secondary school)

Sources of funding

- National projects: funding from the Mazovian Voivodeship Board.

Benefits

- For students:
  - Development of professional skills: students will gain access to company-specific curricula, allowing them to acquire practical skills in real production conditions.
  - Vocational awareness: students will be more aware of the requirements and expectations of the labour market, which will increase their commitment and motivation to learn.
- For teachers and instructors:
  - Increased teaching competences: teachers and instructors will have the opportunity to participate in curriculum development, allowing them to better adapt their teaching methods to the needs of students and companies.
  - Cooperation with industry: strengthening cooperation with companies will enable teachers to better understand the needs of the labour market and adapt their curricula to current requirements.
- For businesses:
  - Access to a skilled workforce: companies will gain access to a better educated workforce that is prepared to work in the modern metal industry.
  - Influence on curricula: companies will be able to influence the content of curricula, allowing them to better tailor education to their staffing needs.
- For educational institutions:
  - Improving the quality of education: the introduction of modern teaching methods and teaching materials will contribute to improving the quality of education in vocational schools.
  - Promotion of dual training: the success of the project may contribute to the dissemination of the dual training model in other regions and industries.
- For the region:
  - Increasing competitiveness: Better preparation of young people for modern industry can contribute to the region's competitiveness in the labour market.

- Development of the local economy: Collaboration between education and industry can contribute to the development of the local economy by making education more relevant to the needs of the labour market.

Conclusions and recommendations

- Conclusions:
  - Effectiveness of dual education: the project 'PROFESSIONALS for the future of the Radom Metal Cluster' confirms that dual education, combining theory and practice, is an effective educational model that better prepares students for industrial work.
  - Importance of cooperation with industry: cooperation between schools and businesses is key to aligning curricula with the real needs of the labour market, thus increasing students' employability.
  - Personalisation of curricula: the development of individual practical programmes for companies allows better use to be made of the resources available and the specifics of production, thus increasing the effectiveness of training.
  - Student engagement: increasing students' awareness of the practical programme and employers' expectations leads to greater engagement and better preparation for work.
- Recommendations:
  - Extension of the dual education model: it is recommended that the dual education model be extended to other technical courses so that more students can benefit from this form of learning.
  - Continued cooperation with industry: cooperation with local businesses should be continued and developed in order to keep the curricula up to date with the changing needs of the labour market.
  - Regular updating of curricula: curricula should be regularly updated to keep up with technological advances and industry requirements.
  - Promotion of dual education: it is worthwhile to carry out activities promoting dual education among students, parents and employers in order to increase interest in this form of education.
  - Monitoring and evaluation: regular monitoring and evaluation of the effectiveness of the dual education programmes is recommended in order to identify areas for improvement on an ongoing basis and make the necessary changes.

Contact

- Contact person:

  Przemysław Radomski, Coordinator of the Radom Metal Cluster

  Katarzyna Skoczylas, International Projects Coordinator, Chamber of Commerce and Industry of the Radom Area
- Website: https://klastermetalowy.radom.pl/projekty/nowy-projekt-iphzr-zawodowcy-przyszloscia-radomskiego-klastra-metalowego/

3.2.2. Improving the programme of practical classes for vocational school students in companies in Croatia

Improving the program of practical classes for vocational school students in companies in Croatia is a key initiative to bridge the gap between vocational education and the labor market. The emphasis is on providing students with hands-on, real-world experiences that align with their theoretical knowledge, preparing them for successful careers in their chosen fields.

1. Overview of Practical Classes in Vocational Education

Practical classes involve students working directly in companies as part of their vocational training. This component is essential in Croatia's dual education model, which combines classroom instruction with on-the-job training.

- Goals:
  - To equip students with industry-relevant skills.
  - To familiarize students with workplace environments, tools, and practices.
  - To enhance employability by building professional networks.

2. Recent Improvements and Enhancements

The Croatian government, in collaboration with industry stakeholders, has introduced several measures to improve practical classes:

a) Structured Partnerships with Companies

- Schools establish formal agreements with local businesses to provide practical training opportunities.
- Companies are chosen based on their ability to offer relevant experiences and meet safety and quality standards.

b) Curriculum Alignment

- Practical training programs are now closely aligned with school curricula and labor market needs.
- Companies and schools collaborate to design training modules that complement classroom learning, ensuring consistency in educational objectives.

c) Mentorship Programs

- Each student is assigned a workplace mentor, who guides them through their training.
- Mentors are trained to provide constructive feedback and assess the student's progress.

d) Extended Training Periods

- The duration of practical classes has been increased in some programs to give students deeper exposure to workplace operations.
- Extended internships or apprenticeships allow for more comprehensive learning.

3. Integration of Modern Tools and Technologies

- Digital Monitoring: Some programs now include digital platforms to track student progress during their practical training.
- Access to Advanced Equipment: Companies often provide access to state-of-the-art tools and technologies, giving students a competitive edge.

4. Benefits of Improved Practical Training Programs

a) Enhanced Skill Development

- Students acquire technical and soft skills (e.g., teamwork, communication, problem-solving) essential for their profession.
- Exposure to workplace scenarios helps build confidence and adaptability.

b) Improved Employment Opportunities

- Practical training increases employability by enabling students to gain industry-specific experiences.
- Many companies offer permanent positions to students after their training period.

c) Stronger School-Industry Ties

- Collaboration fosters innovation in vocational education and helps schools stay updated on industry trends.

5. Challenges and Solutions

a) Insufficient Company Participation

- Challenge: Not all companies are willing or able to provide training opportunities due to resource constraints.
- Solution: Government incentives, such as tax benefits or subsidies, encourage businesses to participate.

b) Uneven Quality of Training

- Challenge: Some companies may not offer consistent or high-quality training.
- Solution: Establishing strict guidelines and regular monitoring ensures training standards are upheld.

c) Geographical Disparities

- Challenge: Students in rural areas may have fewer opportunities for practical training.
- Solution: Encouraging remote or hybrid training models and providing transportation support for students.

6. Key Stakeholders and Their Roles

a) Schools

- Identify and collaborate with companies.
- Provide students with the necessary theoretical background before practical training.

b) Companies

- Offer structured training experiences and mentorship.
- Evaluate student performance and provide feedback.

c) Government and Agencies

- Develop policies and frameworks to regulate and support practical training.
- Provide financial incentives to companies participating in training programs.

7. Examples of Implementation

- Apprenticeships in Automotive and Mechanical Fields:
  - Students train in local workshops, learning hands-on repair and diagnostic skills.
- Hospitality Sector:
  - Practical classes in hotels and restaurants involve managing real events, preparing meals, and interacting with customers.
- IT and Technology:
  - Internships in tech companies allow students to work on software development projects or IT system maintenance.

8. Future Directions

- Integration of Emerging Technologies: Expanding training to include digital skills, such as coding, data analytics, or working with automation systems.
- Public-Private Partnerships: Encouraging collaboration between the government, schools, and private sectors to ensure sustainable improvement.
- Feedback Mechanisms: Regular surveys and reviews to improve program design and address student and company concerns.

The focus on improving practical classes for vocational school students in Croatia is transforming vocational education into a dynamic, industry-aligned system. By enhancing collaboration between schools and companies, modernizing training methods, and addressing challenges, Croatia is equipping students with the skills and experiences needed for successful careers in an evolving job market.

3.3. Strengthening the competence of teaching staff in vocational schools

An important area for in-service training in Poland and Croatia is the strengthening of the competences of teaching staff through the introduction of professional development programmes for teachers, through which, including, they can familiarise themselves with new technologies and apply activating teaching methods. An important area is the combination of in-service teacher training in the area of cooperation with entrepreneurs, or the building of a vocational training strategy and the development of competence centres.

3.3.1. Actions aimed at improving the competences of vocational training teachers in Poland

Good practice 1. Leader of the external cooperation of a vocational school (LEADext) in Poland

Rationale for selecting good practice:

The project proposes to develop a training programme and educational materials in the form of an educational package and an e-learning course on 'Coordinating VET providers' cooperation with external companies, including attracting sponsors'. This is based on a study of the working environment and the development of a competence profile within the training scope. The introduction of new competences, such as 'coordinating the cooperation of an educational institution with external companies, including attracting sponsors', and the development of e-learning and tools for remote validation and certification of competences, is an innovative solution in the field of VET. The project promotes cooperation between vocational schools and companies from different countries, which fosters the exchange of experiences and best practices and the building of sustainable partnerships.

Coordinating institution

- Name: Chamber of Commerce and Industry of the Radom Area
- Location: Radom, Poland
- Partners:

  Development and Innovation Foundation (WIR), Rajec Poduchowny, Poland
  Jordbrugets Uddannelsescenter Århus, Midtjylland Beder, Denmark
  Federacion Empresarial Metalurgica Valenciana, Valencia,Spain
  Action Synergy SA, Κρήτη (Kriti), Greece

Context and background

The European Skills Agenda for Sustainable Competitiveness, Social Justice and Resilience (2020) points out that 'to be successful, accessible lifelong learning for all must become a reality in Europe'. The guiding principle of these aspirations should be the acquisition of the skills needed for the job. It should be mentioned that many people attend schools where digital transformation is lagging behind. One reason for the delay may be the lack of modern equipment in schools. According to the partnership, an important role can be played by strengthening cooperation between vocational schools and the environment by introducing a liaison officer - a school employee with the competence "coordination of cooperation of the educational institution with external companies, including attracting sponsors". The project activities are part of initiatives to make the European education area a reality by 2025 by eliminating barriers to learning. The idea of the project is to respond to the NEEDS of VET education in partner countries and across the EU. There is no offer of training, teaching materials on how schools should cooperate with the environment to acquire e.g. equipment for schools, organise internships and apprenticeships in companies.

PARTNERSHIP NEEDS:

- Expanding the educational offer to include opportunities for in-service training for leaders/ coordinators of school-environment cooperation, particularly in attracting companies to sponsor the purchase of modern equipment,
- a lack of interactive, activating digital tools to support trainees' acquisition of professional competences, to engage with the school environment and to develop digital skills,
- lack of procedures and tools for remote validation and certification of professional competences,
- mismatch between VET education and labour market technologies/tools.

NEEDS OF THE TARGET GROUP: From surveys and interviews with vocational school teachers and training institutions carried out by the project partners, it emerges, including, that in the partner countries:

- Lack of leaders in vocational schools in terms of cooperation with the environment,
- There is a lack of tools for such cooperation,
- there is a perceived mismatch between vocational education and the needs of the labour market,
- there is a perceived mismatch between VET education and labour market technologies/tools,
- there is a lack of teaching materials, including e-learning for preparing leaders for outreach.

Aims and objectives

- Main objective: To improve the quality of vocational training by developing tools for vocational training teachers, principals, workshop managers for cooperation, sponsorship, retrofitting of vocational training workshops with labour market relevance equipment.
- Assumed outcomes:
  - will translate, including, into quality improvement in VET through the identification of a leader for outreach in the vocational school,
  - will contribute to innovation in the field of VET by introducing a more attractive training programme in accordance with the individual needs and expectations of participants,
  - will translate into an extension of the VET offer with a developed comprehensive educational offer enabling school staff to acquire competences in cooperation with the environment,
  - increase the attractiveness of education through the use of remote learning, thereby supporting the digital development of school staff,
  - enable course participants to validate (validate and certify) their acquired competences remotely.

Description of the solution

The following outputs were developed as part of the project:

- IO.1 Professional competence profile for 'coordination of the educational establishment's cooperation with external companies, including attracting sponsors',
- IO.2 Modular training programme for the new competence "coordination of the educational establishment's cooperation with external companies, including obtaining sponsors" in relation to ECVET requirements,
- IO.3 A set of learning packages for the trainer and trainee in the new competence "coordination of the educational establishment's cooperation with external companies, including obtaining sponsors",
- IO.4. e-learning training on the new competence "coordination of the educational establishment's cooperation with external companies, including attracting sponsors",
- IO.5. Test bank for diagnosing the level of competence and individualising the trainee's learning process

- IO.6. Procedures for environmental validation and certification of the new competence “coordination of the educational establishment’s cooperation with external companies, including the acquisition of sponsors”.

