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TEACHERS AND TRAINERS IN A CHANGING WORLD

Building up competences for inclusive, green and digitalised vocational education and training

SLOVAKIA

CEDEFOP REFERNET THEMATIC PERSPECTIVES

Teachers and trainers in a changing world

Slovakia

Building up competences for inclusive, green and digitalised vocational education and training (VET)

Please cite this publication as:
Vantuch, J.; Jelínková, D. (2022). *Teachers and trainers in a changing world – Slovakia: Building up competences for inclusive, green and digitalised vocational education and training (VET).* Cedefop ReferNet thematic perspectives series.
http://libserver.cedefop.europa.eu/vetelib/2022/teachers_and_trainers_in_a_changing_world_Slovakia_Cedefop_ReferNet.pdf

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The thematic perspectives series complements the general information on vocational education and training (VET) systems provided in 'VET in Europe database'. The themes presented in the series feature high on the European agenda.

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This thematic perspective was prepared based on data/information from 2021.
The opinions expressed here do not necessarily reflect those of Cedefop and the interviewed experts who kindly advised authors of this report. Any possible inaccuracies or misinterpretations are ours.
Thematic perspectives are co-financed by the European Union and ReferNet national partners.

ReferNet is a network of institutions across Europe representing the 27 Member States, plus Iceland and Norway. The network provides Cedefop with information and analysis on national vocational education and training (VET). ReferNet also disseminates information on European VET and Cedefop's work to stakeholders in the EU Member States, Iceland and Norway.

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Acknowledgements

The authors wish to thank: Daniel Adamko, Secondary Industrial School for Electrical Engineering, Bratislava, Ivan Bednár, Železnice Slovenskej republiky, a.s. (Railways of the Slovak Republic), Marek Benedik, ZF Slovakia, a.s., Marcel Blaščák, dm drogerie markt, s.r.o., Felix Dömény, Secondary Industrial School for Mechanical Engineering, Bratislava, Mária Hrušovská, State Institute of Vocational Education, Alexandra Junášková, Erasmus+ National Agency (Slovak Academic Association for International Cooperation), Ladislav Kováč, Slovak Chamber of Commerce and Industry, Milan Kuzma, Employer Council for Dual VET, Juraj Ždiňák, Ministry of Education, Science, Research and Sport of the SR, Viera Žatkovičová, State Institute of Vocational Education.

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CHAPTER 1. Introduction

The secondary vocational education and training (VET) stream in Slovakia is among the strongest in the EU ([1]). Containing 444 programmes, the VET stream is strong and complex, but currently, higher attention is paid by policymakers to general education. It seems to be caused by very low results of lower secondary pupils in the PISA testing compared to the similar testing in the early 1990s and a dramatic increase in the share of early leavers from education and training compared to the early 2000s. Similarly, greater attention is paid to problems of general education teachers than VET teachers and trainers. The shortage of young teachers and trainers in the general stream (mathematics, science, IT, English) is more visible. Although difficulties to attract experienced people to enter teaching/training positions in VET are acknowledged, the importance of investment in in-service training in VET is underestimated.

Several strategy papers were developed in the past five years. The 'Learning Slovakia' paper (Ministry of Education expert group, 2017) suggested deep systemic changes in VET. However, only some of them were translated into legislation in 2018 and in the 'National programme for the development of education' (NPDE) (Ministry of Education, Science, Research and Sport of the SR, 2018) adopted in 2018. The 'Learning makes sense' analysis (Hall et al., 2019) backed by the NGO Mesa 10 offered a detailed analysis of the education system focusing on general education and tertiary education: Still, it did not address VET.

Furthermore, the policy paper 'Modern and successful Slovakia' (Ministry of Finance of the SR, 2020) issued by the ministry of finance in October 2020 offered detailed measures and costs of implementation not only in education but in all areas of the economy and society. Finally, the 'Recovery and resilience plan' (Ministry of Finance of the SR, 2021) adopted in April 2020 and subsequently endorsed by the European Commission offered the framework for reforms and investment in all areas including education. Nevertheless, the originally discussed lifelong learning measures were not incorporated and low attention is paid to VET.

([1]) It was the seventh (67.46%) strongest in 2019 in the share of VET students as % of all upper secondary students, according to Eurostat [educ_uoe_enrs04].

CHAPTER 2. Types of teaching and training professionals

2.1. Main types

There is neither a country-specific definition of initial vocational education and training (IVET) nor of IVET professionals *per se*. Traditionally, IVET is labelled as aimed at preparing for profession and starts at the age of 15. The Act on pedagogical and professional staff (138/2019) recognises diverse categories of pedagogical staff and professional staff (see more in Annex 1) making no explicit difference between VET and non-VET professionals. Thus, any professionals acting in secondary VET schools can be seen as IVET professionals. The following are the most important:

(a) teachers (*učitel*) of general subjects in VET schools;
(b) teachers of vocational subjects;
(c) school-based trainers (*majster odbornej výchovy*) who belong to the category of pedagogical staff but are not classified as teachers by law.

Furthermore, the Act on VET (61/2015) covers IVET professionals focusing on work-based learning who are not considered pedagogical staff by law and who are employees of companies:

(a) dual instructors (*inštruktor*);
(b) dual head instructors (*hlavný inštruktor*);
(c) school-affiliated instructors (*inštruktor*).

While the first two categories of staff are active within dual VET, the third category can be engaged by schools to offer in-company training to learners outside dual VET.

2.2. VET schools

VET schools were traditionally specialised to serve respective sectors of the economy. VET schools directly pointed in their names to agriculture, chemistry, construction, mechanical engineering, etc. (referred below as an attribute).
According to the Act on VET (61/2015), there are the following VET school types:

(a) secondary VET school with an attribute;
(b) secondary industrial school with an attribute;
(c) secondary health school;
(d) commercial academy;

(e) hotel academy;
(f) police secondary VET school;
(g) secondary school of fire protection.

Types of schools listed in points b) to g) maintain their traditional names, partly due to their higher attractiveness and no need to diversify the provision of programmes to attract learners. Adjusting to a market-driven economy, turbulences in the labour market and a funding scheme based on a per-capita principle however resulted in a weakening of earlier specialisations of many VET schools.

There are schools that deliver programmes that can be seen as VET as they are classified so by ISCED and they offer vocational qualification certificates. Diverse schools of arts and sports schools offering these programmes are covered by the Education Act (245/2008) and not by the Act on VET.

2.3. Teaching and training professionals by type of VET school

Teachers in VET schools have the same status as teachers in the general education stream. Qualification requirements and regulation of their continuing professional development are equivalent. Nevertheless, it is more relevant to look at the types of VET programmes of VET schools rather than at the types of VET schools when it comes to training professionals. The type of a practical component of the programme and not the type of school makes the difference. From 2008, all VET schools are classified in legislation as '*stredná odborná škola'* but three traditional types of programmes have remained:

(a) VET programmes completed by a 'maturita' school leaving certificate entitling to apply for higher education contain;
    i. practical lessons (praktické cvičenie) offered by teachers of relevant vocational subjects and from 2009 also by school-based trainers, are a mix of theory and practice complementing the respective subject matter;
    ii. vocational practice (odborná prax); a short periodic (e.g. six hours bi-weekly) training offered, as a rule, by teachers of relevant vocational subjects, and, optionally, a short continuous training (e.g. two weeks, usually at the end or at the beginning of a school year) in contracted companies. The latter is similar to traineeship placements. It is supervised by a teacher of a relevant vocational subject, but can also be offered by an experienced regular company staff without supervision of an IVET professional;

(b) VET programmes completed by a certificate of apprenticeship contain vocational training (*odborný výcvik*) offered by school-based trainers or by instructors and can also contain the aforementioned practical lessons. Together it is a minimum of 1 520 hours of training spread over the programme;
(c) VET programmes completed by both a '*maturita'* school leaving certificate and a certificate of apprenticeship contain practical lessons and vocational training (at least 1 200 hours), together a minimum of 1 400 hours.

There are the following ways of provision of vocational training that is crucial for awarding a certificate of apprenticeship:
training offered in school workshops by the school-based trainers and/or in cooperation with complementary non-pedagogical staff employed by the school working in affiliated workplaces (such as restaurants or hairdresser saloons). Training is fully controlled by the school;
training offered in companies based on an institutional contract between a school and a company that can offer better conditions necessary for the development of specific skills. The company staff involved in this training is supervised by a respective school-based trainer and strictly controlled by the school. These school-affiliated instructors have a different status than dual instructors;
training offered by companies involved in dual VET based on an individual contract between an individual learner and a company and backed by a contract between a company and a school; in this case, training is fully covered by dual instructors and a head instructor, who all are employees of the company.