Sources of funding

- Erasmus+: action KA220-VET - Cooperation partnerships in the vocational education and training sector.
- Own resources: funding of extraordinary costs related to the translation of texts.

Benefits

- Vocational schools
  - Improving the quality of education: with modern equipment and better cooperation with companies, schools will be able to offer more up-to-date and practical curricula.
  - Increased attractiveness: schools with modern equipment and strong links to industry will be more attractive to potential students.
- Teachers and management
  - Professional development: teachers and principals will have access to training and tools to help them work better with companies and attract sponsors.
  - New competences: gaining skills in coordinating outreach and attracting sponsors.
- Students:
  - Better preparation for the labour market: with state-of-the-art equipment and placements in companies, students will be better prepared for the demands of the labour market.
  - Enhanced learning opportunities: students will have access to more interactive and engaging learning tools.
- External companies:
  - Access to a skilled workforce: companies will be able to work with schools to train future employees according to their needs.
  - Ability to influence the curriculum: companies will have the opportunity to co-create curricula, allowing graduates’ competences to be better aligned with market requirements.
- Local community:
  - Increased regional competitiveness: better vocational training for young people will contribute to the competitiveness of the local labour market.
  - Increased employment: better preparing students for the labour market can lead to increased employment in the region.

Conclusions and recommendations

- Conclusions:
  - Vocational schools lack people responsible for coordinating cooperation with external companies, which limits the possibilities to attract sponsors and organise internships.
  - The mismatch between vocational education and the labour market, as the current curricula in vocational schools do not fully meet the needs of the labour market, resulting in a lack of an adequately skilled workforce.
  - Many vocational schools lack modern equipment, making it difficult for students to gain practical skills.
  - There is a need for interactive digital tools to support learning and collaboration with the community.

- There is a lack of procedures and tools for remote validation and certification of professional competences, which makes it difficult to formally validate acquired skills.

- Recommendations:
  - Develop and implement training programmes for teachers and management to prepare them to work effectively with external companies and attract sponsorship.
  - Development and implementation of a comprehensive educational offer that will enable teachers and students to acquire the necessary competences to collaborate with the environment and develop digital skills.
  - Building sustainable partnerships between vocational schools and companies to better adapt curricula to the needs of the labour market and organise apprenticeships and internships for students.
  - Investment in state-of-the-art equipment and technology to enable students to acquire practical skills in line with labour market requirements.
  - Development and implementation of interactive digital tools to support the learning process and enable remote validation and certification of competences.

Contact

- Contact person: Katarzyna Skoczylas, Chamber of Commerce and Industry of the Radom Area
- Website: https://radomskibiznes.pl/leadext

Good Practice 2. Industry Skills Centres

Rationale for selecting good practice:

As part of the National Recovery and Resilience Plan, Poland is setting up 120 sector-specific skills centres that will provide space for knowledge and technology transfer between the business and education worlds and a holistic approach to vocational training and lifelong learning, as well as helping students and adults to obtain new vocational qualifications. The centres will also support teachers and work with researchers to provide expertise in specific sectors of the economy.

Coordinating institution

- Name: Foundation for the Development of the Education System (intermediate body)
- Location: Warsaw, Poland
- Partners:

  Governing bodies, schools and vocational training establishments

Context and background

The Branch Skills Centres (BCU) in Poland is a new initiative to improve the quality of vocational and technical education. The establishment of these centres is a response to the growing demand for qualified specialists in various industrial and technological sectors. Their establishment is linked to:

- Labour market needs - Poland's economy is growing dynamically, which increases the demand for skilled workers in sectors such as automation, robotics, mechatronics, renewable energy, transport and logistics.
- Vocational education reform - The Ministry of Education and Science and the Foundation for the Development of the Education System initiated the BCU project as part of a broader vocational education reform aimed at better aligning education with labour market needs.
- Developing cooperation with industries, as more than 100 industry organisations, including chambers of commerce, professional associations and public and private companies, were invited to set up the centres.

More than PLN 1.4 billion has been earmarked for the creation of 120 centres.

Aims and objectives

- The main objective: to support the preparation of human resources for the modern economy. This means that BCUs are tasked with adapting vocational education to the dynamically changing requirements of the labour market, especially in the context of digital and ecological transformation.
- Assumed outcomes:
  - Improving the quality of vocational education - BCUs aim to raise the standards of vocational education through the introduction of modern technologies and innovative teaching methods.
  - Better alignment with the labour market - by working closely with businesses, the centres will better prepare pupils and students for the demands of today's labour market.
  - Upgrading vocational skills - BCUs will offer courses and training for adults, enabling them to acquire new skills and qualifications.
  - Increase in innovation - the centres will promote innovation and technological development in various industries, which will contribute to increasing the competitiveness of the Polish economy.
  - Integration of education and business - BCUs will be a place for collaboration between schools, universities and businesses, allowing curricula to be better aligned with employers' needs.
  - Increasing the attractiveness of vocational education - by modernising infrastructure and introducing modern teaching methods, vocational education will become more attractive to young people.

Description of the solution

The following outputs were developed as part of the project:

- 120 sectoral skills centres will be created, which will renovate or build premises in which to carry out educational activities and purchase techno-didactic equipment. Up to 75% of the project budget can be used for this. The value of a project that can be obtained is between PLN 9 million and PLN 16 million.
- A minimum of 24,000 students, adults - working or wishing to retrain, vocational training teachers, students, academics - will be trained.
- Within the BCU, activities will be undertaken in 4 areas:
  - education and training activities, which include the organisation of courses, training and workshops for pupils, students and adults aimed at improving professional qualifications and adapting skills to the needs of the labour market;
  - an integration and support activity that focuses on cooperation between schools, universities and businesses, creating platforms for the exchange of knowledge and experience and supporting the professional development of participants;
  - innovation and development activities, which are aimed at promoting modern technology and innovation in various industries, supporting research and development and implementing new technological solutions;
  - counselling and promotional activities, including offering careers advice, promoting vocational training and organising events to raise awareness of career opportunities.

Sources of funding

- European funding: BCUs are co-financed by the European Union, under programmes such as the European Social Fund (ESF) and the European Regional Development Fund (ERDF).
- Local government funds: local governments also contribute to BCU funding by supporting the development of centres in their area, as VAT is not eligible and must usually be borne by local governments.

Benefits

- Pupils and students:
  - Better preparation for the labour market as, thanks to modern technology and teaching methods, students gain practical skills that are highly valued by employers.
  - Access to modern infrastructure - students have the opportunity to use state-of-the-art laboratories and workshops, enhancing their professional competences.
- Adults and career changers:
  - Upskilling - BCUs offer courses and training to enable adults to gain new skills and qualifications, which is particularly important in the context of changing labour market requirements.
  - Retraining support - those wishing to change profession can benefit from training programmes tailored to the current needs of the economy.
- Employers and businesses:
  - Access to a skilled workforce - companies gain access to a workforce well prepared to work in modern industries.
  - Collaboration with education - companies can collaborate with BCU on curriculum development to better tailor education to their needs.
- Vocational schools:
  - Increased prestige - cooperation with BCU increases the prestige of schools and universities that can offer modern curricula.
  - Access to modern technology - educational establishments gain access to modern technology and infrastructure, which increases the quality of education.
- Local community:
  - Economic development of the region - the establishment of the BCU contributes to the development of the local economy by creating new jobs and improving the skills of local people.
  - Increased attractiveness of the region - modern education centres attract investors and can make the region more attractive to new residents.

Conclusions and recommendations

- Conclusions:
  - BCUs contribute to raising the standards of vocational education by introducing modern technology and innovative teaching methods.
  - By working closely with businesses, curricula are better matched to the current needs of employers, increasing graduates' employability.
  - BCUs offer a wide range of courses and training, enabling adults to acquire new skills and qualifications, which is crucial in the context of a rapidly changing labour market.
  - Promoting modern technology and innovation in various industries contributes to the competitiveness of the Polish economy2.
  - BCUs provide a platform for collaboration between schools, universities and businesses, allowing for better alignment of curricula with employers' needs.
- Recommendations:
  - In order to further adapt the curricula to the needs of the labour market, it is recommended to continue and develop cooperation with companies from different industries.
  - Further investment in modern laboratories, workshops and teaching equipment is needed to maintain the high standard of education.
  - In order to ensure high quality education, it is important that teachers have access to regular training and in-service courses.

- Information and promotion campaigns are recommended to increase awareness and attractiveness of vocational training among young people and adults.
- Regular monitoring and evaluation of the effectiveness of BCU's activities will allow for ongoing adaptation of strategies and programmes to meet changing labour market needs.

Contact

- Contact person: none
- Website: https://www.frse.org.pl/kpo-bcu

3.3.2. National vocational training strategy and development of competence centres in Croatia

Croatia's approach to vocational education and training (VET) focuses on improving quality, relevance, and accessibility through strategic frameworks and the establishment of competence centers. These efforts aim to align the VET system with the needs of the labor market, foster innovation, and support economic development.

1. National Vocational Training Strategy

The Croatian government has implemented a comprehensive strategy for vocational education and training, which is aligned with the EU Education and Training 2020 Strategy. Key components include:

a) Objectives:

- Improving Educational Quality: Enhance the quality of VET through modern curricula, teacher training, and resource allocation.
- Labor Market Alignment: Develop programs that address current and future labor market demands, ensuring that students graduate with relevant skills.
- Promoting Lifelong Learning: Create pathways for continuous learning and upskilling for individuals throughout their careers.

b) Key Policy Areas:

1. Curriculum Modernization:
   - Aligning VET programs with industry standards and emerging technologies.
   - Developing modular, flexible curricula to cater to different learning needs.
2. Work-Based Learning (WBL):
   - Expanding dual education models, where students combine theoretical learning with hands-on experience in companies.
   - Strengthening collaborations between schools and businesses to create structured internships and apprenticeships.
3. Digitalization:
   - Incorporating digital tools and e-learning platforms into the VET system.
   - Training students in digital competencies to prepare them for a digitalized economy.
4. Inclusion and Accessibility:
   - Ensuring equal access to vocational education for marginalized and rural populations.
   - Providing financial and logistical support for students and families in need.
5. Teacher and Trainer Development:
   - Continuous professional development programs for VET teachers and trainers.
   - Encouraging partnerships with industry professionals to enhance teaching quality.

2. Competence Centres in Croatia

Competence Centres (Regional Centres of Competence or RCCs) are specialized institutions within the Croatian VET system that play a pivotal role in enhancing vocational education quality and innovation.

a) Definition and Purpose:

- These are state-of-the-art institutions that serve as hubs for vocational education, innovation, and research.
- They aim to provide high-quality training, promote lifelong learning, and act as a link between schools, industry, and the community.

b) Features:

1. Advanced Infrastructure:
   - Equipped with modern tools and technologies to provide hands-on training in specific sectors.
   - Examples include labs for robotics, renewable energy, healthcare, and hospitality.
2. Specialized Training Programs:
   - Offer tailored training programs for students, professionals, and unemployed individuals.
   - Focus on sectors critical to Croatia's economy, such as tourism, manufacturing, agriculture, IT, and healthcare.
3. Teacher and Trainer Development:
   - Provide specialized training for VET educators to stay updated with industry trends.
   - Serve as knowledge-sharing platforms for best practices in vocational education.
4. Industry Collaboration:
   - RCCs collaborate closely with businesses to ensure training programs meet labor market needs.
   - Companies often contribute to curriculum development and provide trainers or internships.

c) Objectives of RCCs:

- Improve Employability: Equip students with practical, industry-relevant skills.
- Foster Innovation: Act as centers for research and development in vocational education.
- Regional Development: Address specific economic needs of regions and reduce skills mismatches.

d) Examples of RCCs in Croatia:

- Centres specializing in tourism and hospitality are established in coastal regions to support the vital tourism sector.
- Agricultural RCCs in rural areas promote sustainable farming practices and food production.
- IT and technology-focused RCCs are being developed in urban hubs to cater to the growing tech industry.