There are no genuine second chance schools in Slovakia as there was no need to establish them. Traditionally, a very low share of early leavers from education and training was interrelated with 10-year compulsory education comprising, as a rule, also one year after completion of lower secondary general education easing transition from lower to upper secondary education. Strong deterioration in early leaving education and training, in particular in regions lagging in economic development, led to the expansion of programmes that offer completion of lower secondary education within a sort of pre-vocational IVET. These programmes opening the way to a certificate of apprenticeship also for drop-outs from lower secondary general education are offered by secondary VET schools and regular VET teachers and school-based trainers. These programmes can also be offered in dual mode, thus dual instructors and head instructors from companies can be involved in the provision of this alternative path to obtaining a qualification. Typical programmes aimed at the reintegration of adults into formal IVET are not yet in place but are envisaged by the Lifelong learning and guidance strategy 2030 already in the pipeline. Currently, adult learners registered with

labour offices can be offered labour market training within active labour market policies. Teaching/training professionals offering these programmes are usually called lectors with a status regulated by the Act on Lifelong Learning (568/2009). Nevertheless, even in the case of labour market training programmes accredited by the education ministry, qualifications obtained are not fully equivalent to qualifications obtained in formal IVET.

CHAPTER 3. Teaching and training professionals in school-based settings

3.1. Legislation

Teachers and trainers' continuous professional development (CPD) is regulated by the Act on pedagogical and professional staff (138/2019). A decree of the education ministry on qualification prerequisites (1/2020) sets very detailed requirements for respective pedagogical staff and professional staff categories. Some additional requirements can be set for some specific programmes and for staff in schools for students with special needs.

Another decree of the education ministry on education in support of professional development (361/2019) offers details on the provision of in-service training, requirements for progressing in the career path and a related role of professional standards set for respective career positions and levels. It also explains the attestation portfolio assessment introduced by this act to make recognition of professionalisation more flexible.

Responsibility for CPD of teachers and trainers lies with school directors who must develop CPD plans of their staff. Traditionally, the Methodological-Pedagogical Centre (MPC) is responsible for supporting teachers and trainers' professional development. However, neither MPC nor a national curricular authority, the State Institute of Vocational Education, have capacities and specialists to cover a variety of VET programmes and teachers and trainers CPD' needs. For VET professionals who inevitably need the provision of training to cope with new technologies-related challenges, a lack of public sources to purchase relevant training is seriously endangering their professionalisation.

3.2. Qualification and competence requirements

Teachers of general and vocational subjects in VET schools must complete a teacher training programme (second level of higher education), or, alternatively, non-teaching but relevant second-level programme complemented by complementary pedagogical study (CPS). School-based trainers must have relevant professional skills (e.g. a certificate of apprenticeship as a minimum), at least a '*maturita'* school-leaving certificate and relevant pedagogical skills (CPS or a certificate from a newly developed two-year post-secondary qualifying studies offered by secondary VET schools). Although not obligatory, bachelor studies for trainers are gradually in increase.

There are, in fact, three sources for the development of competence requirements for teachers and trainers related to three ways applied to setting standards:

(a) professional standards following the legislation (138/2019);
(b) occupational standards within the National System of Occupations (NSO);
(c) qualification standards within the National Qualifications System (NQS).

However, occupational and qualification standards set by NSO and NQS only have an informative function, the only legally relevant are professional standards prescribed for all professional positions and all levels of the career path by the education ministry regulation. These standards can be seen as prescribing fundaments of competence profiles that are relevant for individual professionals and are subject to their assessment. The 2020-22 national ESF project 'Professional development of teachers (TEACHERS)' run by the Methodological-Pedagogical Centre in cooperation with the National Institute for Education, with a total budget of EUR 6 917 756.19, is aimed at revising professional standards and setting new standards for new positions introduced by the new law (138/2019).

To encourage practitioners to teach/train in a VET school, the prescribed qualification requirements are however not applied in the case of providing education for a maximum of 10 hours per week or a maximum of 90 days during the school year. This measure can be seen as an opportunity to bring some innovations from companies to schools and also mitigate the ageing challenge.