3. Challenges and Opportunities

Challenges:

- Resource Constraints: High initial investment is required for RCC infrastructure and equipment.
- Teacher Training Needs: Educators need continuous professional development to effectively use modern tools.
- Labor Market Dynamics: Rapid changes in technology and industry demands require frequent updates to curricula.

Opportunities:

- EU Funding: Croatia benefits from EU structural funds to support VET improvements and RCC development.

- Innovation Hubs: RCCs can drive regional innovation and entrepreneurship by acting as incubators for new ideas.
- Global Competitiveness: A well-trained workforce enhances Croatia's competitiveness in the global market.

4. Impact on the Croatian Education and Employment Landscape
   - Improved Student Outcomes: Students graduating from VET programs associated with RCCs are more employable and better equipped for industry challenges.
   - Economic Growth: By addressing skills shortages and fostering innovation, RCCs contribute to regional and national economic development.
   - Social Inclusion: Programs ensure that disadvantaged populations have access to high-quality vocational education and career opportunities.

5. Future Directions
   - Expanding the network of RCCs to cover more regions and sectors.
   - Strengthening partnerships with international organizations and companies for knowledge exchange and funding.
   - Leveraging emerging technologies such as artificial intelligence and renewable energy for innovative vocational training programs.

The National Vocational Training Strategy and the development of Competence Centres are transforming Croatia's vocational education landscape. By focusing on quality, innovation, and labor market alignment, these initiatives are equipping students with the skills needed for a competitive, technology-driven economy while fostering regional development and social inclusion.

3.4 Increasing the attractiveness of vocational training

The chapter presents examples of good practice aimed at increasing the attractiveness of vocational education through the development of vocational skills campaigns and competitions, such as WorldSkills.

3.4.1. Professional skills campaigns and competitions - WorldSkills Croatia

Professional Skills Campaigns and Competitions: WorldSkills Croatia

WorldSkills Croatia is a flagship initiative aimed at promoting excellence in vocational education and training (VET) through skill competitions and awareness campaigns. It is part of the global WorldSkills movement, which showcases vocational skills, fosters innovation, and raises the profile of skilled professions.

1. What is WorldSkills Croatia?

WorldSkills Croatia is the national platform under the Agency for Vocational Education and Training and Adult Education (ASOO). It organizes competitions and campaigns to:

- Promote Vocational Excellence: Highlight the importance of skilled trades and inspire students to pursue careers in these fields.
- Enhance Skills Recognition: Showcase the technical and professional skills essential to economic development.
- Prepare Students for Global Competitiveness: Align VET standards in Croatia with international benchmarks.

2. Professional Skills Campaigns

a) Objectives:

- Raise awareness about vocational education and its role in the labor market.
- Encourage young people to consider careers in skilled professions.
- Highlight the opportunities for career growth and innovation in VET.

b) Key Activities:

1. Public Awareness Campaigns:
   - Multimedia campaigns (TV, radio, social media) to promote vocational careers.
   - Success stories of skilled professionals and competition winners to inspire students.
2. School Outreach:
   - Workshops and presentations in schools to educate students about VET pathways.
   - Career counseling sessions focused on opportunities in skilled trades.
3. Industry Collaboration:
   - Partnerships with businesses to showcase cutting-edge tools, technologies, and career prospects in various industries.
   - Industry demonstrations and hands-on activities for students.
4. Community Engagement:
   - Events and open days at vocational schools and training centers.
   - Local fairs and exhibitions featuring vocational education programs.

3. Skills Competitions:

a) National Skills Competition:

- WorldSkills Croatia National Competition is the largest skills event in Croatia, held annually.
- It brings together students from vocational schools across the country to compete in various skill categories.

b) Skill Categories:

- Covers a wide range of sectors, including:
  - Technical Trades: Mechatronics, welding, CNC machining, electrical installations.
  - Creative Professions: Graphic design, floristry, fashion technology.
  - Service Industries: Cooking, restaurant service, hairdressing.
  - New Technologies: IT software solutions, robotics, cybersecurity.

c) Competition Process:

1. School-Level Competitions:
   - Students compete locally to qualify for regional and national competitions.
2. Regional and National Levels:
   - Top performers from each region compete at the national level in Zagreb.
3. International Participation:
   - Winners represent Croatia in WorldSkills International and EuroSkills competitions.

d) Evaluation and Standards:

- Competitions are judged by industry professionals and educators.
- Assessments are based on technical accuracy, innovation, and creativity.

4. Impact of WorldSkills Croatia

a) For Students:

- Skill Development: Competitions provide opportunities to refine technical and soft skills.
- Networking: Students connect with peers, professionals, and potential employers.
- Recognition: Winners gain recognition at the national and international levels.

b) For Educators:

- Curriculum Improvement: Insights from competitions inform updates to VET curricula.
- Professional Development: Teachers and trainers participate as mentors and judges, enhancing their expertise.

c) For Industry:

- Talent Pipeline: Employers identify and recruit skilled talent through competitions.
- Innovation Showcase: Companies demonstrate new tools and techniques to future professionals.

d) For Society:

- Changing Perceptions: Campaigns and competitions elevate the status of vocational professions.
- Economic Benefits: A skilled workforce drives economic growth and competitiveness.

5. International Participation:

Croatia actively participates in international competitions organized by WorldSkills International and EuroSkills. These events provide:

- Global Exposure: Croatian students compete against peers worldwide, benchmarking their skills.
- Knowledge Exchange: Opportunities for sharing best practices in VET across countries.
- Cultural Exchange: Students and educators experience different work cultures and methods.

6. Challenges and Future Directions

Challenges:

- Limited Awareness: Despite growing recognition, VET and WorldSkills initiatives still need broader societal support.
- Resource Constraints: Financial and infrastructural limitations can affect training and participation.

Future Directions:

- Expanding Participation: Engage more schools, students, and industries in skills competitions.
- Digital Integration: Include more digital and emerging technology categories.
- Stronger Industry Collaboration: Deepen partnerships with businesses to enhance training and sponsorships.

WorldSkills Croatia plays a transformative role in promoting vocational excellence and elevating the status of skilled professions. Through innovative campaigns and competitions, it inspires students, engages educators, and strengthens ties with industry, fostering a skilled workforce ready to meet the challenges of a dynamic global economy.

3.4.2. Cooperation with industry and local communities to raise the profile of vocational training - local vocational skills competitions in Poland

Good Practice 1. Skills competition in dry construction competition

Rationale for selecting good practice:

WorldSkills vocational skills competitions are international events that aim to promote and improve the quality of young people's vocational skills. Students from trade schools, technical schools and university students from all over the world take part in these competitions. In Poland, the organiser of

the WorldSkills vocational skills competitions is the Foundation for the Development of the Education System. This foundation coordinates activities related to WorldSkills Poland, supporting young people in improving their professional qualifications and promoting vocational education. In the example given, the organisation of the regional professional skills competition entitled. “Drywall Systems Radom 2021” involved the staff of the Łukasiewicz Research Network - Institute of Exploitation Technology (project coordinator) and the Kazimierz Wielki Building Schools Complex in Radom (co-organiser of the competition), as well as an industry organisation: Confederation of Construction and Real Estate.

Coordinating institution

- Name: Łukasiewicz Research Network - Institute of Exploitation Technology
- Location: Radom, Poland
- Partners:

  ŁUKASIEWICZ Research Network - Institute of Exploitation Technology, Poland (project coordinator);
  Confederation of Construction and Real Estate (KBiN), Poland (partner);
  National Federation of Hungarian Building Contractors (EVOSZ), Hungary (partner);
  Foundation for the Development of Education and Innovation (FERI), Poland (partner);
  Education and Information Technology Centre (EDITC LTD), Cyprus (partner);
  Zespół Szkół Budowlanych im Kazimierza Wielkiego, Radom, Poland (unaffiliated partner).

Context and background

The first WorldSkills competition was organised in Madrid, Spain in 1950. It was an event that launched the international competition in professional skills, promoting excellence and innovation in various fields. In Poland, the WorldSkills Poland initiative was launched in 2017.

Currently, more than 60 different competitions are contested in WorldSkills competitions, covering a broad spectrum of professional skills, such as automotive mechanics, industrial robotics, cooking, floristry, information technology, hairdressing, plumbing and heating, and many more.

The latest EuroSkills competition took place in Gdansk, Poland, from 5 to 9 September 2023. Almost 600 young professionals from 32 countries took part, competing in 43 different competitions.

At the last EuroSkills competition in Gdansk in 2023, Polish athletes won medals in four competitions:

- Automotive technology - gold medal
- Hairdressing - silver medal
- Fashion technology - bronze medal
- Sanitary and heating installations - Bronze medal

These are great achievements that demonstrate the high level of skill of the Polish participants.

In Poland, the organiser of the WorldSkills competitions is the Foundation for the Development of the Education System (FRSE). This foundation coordinates activities related to WorldSkills Poland, supporting young people in improving their professional qualifications and promoting vocational education. Competitors representing Poland in WorldSkills competitions can count on a variety of support, which includes:

- training and preparation - participants have access to specialised training and workshops to help them improve their professional skills;
- mentoring - each athlete is assigned a mentor who supports them in their preparations and during the competition itself.
- Participation in competitions provides an opportunity to network with employers and other industry professionals.

Aims and objectives

- Main objective: to develop a recruitment model for global vocational skills competitions, to promote vocational skills through the exchange of experience and international cooperation, to develop national skills competitions in cooperation with professional organisations, to promote vocational education and training, to increase the motivation of young people to learn a trade.
- Assumed outcomes:
  - preparation of organisers, experts and the development of competition documentation and the organisation at local level, in cooperation with the school providing training in the construction professions, of a nationwide vocational skills competition based on the procedures of the international WorldSkills and EuroSkills competitions.

Description of the solution

As part of the international project Lukasiewicz - ITeE together with project partners developed:

- the organisational documentation needed to run a professional skills competition based on the procedures of the international WorldSkills and EuroSkills competitions;
- sets of practical tasks necessary for a competition in the area of drywall construction based on the procedures of the international WorldSkills and EuroSkills competitions.

The organisers of the competition - the Łukasiewicz Research Network - the Institute of Exploitation Technology in Radom and the Confederation of Construction and Real Estate in Warsaw - found it appropriate to hold the competition on the premises and with the support of teachers at the Kazimierz Wielki Building School Complex in Radom.

As part of the first stage, the potential participant was tasked with making a plasterboard wall according to the submitted design, documenting the making process in the form of photographs and a video, and documenting the final result. On the basis of the submitted documented data, the jury selected 9 finalists, who entered the competition proper on 21-22.10.2021 organised at the Complex of Building Schools in Radom.

The finals of the competition were practical in nature. Above all, the contestants had to demonstrate above-average professional skills, but the ability to work under pressure, prioritise, deal with stress and disappointment, react quickly and be accurate also determined the winner. The competition showed the students their professional capabilities. It also made them realise what skills are needed in the labour market today .

From the top three contestants, a representative was selected by the Foundation for the Development of the Education System for the EuroSkills competition in Gdansk.

Sources of funding

- Erasmus+ Programme, Vocational Education and Training sector, Action 2 Cooperation for innovation and good practices
- Partner institutions' own resources.

Benefits

- For students:
  - establishing relationships with other students and teachers;
  - identifying your strengths and weaknesses;
  - increased motivation for professional development;
  - shaping such character traits, personality traits such as commitment, perseverance, responsibility;

- increase in professional competence and better preparation for the examination to prove professional competence;
- gaining contacts to potential employers (networking);
- to inspire a spirit of competition.

- Benefits for the company:
  - company promotion;
  - participation in the professional development of students, which can translate into the preparation of future employees;
  - participation in the process of adapting education to the labour market.
- Benefits for the school:
  - professional development of the teacher - supervisor of the student participating in the professional skills competition;
  - increase the school's reputation, which may translate into the number of potential primary school leavers applying to vocational schools in Poland;
  - Increased job satisfaction for teachers - supervisors of students participating in the professional skills competition;
  - establishing cooperation with other schools participating in the competition.

Conclusions and recommendations

- Conclusions:
  - Regional and local competitions can be organised by a vocational school in cooperation with a scientific institute and a professional organisation.
  - Cooperation with international partners contributes to the exchange of experience and raising the standards of competitions.
  - The organisation of competitions by the Foundation for the Development of the Education System (FRSE) and the support of mentors and specialised training are crucial to the success of participants.
  - These competitions effectively promote vocational education, motivating young people to develop their skills and improve their professional qualifications.
- Recommendations:
  - Continue to organise local professional skills competitions, such as 'Drywall Systems Radom 2021', to enable more students to compete and develop their skills.
  - Provide more financial support for participants in competitions so that they can focus on improving their skills without worrying about the costs associated with preparation.
  - Strengthen cooperation with businesses to better align training programmes with the needs of the labour market and provide students with practical experience.
  - Intensively promote the successes of Polish athletes in the media to raise public awareness of the importance of professional skills and to encourage young people to participate in competitions.
  - Develop mentoring programmes so that each entrant has access to the support of an experienced mentor to increase their chances of success.

Contact

- Contact person: Małgorzata Kowalska
- Website: https://itee.lukasiewicz.gov.pl/projekty/miedzynarodowe?view=article&id=223&catid=90

3.5 Support for vocational students

The chapter presents selected good practice examples of atypical career guidance activities aimed at students and young people.

3.5.1. Career counselling for vocational students in Poland

Good Practice 1: My profession, my future

Rationale for selecting good practice:

Vocational training is burdened by well-established stereotypes in society that translate into an aversion to vocational training, which, especially at the basic level, is seen as an option for people with lower intellectual aptitude. The widespread opinion that has circulated in recent years has taken away the prestige of this education. It is important to show that you can succeed after vocational school and that the educational path is not closed. In order to overcome this in Radom in the framework of vocational counselling, various undertakings are organised in which not only students, but also their parents, Radom entrepreneurs or Radom University staff take part. In general, it can be said that the initiatives undertaken within the framework of the "My Vocation, My Future" project are aimed at introducing primary and secondary school students to different career paths. Convincing young people to choose a practical education path is a must. A way to do this is to promote good cooperation between schools and companies.

Coordinating institution

- Name: Municipality of Radom
- Location: Radom, Poland
- Partners:

  Chamber of Commerce and Industry of the Radom Area

Context and background

The current legislation in Poland on the implementation of vocational guidance places an obligation on primary and secondary schools to establish cooperation with employers and their support of students' educational and career decision-making processes. From the point of view of individual schools, establishing effective and efficient cooperation is quite difficult. Therefore, the authorities of the City of Radom have come together with their partners to undertake tasks aimed at supporting schools in this area. Hence the idea of implementing the project "My profession, my future". The activities undertaken as part of the project have become a kind of bridge between students, parents, schools and representatives of Radom companies and universities.

Aims and objectives

- The main objective: to encourage primary school students to choose a career path and secondary school students to choose an education offer at the University of Radom by presenting the benefits of a specific profession.
- Assumed outcomes:
  - the involvement of Radom entrepreneurs to participate in career guidance classes aimed at primary and secondary school students (matriculation classes), as well as parents of primary school students;
  - supporting parents of primary school pupils by introducing them to the offer of Radom companies and encouraging their children to stay in Radom;
  - acquainting secondary school students with the offer of Radom companies and the University of Radom.

Description of the solution

The following activities were undertaken as part of the project:

- The organisation of annual interview sessions for parents of primary school pupils.

  The meeting with parents was attended by representatives of the Radom City Hall, who encouraged people to stay in Radom, explained the offer of vocational schools and the Radom metal company. A representative of the company presented the company and showed possible paths of education and professional development. More than 700 parents of eighth-grade students from 25 Radom primary schools took part in the 2023-2024 meetings.

- Meetings with students - secondary school graduates.

  These meetings were additionally attended by Radom University staff, who presented the offer and encouraged students to take advantage of it. In the 2024 edition of the project, more than 2,000 secondary school graduates from 27 secondary schools in Radom and the Radom region took part in the meetings.

- Radom EXPO - annual trade fair.

  It was attended by more than eighty exhibitors representing Radom businesses, vocational schools and the University of Radom. The exhibition was an excellent opportunity to showcase the city's economic potential to primary and secondary school students and residents of Radom and the surrounding area. The event attracted crowds of visitors, but was also an inspiring space with a strong impact on education, professional development and local social awareness. Another vintage of eighth-grade and high school graduates received valuable information to help them choose their education profile and future career path. Thanks to their participation in Radom Expo, students were able to see how dynamically the labour market is changing and what skills will be key in the coming years. Participation in Radom Expo gave young people a better understanding of which sectors are currently the fastest growing and which career paths may prove the most promising.

- Workshops for careers advisers and teachers.

  After the organisation of the first edition of the Radom Expo, a low level of student participation was noticed. This event is an opportunity for students to gather in one place and at a short time a lot of information to support the process of planning their educational and career path. Therefore, a workshop was organised to prepare career counsellors and teachers to conduct activities with students to prepare them for active participation in the Radom EXPO 2024 edition event.

Sources of funding

- Local government funds.

Benefits

- Benefits for students:
  - a better understanding of the labour market, as students have the opportunity to learn about different career paths, which helps them to make an informed choice about their future career path;
  - Practical experience through participation in workshops and meetings with representatives of different professions enable students to acquire practical skills and knowledge;
  - motivation to learn - students see real opportunities for success after completing vocational school, which can increase their motivation to learn.
- Benefits for parents:
  - awareness of educational and career opportunities, as parents gain knowledge of different career paths, enabling them to better support their children in choosing their future career path.
  - involvement in the educational process of pupils, through attendance at interviews and workshops parents' involvement in their children's education is increased.

- Benefits for entrepreneurs:
  - company promotion - entrepreneurs have the opportunity to present their companies and employment opportunities, which can attract future employees;
  - cooperation with schools: establishing cooperation with schools allows entrepreneurs to influence the education of future employees according to labour market needs.
- Benefits for schools:
  - Support in the implementation of career guidance - the project supports schools in the implementation of career guidance responsibilities, which can improve the quality of education;
  - building relationships with local business by establishing partnerships with businesses and universities the school's position in the local community is strengthened.
- Community benefits:
  - Retaining young talent - encouraging young people to stay in Radom and work in local companies contributes to the economic development of the city;
  - raising the prestige of vocational education, as the project helps to break down stereotypes associated with vocational education, which can make it more attractive.

Conclusions and recommendations

- Conclusions:
  - The 'My Vocation, My Future' project effectively breaks down negative stereotypes about vocational training, showing that it is a valuable educational pathway leading to professional success.
  - By involving different stakeholders such as students, parents, entrepreneurs and university staff, the project raises awareness of the educational and career opportunities available in Radom.
  - The project promotes cooperation between schools, entrepreneurs and universities, which contributes to better preparing young people to enter the labour market.
  - Seeing the real possibilities for success after vocational school, students are more motivated to learn and develop their skills.
  - Parents gain valuable information and support, enabling them to better support their children in their career choices.
- Recommendations:
  - The 'My profession, my future' project should be continued and developed to include even more students and parents.
  - Organise more workshops and meetings with representatives of different professions so that students have even more opportunities to gain practical experience.
  - Promote success stories of vocational graduates to show that vocational education can lead to a rewarding career.
  - Establish partnerships with even more local businesses to provide students with a wide range of career opportunities.
  - Regular monitoring and evaluation of the project outcomes in order to continuously make improvements and adapt the activities to the needs of students and the labour market.

Contact

- Contact person: Anna Burska (Chamber of Commerce and Industry of Radom)
- Website: https://zawodowcyradom.pl/

3.5.2. Mentoring programmes, career guidance and opportunities for further education or employment in Croatia

In Croatia, mentoring programs and career guidance initiatives are critical components of vocational education and training (VET). These efforts aim to support students and job seekers in making informed career choices, developing professional skills, and accessing further education or employment opportunities.

1. Mentoring Programs

a) School-Based Mentoring

- Objective: To provide students with guidance on navigating their education and career paths.
- Implementation:
  - Teachers and school counselors act as mentors.
  - Regular one-on-one or group mentoring sessions focus on personal development, career goals, and skills acquisition.
- Example:
  - Vocational Mentorship Program (ASOO): Organized by the Agency for Vocational Education and Training and Adult Education (ASOO), this program trains vocational educators to mentor students in skill development and career planning.

b) Industry Mentoring

- Objective: To connect students with professionals from industries related to their vocational programs.
- Implementation:
  - Mentors from partner companies provide hands-on guidance during internships or apprenticeships.
  - Students gain insights into workplace expectations and career advancement.
- Example:
  - Apprenticeship Program in Tourism: Hospitality and tourism students are paired with mentors in hotels and restaurants to learn about customer service, event management, and culinary arts.

c) Youth Mentoring Initiatives

- Objective: To support marginalized or at-risk youth in accessing education and employment opportunities.
- Implementation:
  - NGOs and community organizations pair young people with mentors who provide life skills training and career advice.
- Example:
  - Step Forward Program: A mentoring initiative targeting youth from disadvantaged backgrounds, helping them transition to education or work.

2. Career Guidance

a) Career Counseling in Schools

- Objective: To help students identify their interests, strengths, and career goals.
- Implementation:
  - Career counselors provide individual and group sessions.
  - Schools organize career days, job fairs, and workshops.

- Example:
  - Career Guidance Days in Vocational Schools: Annual events where students interact with employers, alumni, and career counselors to explore career paths.

b) Digital Tools and Platforms

- Objective: To offer career exploration resources and labor market insights.
- Implementation:
  - Online platforms provide tools like aptitude tests, career matching, and job market analysis.
- Example:
  - e-Career Guide: A digital tool provided by the Croatian Employment Service (CES) that helps students explore careers and plan their education paths.

c) Employment Service Programs

- Objective: To provide career guidance to job seekers and those looking to upskill.
- Implementation:
  - CES counselors offer guidance, skills assessments, and job placement support.
- Example:
  - Professional Counseling Program (CES): Offers tailored career guidance for unemployed individuals, helping them identify suitable job opportunities or training programs.

3. Opportunities for Further Education

a) Lifelong Learning Programs

- Objective: To enable individuals to upgrade their skills or change careers.
- Implementation:
  - Vocational schools and adult education centers offer courses and certifications.
- Example:
  - Adult Vocational Training: Short-term courses in areas like IT, healthcare, and mechanics are available for individuals seeking new qualifications.

b) Pathways to Higher Education

- Objective: To allow vocational students to transition to higher education.
- Implementation:
  - VET graduates can pursue tertiary education at polytechnics or universities.
- Example:
  - Technical Universities for VET Graduates: Polytechnics in Croatia accept VET graduates into programs like engineering, business, and IT, bridging the gap between vocational and academic education.

4. Employment Opportunities

a) Apprenticeships and Internships

- Objective: To provide practical work experience that often leads to permanent employment.
- Implementation:
  - Companies partner with vocational schools to offer apprenticeships.
- Example:
  - Automotive Apprenticeship Program: Students work in car repair shops or dealerships, gaining hands-on experience in diagnostics and repair.

b) Direct Employment Through Vocational Training

- Objective: To prepare students for immediate entry into the workforce.
- Implementation:
  - VET programs are tailored to meet specific labor market needs.
- Example:
  - Tourism and Hospitality Graduates: Students often secure jobs in hotels, restaurants, and travel agencies, especially in Croatia's vibrant tourism sector.

c) Employment Support Programs

- Objective: To assist job seekers in finding suitable employment.
- Implementation:
  - CES provides job matching, training subsidies, and employment incentives.
- Example:
  - Youth Guarantee Program: Aimed at reducing youth unemployment, it offers training, internships, and job placement services for young people under 30.