3.3. Initial training programmes

Pre-service training of teachers is organised by universities and regulated by the Higher education act (131/2002). All programmes were accredited by the Accreditation Commission affiliated to the government and now are the subject of reaccreditation according to the newly created Slovak Accreditation Agency for Higher Education ([2]) and the newly issued quality standards reflecting the Standards and guidelines for quality assurance in the European higher education area (ESG). The 2018 higher education reform also reduced the number of study branches significantly, thus the comprehensive broad study branch ‘Teacher training and education science’ comprises now all types of teacher training and education related branches including also ‘Teacher training for academic subjects’ and ‘Teacher training for professional subjects and practical training’ that are relevant for VET schools.

([2]) See www.saavs.sk

Higher education institutions interested in the provision of teacher training must comply with the description of broad graduate profiles for the 1st, 2nd and 3rd cycle of higher education that are about one page long containing learning outcomes only implicitly. There are no specific graduates' profiles prescribed for respective programmes. Professional standards prescribed for all professional positions and all levels of the career path to be achieved within the progress in professionalization are, however, reflected. Higher education institutions must further meet quality standards set by the accreditation agency. They must demonstrate to have a functional system of internal quality assurance and quality staff for the provision of respective programmes. The right to provision of teacher training is highly dependent on the employment of high-status professors. In contrast to the past, higher education institutions fulfilling requirements for institutional accreditation are free to open any of the study programmes now subsumed under the respective broad study branch. Less robust higher education institutions must, however, apply for accreditation of individual study programmes. New rules might lead to the provision of teacher training programmes mixing some traditional general education subjects, such as mathematics, with professional/vocational subjects, such as accountancy, or geography and economics. This kind of teachers might be attractive for VET schools, as well as their training might be better adjusted to VET schools' needs.

Teacher training programmes aimed at general subjects were, as a rule, aimed at preparing future teachers for two subjects, such as mathematics and physics or history and the Slovak language. There has never been, and there is still no specific focus on adjusting to VET programmes and VET learners within initial teacher training. Teacher training programmes aimed at professional/vocational subjects are very rare. There are only marginal cases of teacher training programmes for teachers of economic subjects.

Bachelor studies are offered for school-based trainers in response to the increasing interest in higher education as graduates can qualify for better remuneration (higher tariff salary category for tertiary educated). These studies, however, do not cover all secondary VET programmes.

For students of relevant non-teaching programmes, CPS programmes (of a minimum of 200 hours) are offered to acquire teaching/training skills and knowledge about education and qualification systems. CPS can be studied simultaneously or consecutively. An alternative way for the position of qualified trainer is a two-year post-secondary qualifying study (ISCED 454). It is offered by secondary VET schools focusing on preparing specialists for the diverse pedagogical and social services not requiring higher education, and is, therefore, less attractive.

3.4. Requirements for continuous professional development

While CPD is not mandatory, there are four career path levels (beginner, independent worker, worker with the first attestation, and worker with the second attestation) with qualification standards for the respective category of pedagogical staff (e.g. school-based trainer) and respective career path level set. CPD is regulated and necessary with regard to progress in these career path levels. From 2009, promotion of VET teachers and trainers was based on the accumulation of credits that were obtained in particular by completion of accredited in-service training. Criticism of the credit system that resulted in credit hunting regardless of the quality of in-service training led to the adoption of the new Act on pedagogical and professional staff (138/2019) making courses of in-service training less important for career progress. Neither number of hours of in-service training nor any similar quantitative requirements are prescribed for promotion into higher level except five years of practice in the case of application for the attestation procedure. Applicants defend an attestation portfolio in front of the commission of the attestation authority. The portfolio must document the professionalisation progress of the defendant, as visible in their activities at school validated by the school director. In-service training certifying progress could be part of the portfolio, but it is not obligatory.

There is a diversity of in-service training courses that can be seen as related to CPD, such as refresher courses, innovation courses and diverse types of courses required by specific positions within the school system. There are two types of in-service training activities directly related to CPD, as they lead to progress in a career path level:

(a) adaptation of novice teachers or trainers lasts for up to two years after entering a service; it is organised under the responsibility of a director of a VET school or by an external CPD teacher;

(b) pre-attestation training is offered optionally to experienced teachers interested in obtaining the first or second attestation prior to the obligatory attestation examination and defending an attestation portfolio that should document fulfilling respective professional standards.

In-service training can be offered by the public in-service training institutions, universities, but also by other organisations specified by law meeting requirements for provision of respective type of in-service training. A decree ([3]) prescribes in its

([3]) A decree of the education ministry on training in professional development (361/2019). https://www.slov-lex.sk/pravne-predpisy/SK/ZZ/2019/361/20191115.

annexes the main and partial goals of respective types of training. CPD authorities, which are organisations entitled to offer the first or second attestation to teachers or trainers, are education ministry agencies, such as the MPC, and higher education institutions involved in relevant initial teacher/trainer training.

No needs analysis related to CPD is explicitly requested. Schools are however obliged to develop a CPD plan valid for four years that can be annually renewed. Training plans should be instrumental for securing financing of respective training courses but schools signal a lack of means for purchasing relevant attractive courses. Progress in CPD and applying for the attestation examination is up to individual teachers or trainers. Focusing on the development of respective competences within CPD depends on individual teachers and trainers' needs, they can be advised by the school director, peers or an attestation authority specialist. It can address technical, pedagogical/didactical or any other competences that are relevant to fulfil prescribed professional standards. There is no specialised position of mentors of teachers and trainers except for specific cases such as a peer supervising adaptation education of new teachers or trainers, or a specialist in an attestation authority who is in contact with teachers and trainers applying for the attestation examination. Their role can be seen as a role of mentor despite not using this term explicitly. Similarly, experienced teachers who are appointed heads of common interest groups in schools fulfil mentoring tasks, according to the law.

There is no official scheme in place on validation and recognition of competences acquired on the job or in non-formal settings. Defending an attestation portfolio within CPD can be, however, seen as a similar procedure.

3.5. Data on teachers and trainers in school-based settings

Data on teachers, school-based trainers and other professionals in VET schools are collected annually by the Slovak Centre of Scientific and Technical Information, SCSTI (see the comparison of staff numbers in 2015 and 2020 in Table 1 in Annex 2). The numbers of teachers and trainers significantly decreased corresponding to the decrease of the number of schools from 453 in 2015 to 433 in 2020, and to the respective population decline. An increase in numbers of auxiliary staff (school psychologists, social pedagogues, pedagogical assistants) reflects efforts in support of inclusive education. The 2020 data also confirm a traditionally high share of female teachers and a comparably balanced gender share among trainers. The latter data, however, hide imbalances in respective programmes.

Details on qualifications, lessons taught by qualified teachers and trainers complying with their specialisation and lessons taught by qualified teachers and trainers, however, with different specialisation were collected every five years. The newest data are from 2014, as the project for the 2019 data collection was abolished. More detailed data on teachers and trainers are expected from the education ministry in 2022 based on the collection of digital data (the RIS data collection system). A new digital platform has replaced some of the traditional paper-based data collections. Table 2 in Annex 2 offers a picture of the ageing of VET professionals based on the 2020 RIS data. The average age of teachers and trainers regardless of gender is about 50 years. The number of trainers aged 55 years and more (44.7%) is significantly higher compared to the number of teachers (37.3%). Over 50% of male trainers aged 55 years and more, signal a lack of attractiveness of trainer positions for young professionals. Furthermore, the high age of male trainers who are predominantly working in technically oriented branches might signal the need for intensive in-service training and special care in support of CPD of newcomers.

Table 3 in Annex 2 offers a picture of years of practice of teachers and trainers. Although Table 2 indicates a comparably very low share of young teachers and trainers below 30 years of age, in contrast to this, Table 3 indicates a substantially higher share of teachers and trainers with years of experience below six years. This proportion is extremely high concerning trainers as visible from comparison of relevant data (5.9% below 30 years of age and 21.8% below six years of practice).

There are data about provision of in-service training by MPC that, however, focuses predominantly on teachers of general education subjects. Furthermore, there are official data from SCSTI covering also some other providers (Slovak Centre of Scientific and Technical Information, 2020). E.g., in 2019, 38 activities were reported covering 1 756 participants serving as teachers of vocational subjects in VET schools. There is, however, no reliable overview of in-service training of VET teachers and trainers available, as there are no data collected from teachers and trainers about their attendance of in-service training. On the other hand, there are data about the professionalisation of teachers and trainers represented by achieving the respective career path level. Table 4 in Annex 2 offers the distribution of stages of professionalisation represented by career path levels: a dominant share of teachers is at the third level (35.7% are after the first attestation), and a dominant share of trainers is at the second level (66.5% are independent trainers before the first attestation).