5. Successful Case Studies

Case Study 1: Digital Mentoring for IT Students

- Overview: IT students in Zagreb participated in a mentorship program with local tech companies.
- Impact: Students developed programming skills, built networks, and several secured jobs post-graduation.

Case Study 2: Career Fair in Split

- Overview: A vocational school in Split organized a career fair featuring 50 companies and 1,000 students.
- Impact: Students gained exposure to various professions and many secured internship opportunities.

Case Study 3: Adult Education for Career Change

- Overview: A nurse transitioned to a career in IT through a lifelong learning course in programming.
- Impact: She secured a job as a software developer within six months of completing the course.

Mentoring programs, career guidance, and opportunities for further education or employment in Croatia form an integrated system designed to support individuals at every stage of their career journey. By fostering collaboration between schools, industries, and government agencies, these initiatives are building a skilled workforce and creating pathways for lifelong success.

3.6 Digitisation of vocational education

The subsection presents descriptions of good practices aimed at digitalising and modernising vocational education. This enables the use of digital platforms, e-learning tools and hybrid learning models to attract the younger generation and facilitate distance learning.

3.5.1. Examples of educational platforms in Poland

Good practice 1: Strengthening the vocational skills of young people in the automated metal industry - adapting vocational education to the requirements of the industry of the future

Rationale for selection of good practice

Izba Przemysłowo-Handlowa Ziemi Radomskiej, as the coordinator of the Radom Metal Cluster and the implemented dual training, considered it appropriate to develop, in international partnership, an

educational platform, on which teaching materials will be placed to eliminate the diagnosed competence gaps of students - participants of the dual training in the occupation 'CNC machine tool operator'. The selection of topics for the developed didactic materials, which have been placed on the platform, resulted from the diagnosis of competence gaps of Polish and Norwegian students participating in the dual education process in the occupation CNC machine tool operator.

Coordinating or implementing body

- Name: Chamber of Commerce and Industry of the Radom Area
- Location: Radom, Poland
- Partners:

  Stavanger Offshore Technical College (Norway)
  Eduexpert, Toruń (Poland).

Context and background

The Chamber of Industry and Commerce of the Radom Area, as a local coordinator of vocational education directions, has since 2016 been supporting the implementation of a curriculum within the framework of dual training in the profession of "CNC machine tool operator" taking place in enterprises associated in the Radom Metal Cluster, founded in 2011, of which the Chamber is the leader, based on an industry agreement of companies involved in metalworking in the broad sense. This project is a pilot introduction of the dual training formula in the region, and given its effectiveness to date (a higher number of entrants and a higher pass rate for vocational qualification exams at the end of education), it seems natural to extend it to other technical courses. At present, its functioning has entered a mature phase and provides a firmly established basis for extending this form of training to new educational faculties, appropriately anchored in the potential staffing needs of companies in the region. A huge advantage of this form of training is the possibility of continuing education in modern company machinery - a perfectly balanced solution that provides the right tools for learners while minimising infrastructure maintenance costs on the part of schools. The opportunity to verify their knowledge in production realities automatically expands the learners' knowledge of further related issues and makes them aware of the functioning of the business environment in the wider context of the value chain.

According to the employers and teachers cooperating in the activities coordinated by the Chamber, dual education is the future of vocational education. It is reasonable to take measures to improve the quality of dual education. To this end, the project proposes to build a tool to diagnose the competence gaps of students - participants in the process of dual education in companies. On the basis of the results obtained, thematic areas for improvement were identified, under which teaching materials were developed and placed on the educational platform.

Aims and objectives

- Main objective: to develop a modern learning platform to support young people in their career choices related to the technical sector.

In addition, among the intermediate objectives are:

  - Analysis and diagnosis of key competency gaps of young learners in VET systems,
  - developing the educational content of non-formal education taking into account the market requirements of the metal industry,
  - development of professional competences and learning mobility of VET teachers and guidance counsellors,
  - promoting dual education and strengthening cooperation between schools and entrepreneurs.
- Assumed results: an increase in the quality of education of students from Polish and Norwegian vocational schools participating in dual training organised in metalworking companies.

Description of the solution

- Comparative analysis of practical training programmes for CNC machine tool operator: a report has been prepared which presents the results of a comparative analysis of two practical training programmes https://skills4ami.eu/wp-content/uploads/2023/03/Zalacznik_1.pdf):
  - The curriculum for the dual-education practical classes for the vocational occupation of machine tool operator 722307, according to which practical classes are conducted in a metalworking enterprise for students of Radom's trade schools,
  - Curriculum for CNC VG3 machine tool operation/service training at a training centre approved by the Norwegian Directorate of Education.

  The aim of the analysis was to identify a common set of learning outcomes to be included in a survey questionnaire identifying the competence gaps of vocational school students completing vocational courses in CNC machine tool operation.
- A set of research survey questionnaires. A study of the effectiveness of applied vocational training methods in technical subjects https://skills4ami.eu/wp-content/uploads/2023/03/Zalacznik_2.pdf), including the development of survey questionnaires for:
  - Management, vocational teachers and career advisors "Study on the effectiveness of applied vocational training methods in technical subjects".
  - entrepreneurs "Study on the effectiveness of applied vocational training methods in technical subjects"
  - student/graduate. Investigating the effectiveness of applied vocational training methods in technical subjects.
- Research report 'Strengthening the vocational skills of young people in the automated metal industry - adapting vocational education to the requirements of the industry of the future'), which is divided into two parts:
  - Study of the learning outcomes of vocational education https://skills4ami.eu/wp-content/uploads/2023/11/Raport_1.pdf)
  - Competency gap analysis of young learners of VET schemes https://skills4ami.eu/wp-content/uploads/2023/11/Raport_2.pdf).

  As a result of the research, topics were identified for which teaching materials should be developed for students to be uploaded to the learning platform.
- Learning platform: has been developed in the form of a website on which:
  - Job descriptions: CNC operator, welder, mechatronics. By reading the descriptions, you will learn, including, what a CNC operator does, in which environment they work and what skills are needed to perform this profession. In addition, you will learn about the occupational risks associated with this profession, as well as about the labour market requirements and opportunities for advancement in this industry. Each job description is accompanied by interactive material about the profession to broaden the perception of practising this occupation, to familiarise you with the level of remuneration, as well as the educational path you need to follow in order to advance. Participants can test their knowledge by completing the accompanying quiz questions at the end of the material.
  - Teaching aids, including videos with a 3D model of a CNC lathe, instruction in the use of control and measuring tools and articles on topics related to the diagnosed competence gaps.

Sources of funding

- National and international projects: the project was funded by the EEA Financial Mechanism 2014-2021 and national funds under the Education Programme".

Benefits

- Benefits for students:
  - Vocational skills development: students will gain access to state-of-the-art teaching materials that will help them acquire the practical skills necessary for the CNC machine tool operator profession.
  - Better preparation for the labour market: by aligning education with the requirements of the industry of the future, students will be better prepared to enter the automated metal industry.
  - Opportunity to learn in real production conditions: dual education enables students to acquire knowledge and skills directly in companies, increasing their competences and attractiveness on the labour market.
- Benefits for teachers and career counsellors:
  - Development of professional competences: teachers and guidance counsellors will have the opportunity to develop their skills and knowledge by participating in training programmes and using modern teaching materials.
  - Cooperation with industry: strengthening cooperation with schools and businesses will allow teachers to better understand the needs of the labour market and adapt their curricula to current requirements.
- Benefits for businesses:
  - Access to skilled labour: companies will gain access to a well-educated workforce that is better equipped to work in the modern metal industry.
  - Cooperation with education: companies will be able to influence curricula, allowing them to better tailor education to their staffing needs.
- Benefits for educational institutions:
  - Improving the quality of education: the introduction of modern teaching methods and teaching materials will contribute to improving the quality of education in vocational schools.
  - Promotion of dual training: the success of the project may contribute to the dissemination of the dual training model in other regions and industries.
- Benefits for the region:
  - Increasing competitiveness: Better preparation of young people for modern industry can contribute to the region's competitiveness in the labour market.
  - Development of the local economy: Cooperation between education and industry can contribute to the development of the local economy by making education more relevant to the needs of the labour market.

Conclusions and recommendations

- Conclusions:
  - Effectiveness of dual education: an example of good practice shows that dual education, combining theoretical learning with vocational practice, is an effective educational model that increases the pass rate of vocational examinations and better prepares students for industry.
  - Importance of international cooperation: the partnership with a Norwegian educational institution has allowed for the exchange of experience and the development of teaching materials that are aligned to international standards.
  - Aligning education with the needs of the labour market: analysing skills gaps and adapting curricula to the requirements of the industry of the future is key to ensuring that graduates have the skills employers are looking for.
  - Benefits for all parties: the project benefits students, teachers, businesses and educational institutions alike, indicating its versatility and potential for further development.

- Recommendations:
- Extension of the dual education model: it is recommended that the dual education model be extended to other technical courses so that even more students can benefit from this form of learning.
- Continued international cooperation: it is worthwhile to continue and develop cooperation with foreign partners in order to learn from their experiences and introduce innovative solutions in vocational education.
- Regular updating of learning materials: learning materials should be regularly updated to keep up with the rapidly changing demands of the labour market and technological advances.
- Promotion of dual education: activities to promote dual education among students, parents and employers should be carried out to raise awareness and interest in this form of education.
- Monitoring and evaluation: regular monitoring and evaluation of the effectiveness of the dual education programmes is recommended in order to identify areas for improvement on an ongoing basis and make the necessary changes.

Contact

- Contact person: Przemysław Radomski, Coordinator of the Radom Metal Cluster; Katarzyna Skoczylas - International Projects Coordinator Chamber of Industry and Commerce of the Radom Area
- Website: https://skills4ami.eu/

Good Practice 2: Integrated Learning Platform

Rationale for selection of good practice

The choice of the Integrated Learning Platform as a good practice is justified by its versatility, accessibility and ability to support different forms of learning and the development of digital competences. The platform is a valuable tool in a modern education system, contributing to increasing the quality of education and making education more accessible to all.

The Integrated Learning Platform is an excellent example of good practice in education for several key reasons:

- It offers free educational content available to anyone, from anywhere in the world, at any time. This enables students and teachers to use educational resources regardless of their location or financial situation.
- The platform supports both traditional desktop teaching and remote learning. This makes it a flexible tool that can be adapted to different learning needs and situations, such as learning at home or at school.
- It offers a wide range of educational materials, including e-books, programming courses, interactive materials and career guidance tools. This helps to add variety to the learning process and increase student engagement.
- The platform promotes the development of digital competences among both students and teachers. Through interactive tools and educational resources, users can develop their skills in using modern technologies
- The platform offers teaching materials, lesson plans and guides to support teachers in preparing and delivering lessons. This makes it easier for teachers to adapt to new teaching methods and improves the quality of education.
- The platform is a friendly, professional and secure learning environment, which is key to ensuring quality education and protecting user data.

Coordinating or implementing body

- Name: Ministry of National Education
- Location: Warsaw, Poland
- Partners:

  Institutions creating content on the platform.

Context and background

The Integrated Education Platform was launched in February 2019 as a response to the growing need to digitise education in Poland. Its creation was the result of several key factors:

- COVID-19 pandemic - The sudden closure of schools in 2020 due to the COVID-19 pandemic has highlighted the need for a rapid transition to remote learning. In response to these challenges, the platform has become a key tool to support teachers and students to continue the educational process online.
- Increased demand for digital materials - before the pandemic, there was already a need to increase the availability of digital educational materials. The platform was created to provide free access to e-books, courses and other educational resources that comply with the core curriculum for general and vocational education.
- Support for teachers and students - the platform is designed to support teachers in their teaching and students in their learning. It offers a wide range of tools, such as the ability to create and share your own materials, organise video conferences and communicate in real time.
- Government initiatives - the platform project was supported by the Ministry of National Education and funded under the Operational Programme Knowledge Education Development 2014-2020. The aim was to improve the quality of education and equalise educational opportunities for students by digitising schools.
- Development of digital competences - one of the main goals of the platform is to develop digital competences among both students and teachers. The platform offers interactive tools and resources that support the learning and development of digital skills.
- Adaptation to different educational needs - the platform is a flexible tool that supports both traditional classroom teaching and remote learning. This allows it to be used in a variety of learning situations, adapting to the changing needs of users.

The Integrated Learning Platform therefore responds to today's educational challenges by offering a modern, friendly and secure environment for learning and teaching.

Aims and objectives

Main objective: the objective of creating an Integrated Education Platform is to provide universal access to high quality educational resources that support the teaching and learning process in schools. The platform aims to:

- digitisation of education, by enabling students and teachers to use modern educational tools and materials that are available online;
- equalise educational opportunities by providing equal access to educational resources for all students, regardless of their place of residence or financial situation;
- support for teachers by providing them with tools and materials that facilitate the preparation and delivery of lessons, both on site and remotely;
- the development of digital competences by promoting and developing digital skills among students and teachers, which is crucial in the modern world.

Assumed outcomes:

- Increased accessibility of educational materials, as students and teachers have access to a wide range of e-books, courses, interactive materials and other educational resources.
- Improving the quality of education - with modern educational tools and materials, the learning process becomes more effective and engaging.
- Support for remote teaching - the platform allows for remote teaching, which is particularly important in emergency situations such as the COVID-19 pandemic.
- Digital skills development - students and teachers develop their digital competences, which prepares them for the digital world.
- Collaboration and communication - the platform supports communication and collaboration between teachers, students and parents, which contributes to better management of the educational process.

Description of the solution

- Supporting educational material has been posted on the platform:
  - General education
  - Vocational training
  - Inclusive education
  - Digital school
- Resources to support vocational education include :
  - E-materials for vocational training

    The Integrated Education Platform offers a wide range of e-materials dedicated to vocational education. These are interactive educational resources that cover different qualifications and professions. These materials are in line with the current core curriculum and include, among others, educational videos, virtual laboratories, lesson plans and educational games. They enable students to learn practical skills in a realistic digital environment.
  - Career guidance

    The platform also includes resources to support the career guidance process. This includes multimedia vocational information such as videos, brochures, 3D models of workplaces and virtual walk-throughs of workplaces. These materials help students to make an informed career choice by presenting different occupations and working conditions. In addition, the platform offers tools for self-use by students and their parents, supporting the decision-making process about further education and career choice
  - Professional foreign language

    The e-materials for vocational language on the platform are tailored to the specific needs of different industries. They include animations, cartoons, photos, teaching games and videos of typical work situations. These materials are available in several languages, including English, German, French, Spanish and Russian, enabling students to develop their language skills in a professional context.
  - Curriculum bases for vocational education

    The platform also provides the core curriculum for vocational education, which defines the objectives and learning outcomes for individual professions. The platform offers guides for teachers, which provide guidance on the use of e-materials in teaching work, as well as interactive test materials that help to assess students' mastery of knowledge and skills. This enables teachers to better adapt their teaching methods to the individual needs of their students.

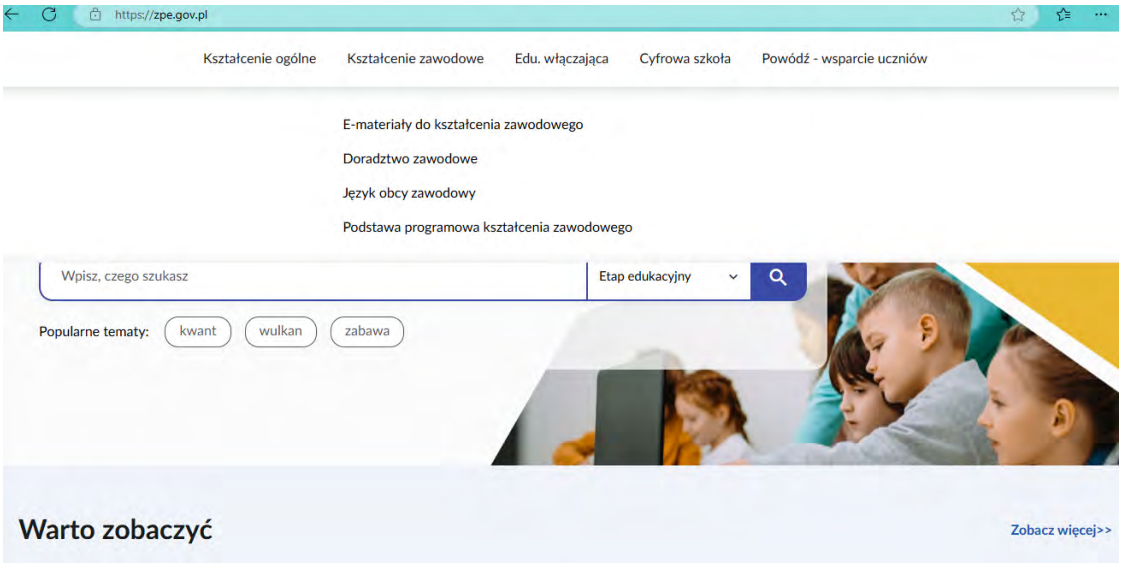


Fig. 6. Vocational education resources posted on the Integrated Education Platform

Source: Integrated Learning Platform https://zpe.gov.pl/ (accessed November 2024)

Sources of funding

- European Social Fund (ESF): the platform project was supported by the Operational Programme Knowledge Education Development (OP WER) 2014-20201. ESF funding enabled the development and modernisation of the platform, including the creation of e-materials for general and vocational education.
- State budget: additional funding came from the state budget, allowing the purchase of equipment for teachers to enable distance learning.
- Human Capital Operational Programme (HC OP): the earlier stages of the platform's development were also supported by funds from the HC OP 2007-2013.
- European Social Development Fund 2021-2027: the continuation of funding and the development of UPE are planned under the new programming period of European funds

Benefits

- Students:
  - Students have access to e-books, interactive learning materials, videos and virtual labs to facilitate learning and increase engagement.
  - The platform allows learning to continue remotely, which is particularly important in emergency situations such as the COVID-19 pandemic.
  - Using the platform helps students develop digital skills that are essential in the modern world.
- Teachers:
  - Access to teaching tools - teachers can use ready-made lesson plans, e-materials and tools to create their own learning resources, making it easier to prepare and deliver lessons.
  - Support for remote teaching - the platform offers tools for videoconferencing and communication with students, which supports effective distance learning.
  - Professional development - teachers have the opportunity to participate in online training and courses, which supports their professional development and improves the quality of teaching.
- Parents:
  - Support in the educational process - parents can use ZPE resources to support their children's learning, which is particularly useful for distance learning.

- Access to information on pupil progress - the platform allows parents to track their children's educational progress, helping to better understand their needs and support their learning.

- Education system:
  - Improving the quality of education: With its state-of-the-art educational tools and resources, ZPE contributes to raising the quality of education in Poland.
  - Equalising educational opportunities: The platform provides equal access to educational resources for all students, regardless of where they live or their financial situation.
  - Support for educational reforms: ZPE supports the implementation of education policy goals such as the digitisation of schools and the development of digital competences among students and teachers.

The Integrated Learning Platform is therefore a key tool that benefits all participants in the educational process, supporting modern, inclusive and effective education.

Conclusions and recommendations

- Conclusions:
  - The introduction of the Platform has significantly increased the availability of high-quality educational resources for students and teachers across the country, regardless of their location or financial situation.
  - The platform proved to be a key tool during the COVID-19 pandemic, allowing the educational process to continue remotely.
  - The use of the Platform's resources has contributed to the development of digital competences among both students and teachers, which is essential in the modern world.
  - With its modern tools and interactive educational materials, the Platform has contributed to the quality of education, making the learning process more effective and engaging.
  - The platform provides teachers with teaching tools and materials that facilitate the preparation and delivery of lessons, both onsite and remotely.
- Recommendations:
  - Regularly updating and expanding the educational resources available on the Platform to be in line with the latest educational and technological standards.
  - Organise regular training and workshops for teachers so that they can make full use of the possibilities offered by the Platform and develop their digital competences.
  - Intensify activities to promote the Platform to students, teachers and parents to increase awareness and use of the Platform in everyday education.
  - Pursue the integration of the Platform with other educational systems and platforms to enable a more coherent and comprehensive approach to the digitisation of education.
  - Regular monitoring and evaluation of the Platform's effectiveness to identify areas for improvement and make necessary changes.
  - Provide ongoing technical support to users of the platform so that they can use the available resources and tools without hindrance.

In summary, the introduction of the Integrated Education Platform has brought many benefits to the Polish education system, but further development and improvement of the platform are key to maintaining its effectiveness and attractiveness.

Contact

- Contact person: none
- Website: https://zpe.gov.pl/

3.5.2. Use of digital platforms, e-learning tools and hybrid learning models to attract the younger generation and facilitate distance learning in Croatia

Croatia has made significant strides in integrating digital platforms, e-learning tools, and hybrid learning models to modernize education, attract younger generations, and address the need for flexible learning solutions, including distance learning. These innovations have been particularly impactful in vocational education and training (VET), where practical skill development is often combined with theoretical knowledge.

1. Digital Platforms in Croatian Education

a) Role of Digital Platforms

Digital platforms are central to modernizing education in Croatia, offering interactive learning environments, resources, and communication tools. They enhance engagement and cater to the digital preferences of the younger generation.

b) Examples of Digital Platforms:

1. Loomen (Moodle-based Platform):
   - Used by Croatian schools and vocational institutions for creating and managing online courses.
   - Features include quizzes, interactive lessons, and collaborative projects.
   - Example: Vocational schools use Loomen to deliver courses in IT, engineering, and hospitality, with modules on topics such as programming, technical drawing, or customer service.
2. E-sveučilište (e-University):
   - A digital platform for higher education institutions offering blended learning options.
   - Example: Polytechnic institutions use e-Sveučilište for courses in mechatronics and business administration.
3. Croatian Academic and Research Network (CARNet):
   - Provides e-learning solutions, IT infrastructure, and digital content for schools.
   - Example: The e-School Project by CARNet equips schools with tools like Microsoft Teams and online educational resources.

2. E-Learning Tools

a) Types of E-Learning Tools Used

1. Interactive Simulations and Virtual Labs:
   - Tools like Phet Interactive Simulations for physics or chemistry allow students to perform experiments virtually.
   - Example: Healthcare students use virtual labs to practice procedures like patient monitoring.
2. Digital Content Libraries:
   - Access to extensive libraries of educational videos, tutorials, and digital textbooks.
   - Example: Students in agricultural VET programs access instructional videos on modern farming techniques.
3. Gamification Tools:
   - Platforms like Kahoot! and Quizizz are used to make learning engaging through quizzes and games.
   - Example: Used in hospitality courses to test knowledge of culinary techniques and customer service.
4. Learning Apps:
   - Duolingo for language learning and coding apps like Scratch and Code.org are integrated into curricula.
   - Example: Vocational students in tourism learn foreign languages using Duolingo.

3. Hybrid Learning Models

a) Definition and Purpose

Hybrid learning models combine in-person and online instruction, offering flexibility while retaining the benefits of face-to-face interaction. These models are especially valuable for students in remote areas or those balancing work and study.

b) Implementation in Croatia:

1. Blended Learning in VET Schools:
   - Students attend hands-on practical training in labs or workplaces while theoretical lessons are delivered online.
   - Example: Automotive VET programs use hybrid models where diagnostics and repair lessons are taught online, and hands-on training occurs in workshops.
2. Hybrid Apprenticeships:
   - Apprentices split their time between online learning modules and on-site training in partner companies.
   - Example: IT students in Split participate in hybrid apprenticeships where coding theory is taught online, while real-world projects are completed in tech companies.
3. Flexibility During COVID-19:
   - The pandemic accelerated the adoption of hybrid models, enabling continuity in education.
   - Example: Hospitality schools combined virtual cooking demonstrations with on-campus kitchen practice sessions.

4. Attracting Younger Generations

a) Why Digital Tools Appeal to Youth

- Interactive, visually engaging content aligns with the digital habits of younger learners.
- Gamified and adaptive learning tools make studying more enjoyable and personalized.

b) Examples of Youth-Oriented Strategies:

1. Gamification of Vocational Training:
   - Example: Vocational schools in Zagreb gamify construction safety training with virtual reality (VR) scenarios, allowing students to experience real-life challenges in a safe environment.
2. Social Media Integration:
   - Schools use platforms like Instagram and YouTube for educational campaigns and tutorials.
   - Example: Career guidance offices post success stories of VET graduates on TikTok to inspire prospective students.
3. Coding and Robotics Clubs:
   - Example: Schools introduce robotics clubs where students design and program robots, combining fun and skill-building.

5. Facilitating Distance Learning

a) Overcoming Geographical Barriers

Distance learning platforms provide access to quality education for students in remote areas.

b) Examples of Distance Learning Initiatives:

1. Online High Schools:
   - Example: Vocational high schools offer fully online programs in IT and business administration, catering to students unable to attend in person.
2. Virtual Internship Platforms:

- Example: Tourism students in Dubrovnik complete virtual internships through online hospitality management systems, gaining experience in hotel operations remotely.

3. Adult Education and Reskilling:
   - Example: Adults pursuing a career change can enroll in online VET programs in fields like digital marketing or renewable energy.

6. Challenges and Solutions

Challenges:

- Digital Divide: Limited access to devices or high-speed internet in rural areas.
- Teacher Training: Need for professional development to effectively use digital tools.
- Engagement Issues: Maintaining student interest in online formats.

Solutions:

- Government subsidies for devices and internet access.
- Training programs for educators to improve digital literacy.
- Incorporating gamification and interactive content to sustain engagement.

7. Case Studies and Success Stories

Case Study 1: e-School Project

- Description: Managed by CARNet, this project equips schools with digital tools, e-learning platforms, and training.
- Impact: Enhanced digital literacy among students and teachers, with significant uptake of hybrid learning models in vocational schools.

Case Study 2: Virtual Reality in Tourism Training

- Description: Tourism schools use VR headsets to simulate hotel management scenarios.
- Impact: Students gain practical experience in managing virtual hotels, preparing them for real-world challenges.

Case Study 3: Online IT Courses for Youth

- Description: A tech-focused vocational school in Rijeka offers online coding bootcamps for high school students.
- Impact: Participants develop programming skills, with many securing internships in tech companies.

The integration of digital platforms, e-learning tools, and hybrid learning models is transforming education in Croatia, making it more attractive and accessible for younger generations. By leveraging technology, Croatia is addressing the challenges of modern education, ensuring students acquire the skills needed for a dynamic and evolving job market. These advancements also position the country as a leader in innovative vocational education.

4. Vocational training in Poland and Croatia: problems and solutions

The chapter presents the challenges facing vocational education systems in Poland and Croatia. By giving previous examples of good practice, solutions are proposed that can contribute to improving the situation .

4.1 Challenges of the Polish vocational education system

The Polish vocational education system (VET) faces a number of challenges that affect its effectiveness and its ability to prepare students for today's labour market. We have identified some of these below:

1) Insufficient level of adaptation to the labour market:
   - there is a lack of mechanisms for cyclical updating of core curricula for vocational education in industry education, as a result of which the core curricula and the curricula based on them often fail to keep up with the dynamically changing requirements of the labour market, which may lead to a mismatch between the competences of graduates and the needs of employers ;
   - shortage of apprenticeships: Many vocational schools are struggling to organise apprenticeships, which are crucial for students to gain practical skills .
2) Lack of modern equipment - many vocational schools struggle with outdated equipment and a lack of modern technology, making it difficult to provide practical classes at an appropriate level .
3) Shortage of qualified staff:
   - there is a shortage of teachers and trainers of practical vocational training in Poland with appropriate qualifications and professional experience, which affects the quality of education,
   - The low interest in working as an apprenticeship teacher is certainly influenced by the low wages in the vocational education sector discouraging potential candidates to work in this area,
4) Digitisation and new technologies:
   - According to many experts, the introduction of modern technologies and digital tools into the learning process is still insufficient, limiting the opportunities for students to develop their digital competences .
   - The COVID-19 pandemic highlighted deficiencies in remote learning tools and methods, which affected the continuity and quality of education.
5) Cooperation with employers:
   - Despite the good practices shown, Poland is still far from the EU average in terms of participation of vocational school graduates in classes in enterprises. A significant obstacle is the lack of effective mechanisms of cooperation between vocational schools and enterprises, which limits

the possibilities to organise internships and apprenticeships and to adapt the curricula to the needs of the labour market.

6) Demography and migration:
   - Demographic changes, such as an ageing population, affect the availability of students and teachers in the vocational education system,
   - The high level of migration of young people abroad in search of better educational and professional opportunities is leading to a reduction in the number of students in vocational schools.

7) Funding
   - Despite a steady increase in expenditure on vocational education, there is still a lack of funds for the cyclical modernisation of infrastructure, the purchase of modern equipment and the upgrading of teaching staff qualifications .

8) Promotion of vocational education:
   - Vocational education is often perceived as a less attractive educational pathway compared to general and academic education, which affects the number of students choosing this form of education.

Addressing these challenges requires coordinated action at national and local levels, including curriculum reform, investment in infrastructure, developing partnerships with industry and promoting vocational education as a valuable educational pathway.

4.2 Challenges of the Croatian vocational education system

5.
The European context of vocational training

Comparison with the European context

– Compatibility with European Union strategies for the development of vocational education (such as ET2020 and the Fundamentals of Lifelong Learning).
– Participation of both countries in European projects and initiatives.

5.1. The Polish vocational training system and the European context

The Polish vocational education system is an integral part of the European vocational education system, adapted to the standards and requirements of the European Union. Here are some key aspects:

1. The structure of the vocational training system in Poland offers:
   - First-degree trade schools - a three-year school which prepares pupils to perform a profession specified in the occupational classification of trade education. Graduates can continue their education in second-degree trade schools or technical schools.
   - Technical school - a four-year school which combines general and vocational education, ending with a matura exam and a vocational exam. After passing the baccalaureate, the graduate can continue his/her studies at a higher education institution.
   - Post-secondary schools - for secondary school graduates, offer specialised vocational training.
   - Vocational qualification courses that enable adults to acquire vocational qualifications in specific professions.
2. European context:
   - Harmonisation of qualifications - Poland, like other EU countries, uses the European Qualifications Framework (EQF), which enables the comparison of professional qualifications between member states .
   - Learning mobility - programmes such as Erasmus+ support the mobility of students and teachers, enabling them to gain work experience abroad.
   - International cooperation - Poland participates in numerous European projects and initiatives aimed at developing and modernising vocational education.
3. The challenges and prospects of the Polish vocational training system in our view are mainly related to :
   - Adaptation to the labour market, which is the key challenge of adapting the vocational education core and curricula to the dynamically changing needs of the labour market, especially in the context of the digital and ecological transformation .

- Investment in infrastructure - further cyclical investment in modern laboratories and workshops is needed to ensure high quality education. This can support the development of cooperation with companies as part of the dual education being developed. Students in practical classes would then benefit from machinery and equipment in contemporary use in companies where they can take up employment in the future.
- Improving the qualifications of teachers, whereby regular training and in-service courses for teachers organised on the premises are essential so that they can effectively pass on modern knowledge and skills.

The Polish vocational training system, thanks to its integration with European standards, is becoming increasingly modern and adapted to the needs of the modern economy.

5.2. The Croatian vocational training system and the European context

Croatia's vocational training system (VET) is a key component of its education sector, designed to prepare students for employment, further education, or lifelong learning. It operates within the broader European framework, aligning its strategies, policies, and qualifications with EU standards to foster cross-border mobility and competitiveness.

1. Structure of the Croatian Vocational Training System

a) Levels of Vocational Education

1. Secondary Vocational Education:
   - Typically lasts 3-4 years.
   - Enrolls approximately 67% of secondary school students, reflecting the popularity of vocational pathways.
   - Programs include:
     - 3-Year Programs: Focus on trades like mechanics, electricians, and craftsmen.
     - 4-Year Programs: Prepare students for technical professions such as engineering, IT, and healthcare.
   - Graduates of 4-year programs can take the State Matura Exam, allowing access to higher education.
2. Post-Secondary VET:
   - Short-term programs for advanced skill development, often lasting 1-2 years.
   - Offered by polytechnics and adult education institutions.
   - Examples: Specializations in IT, tourism, and advanced manufacturing.
3. Adult Education:
   - Provides retraining, upskilling, and lifelong learning opportunities.
   - Includes programs for unemployed individuals and those seeking career changes.

b) Dual Education Model

- Introduced as part of Croatia's VET modernization efforts.
- Combines school-based education with work-based learning (apprenticeships) in partnership with businesses.
- Examples: Dual programs in tourism and hospitality, where students split time between classrooms and hotels/restaurants.

2. Governance and Stakeholders

a) National-Level Institutions

1. Ministry of Science and Education:
   - Oversees the VET system and aligns it with national development goals.
2. Agency for Vocational Education and Training and Adult Education (ASOO):
   - Develops curricula, coordinates with industry, and ensures quality assurance.

b) Local and Regional Authorities

- Responsible for funding and infrastructure development for vocational schools.

c) Industry and Employers

- Play a critical role in shaping curricula and providing practical training opportunities.

3. Key Features of the Croatian VET System

a) Competence-Based Curricula

- Focus on practical skills and competencies relevant to the labor market.
- Modular programs allow flexibility and personalized learning paths.

b) Lifelong Learning Focus

- Encourages continuous skill development, particularly in response to technological and economic changes.

c) Digitalization and Modernization

- Integration of digital tools and e-learning platforms, as seen in the e-School Project.
- Use of simulation tools and virtual labs for technical training.

d) Qualification Framework

- Aligned with the European Qualifications Framework (EQF), ensuring transparency and comparability of qualifications across Europe.

4. European Context

Croatia's vocational training system operates within the broader European Union framework, adhering to shared goals and policies to enhance vocational education and training across member states.

a) Alignment with European Policies

1. Copenhagen Process:
   - Croatia participates in this EU initiative to improve the quality, attractiveness, and mobility of VET.
2. European Education Area (EEA):
   - Croatia aligns its VET policies with EEA objectives to foster inclusivity, innovation, and labor market relevance.

b) European Tools and Initiatives

1. European Qualifications Framework (EQF):
   - Croatia's National Qualifications Framework (CROQF) is mapped to the EQF, enabling recognition of Croatian qualifications across Europe.
2. Europass:
   - A standardized CV and skill documentation system that helps Croatian VET graduates showcase their qualifications internationally.

3. European Credit System for Vocational Education and Training (ECVET):
   – Facilitates credit transfer and accumulation for learners moving between European countries.
4. Erasmus+ Program:
   – Provides opportunities for Croatian VET students and teachers to participate in exchange programs and internships in other EU countries.

c) Participation in European Skills Competitions

- Croatia actively participates in WorldSkills Europe (EuroSkills), where VET students compete in technical and vocational skill categories.

5. Challenges in Croatia's VET System

a) Labor Market Mismatch

- While Croatia's VET system produces skilled graduates, some sectors still face skills shortages (e.g., IT, healthcare).

b) Regional Disparities

- Access to quality vocational education varies across regions, with rural areas often lagging behind urban centers.

c) Limited Employer Engagement

- Not all industries are equally involved in providing apprenticeships or shaping curricula.

d) Need for Modernization

- Continuous investment is required to upgrade infrastructure, integrate digital tools, and train educators.

6. Strengths and Opportunities

a) EU Support and Funding

- Croatia benefits from EU structural and investment funds for modernizing its VET system.
- Projects like Competence Centres are funded to create hubs of excellence in fields such as tourism, engineering, and renewable energy.

b) Youth and Adult Skill Development

- Initiatives like the Youth Guarantee Program focus on reducing youth unemployment through training and internships.
- Adult education programs support reskilling and upskilling to address emerging labor market needs.

c) Strong Tourism and Hospitality Sector

- Croatia's vibrant tourism industry provides extensive opportunities for VET students in fields like hospitality, event management, and culinary arts.

7. Croatia as a Part of the European VET Landscape

Croatia's VET system contributes to the EU's vision of a competitive, innovative, and inclusive Europe by:

- Producing a skilled workforce aligned with European labor market needs.
- Participating in cross-border collaborations and mobility programs.
- Supporting lifelong learning and digital transformation.

The Croatian vocational training system is a dynamic and integral part of the country's education sector, aligned with European standards to ensure quality and mobility. While challenges like labor market mismatches and regional disparities persist, ongoing reforms, EU support, and strong industry collaborations position Croatia's VET system as a key driver of economic growth and social development within the European context.

6. Recommendations for the future

The chapter presents recommendations for the future based on examples of good practice. They concern the improvement of the vocational education system in both countries. They emphasise the importance of international cooperation as well as further harmonisation of educational standards with European guidelines.

Recommendations - to be completed when complete

It is important to bear in mind that the implementation of good practices or recommendations in other countries, or even by other institutions from Poland or Croatia, may encounter many challenges that may hinder the achievement of the intended goals. Here are some of the most common challenges:

1. Resistance to change - people are often attached to their existing ways of working and may be reluctant to introduce new practices. This resistance may stem from fear of the unknown, lack of understanding of the benefits of change or fear of losing control .
2. Lack of resources - implementing new practices often requires additional resources such as time, money, equipment or staff. Lack of these resources can significantly hamper the implementation of new solutions.
3. Insufficient management support - the success of good practice implementation depends largely on management commitment and support. Without strong leadership and a clear vision, employees may not be motivated to implement change.
4. Lack of appropriate skills and knowledge - staff may not have the appropriate skills or knowledge needed to implement new practices. Training and appropriate educational materials may need to be provided.
5. Miscommunication - effective communication is crucial to the success of any change. Lack of clear and consistent communication can lead to misunderstandings, rumours and resistance to change .
6. An organisational culture that is not conducive to innovation and change can be a serious obstacle to the implementation of good practice. Values, norms and beliefs within an organisation can affect employees' willingness to adopt new ways of working .
7. Lack of a systematic approach - the implementation of good practice requires a systematic approach that includes planning, monitoring and evaluation of progress. The lack of such an approach can lead to haphazard implementation of change and inconsistency in action .
8. Insufficient employee involvement - employees need to be involved in the change implementation process for it to be effective. Lack of commitment may be due to lack of motivation, insufficient support or lack of understanding of the objectives of the changes.

Overcoming these challenges requires careful planning, involvement of all stakeholders and flexibility in the approach to implementing change. Adequate resources and support at every stage of the process are also crucial.

7. Bibliography

Polish sources:

1) Białczak Ł., Radomski P., Żurek M.: Analysis of organisational aspects of the functioning of the dual education model realised within the Radom Metal Cluster - results of a survey (part 1). Edukacja Ustawiczna Dorosłych, No. 4, 2021, DOI: 10.34866/59t1-5a19 https://edukacjaustawicznadoroslych.eu/index.php/pl/eud/2021/4/12).
2) Białczak Ł., Radomski P., Żurek M.: Evaluation of the effectiveness of dual education of students coordinated by the Radomski Klaster Metalowy - results of the survey No. 1, 2022, DOI: 10.34866/4f41-a110, https://edukacjaustawicznadoroslych.eu/index.php/pl/eud/2022/1/13.
3) CKE (Central Examination Commission). Information on professional examinations: www.cke.gov.pl (accessed November 2024).
4) Decision of the European Parliament and of the Council 2009/C 155/02
5) Drogosz-Zabłocka Elżbieta, Stasiowski Jędrzej, Kształcenie zawodowe w Polsce - przemiany, organizacja, efekty DOI: 10.47050/65591814.66-101: https://www.frse.org.pl/storage/brepo/panel_repo_files/2021/05/28/0uboiv/wyksztalcenie-zawodowe-srodek-2020-drogosz.pdf (accessed May 2024).
6) Hejwosz-Gromkowska D., (2009), Wyzwania stojące przed szkolnictwem wyższym w Polsce. University or Higher Vocational School? (accessed May 2024).
7) Educational Research Institute (2012). National Qualifications Framework: A new approach to vocational education. IBE Report, Warsaw.
8) Jakubowski, M., & Wisniewski, J. (2016). Vocational education reform in Poland: Challenges and opportunities. Institute of Educational Research, Warsaw.
9) European Commission - European Skills Agenda for Sustainable Competitiveness, Social Justice and Resilience (2020): h
10) Constitution of the Republic of Poland of 2 April 1997 (Journal of Laws 1997, No. 78, item 483)
11) Kowalska M.: Dry construction systems competition: the search for the best is over. MyProfessionals: https://myzawodowcy.pl/systemy-suchej-zabudowy-radom-2021-poszukiwanie-najlepszych-juz-zakonczone/ (accessed May 2024).
12) Board of Education in Poznań: (accessed July 2024).
13) Board of Education in Wrocław: (accessed July 2024).
14) Kwiecinski, Z. (2014). The educational system in Poland. PWN, Warsaw.
15) Malinowski, M. (2018). Development of vocational education in Poland - historical and contemporary perspective. University of Łódź Publishing House.
16) Marcinek, R. (2001). History of education in Poland. PWN, Warsaw.

17) The Mazovian metal sector. Potential and trends. 4CF Sp. z o.o., Warsaw, 2018.
18) NUTS 2 and NUTS 3. Metropolitan, regional and sub-regional level. Report on the implementation of qualitative research. Centre for Innovation Management and Technology Transfer Warsaw University of Technology, Warsaw, July 2020.
19) Announcement of the Marshal of the Sejm of the Republic of Poland of 10 April 2024 on the announcement of the uniform text of the Act on the educational system (Journal of Laws 2024, item 750)
20) Announcement by the Minister of Education of 27 February 2024 on the publication of the consolidated text of the Regulation of the Minister of National Education on the detailed conditions and manner of conducting the vocational examination and the examination confirming qualifications in the profession (consolidated text Dz.U. 2024, item 552).
21) Announcement by the Minister of Education of 5 January 2024 on the publication of the consolidated text of the Regulation of the Minister of National Education on the classification of vocational education professions (Journal of Laws 2024, item 110).
22) Oświata i wychowanie w roku szkolnym 2022/2023. Główny Urząd Statystyczny, Urząd Statystyczny w Gdańsku, Warszawa - Gdańsk 2023.
23) Pilch, T., Bauman, T. (2001). Zarys pedagogiki pracy. PWN, Warsaw.
24) Climate Change Adaptation Plan for the City of Radom until 2030. Institute of Environmental Protection - PIB, Institute of Meteorology and Water Management - PIB, Institute for Ecology of Industrial Areas, Arcadis Polska Sp. z o.o., 2018.
25) Poland. Cedefop ReferNet thematic perspectives series. (accessed May 2024).
26) Ponikowska, M. (2020). Vocational Education and Training (VET) for the future labour market:
27) Education Portal Krakow: (accessed July 2024).
28) Regulation of the Minister of Education and Science of 14 September 2023 on specific qualifications required of teachers (Journal of Laws, item 2102)
29) Regulation of the Minister of Education and Science of 6 October 2023 on continuing education in non-school forms (Journal of Laws 2023, item 2175).
30) Regulation of the Minister of National Education of 12 February 2019 on professional counselling (Journal of Laws 2019, item 325)
31) on core curricula for education in vocational trades and additional professional skills for selected vocational trades in vocational education (Journal of Laws 2019, item 991, as amended).
32) on the assessment, classification and promotion of pupils and students in public schools (consolidated text Dz.U. 2023 item 2572, as amended).
33) Regulation of the Minister of National Education of 22 February 2019 on practical vocational training (Journal of Laws 2019, item 391 as amended).
34) Regulation of the Minister of National Education of 25 August 2017 on the manner in which public kindergartens, schools and institutions keep records of the course of teaching, educational and caring activities and the types of such records (Journal of Laws of 2024, item 50)
35) Regulation of the Minister of National Education of 25 August 2017 on pedagogical supervision (Journal of Laws 2024, item 15).
36) Regulation of the Minister of National Education of 3 April 2019 on educational framework plans for public schools (Dz. U. of 2024, item 80)
37) on the core curriculum of general education for general secondary school, technical secondary school and upper secondary school (Journal of Laws 2018, item 467, as amended).
38) on the principles of organising and providing psychological and pedagogical assistance in public kindergartens, schools and institutions (consolidated text Dz.U. 2023, item 1798).

39) Regulation of the Minister of Education of 20 May 2024 on framework teaching plans for public schools (Journal of Laws 2024, item 781).
40) Regulation of 15 February 2019 on the classification of vocational education professions (consolidated text Dz.U. 2024, item 611).
41) Radom Brand Strategy (2009). DEMO E' ective Launching, Kraków.
42) Website of the Chamber of Industry and Commerce of the Radom Area: (accessed 12.06.2023).
43) Radom Metal Cluster website: //klastermetalowy.radom.pl/aktualnosci/, (accessed 12.06.2023).
44) Green Line Vortal website: (2015 data), (accessed 12.06.2023).
45) Ministry of Education websites: www.gov.pl/web/edukacja (accessed August 2024).
46) Szymański, M. (2013). Vocational education in Poland towards the challenges of the 21st century. Education and Work, 4(15), pp. 22-36.
47) Tokarska, B. (2010). Polish vocational school: A comparative analysis of education systems in Europe. PWN, Warsaw.
48) Act of 14 December 2016. - Education Law (consolidated text Dz.U. 2024 item 737)
49) Act of 22 November 2018 amending the Act - Education Law and other acts (Journal of Laws 2018, item 2245, as amended)
50) Act of 26 June 1974. - Labour Code (consolidated text Dz.U. 2023 item 1465 as amended)
51) Act of 26 January 1982. - Teachers' Charter (Journal of Laws of 2024, item 986)
52) Act of 7 September 1991 on the educational system (consolidated text Dz.U. 2024, item 750)
53) Wojdyła P. (2023), The needs of vocational education in the context of the activities of Sector Councils. (accessed May 2024).
54) Integrated Education Platform: (accessed July 2024).

Croatian sources:

Annex:

https://bit.ly/VETractive

Croatian sources:

1) Vocational Education Act: Website of Narodne novine for accessing laws and regulations: Narodne novine
2) Regulation on the Organization and Implementation of Classes in Vocational Schools: Direct search on Narodne novine: Narodne novine - Regulations
3) Agency for Vocational Education and Training and Adult Education (ASOO): Official website: ASOO
4) Croatian Bureau of Statistics (DZS): Education reports and statistics: DZS
5) Strategy for the Development of Vocational Education (2008–2013): Document available on the Ministry of Science and Education website: MZO
6) European Green Deal: EU Guidelines: European Green Deal
7) Erasmus+ Program: Program information: Erasmus+ Croatia
8) Agency for Vocational Education and Training and Adult Education (ASOO): ASOO
9) Croatian Employment Service (HZZ): HZZ
10) WorldSkills Croatia: Competition information: WorldSkills Croatia
11) Regional Centers of Competence: Details and information about the centers: Regional Centers of Competence
12) Register of Business Entities for Practical Training: Overview on the ASOO website: ASOO - Register of Business Entities

Annex:

https://bit.ly/VETractive

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