Traditionally, educational statistics are collected by the education ministry agency (now SCSTI) at the start of the school year (15 September). Data on VET

schools are available at the SCSTI portal ([4]), where some collected data are presented in tables. The RIS data are collected monthly during the school year allowing for continuous monitoring of the school system. Data are only available on request except for the data on numbers of learners and staff that can be accessed at a searchable portal ([5]). Neither SCSTI's nor RIS' full databases are publicly accessible.

([4]) See https://www.cvtisr.sk/cvti-sr-vedecka-kniznica/informacie-o-skolstve/statistiky/statisticka-rocenka-publikacia/statisticka-rocenka-stredne-odborne-skoly.html?page_id=9597

([5]) See https://crinfo.iedu.sk/RISPortal/catalogue/

CHAPTER 4. Training professionals in work-based settings

4.1. Definitions

There is no clear drawing line between genuine school-based settings and some forms of work-based settings. Similarly, there is no strict division between names of professionals involved. Provision of practical training in work-based settings delivered under the control of the school is offered by a school-based trainer or by an instructor who is supervised by a trainer. In the case of work-based learning within dual VET, professionals offering practical education in companies are also called instructors (see more in Section 2.1 and in Annex 1).

4.2. Legislation

VET professionals offering work-based learning under the control of a school belong to regular pedagogical staff and their qualifications and CPD is strictly regulated by the Act on pedagogical staff and professional staff (138/2019) and related bylaws. Their competence profiles are interlinked with professional standards prescribed for the respective career path level.

Dual instructors, instructors and head instructors are covered by the Act on VET (61/2015). There are no obligatory professional standards set, qualification requirements are regulated by this act very broadly by describing topics of obligatory initial training. There is no legislation regulating CPD of these positions.

4.3. Provisions for continuous professional development

CPD of dual instructors and head instructors is not regulated by the legislation and it is fully up to companies in which these professionals are employed. Representatives of employers were concerned by the risk of overregulation and insisted on a lower level of qualification requirements of dual instructors compared to school-based trainers. With dual VET settled in many companies and after more experience gained, the need for retraining or even genuine CPD emerged. A good practice example of CPD came from dm drogerie markt Slovakia (see Box 1 in Annex 3).

Qualification certificates of dual instructors are valid for seven years. The 2015 legislation does not address provision of CDP for instructors. CPD provision is under full responsibility of respective employer organisations. The Employer Council for Dual VET currently debates the creation of an 'Instructor Academy' that should take care of systemic in-service training of instructors in three steps:

(a) refreshment based on the content of initial training ([6]);
(b) broader focus on pedagogy, in particular curricula development, and cooperation of schools and companies in adjusting national curricula;
(c) company-specific agenda.

Although the work of dual instructors is equivalent to the work of school-based trainers, both initial training and in-service training differ substantially. Qualification requirements prescribed for dual instructors (8 hours) and head instructors (40 hours) are lower compared to school-based trainers (over 200 hours in CPS, depending on respective providers). This clearly indicates the need to rethink CPD of instructors.

4.4. Data on trainers in work-based settings

There is no national system of collection of data on dual instructors and head instructors. After the piloting of training of instructors within the ESF project and the development of background materials, employer organisations ('sectoral assignees') overlooking the delivery of assigned VET programmes are also responsible for certification of instructors. About 1 800 dual instructors were retrained according to the Employer Council for Dual VET. A formalised system of collecting data is under revision with the first outputs offering detailed data available in 2023.

([6]) All materials including detained methodological guidelines concerning the provision of initial training are available at the website of the strongest employer representative, the National Union of Employers, at https://www.mfsr.sk/sk/financie/institut-financnej-politiky/strategicke-materialy/ine-strategicke-materialy/.

CHAPTER 5. Partnerships between schools and companies

5.1. Examples of practice

Mutual benefits of cooperation between schools and companies regarding the impact of professionalisation of staff involved depend on the type of partnerships as described in Section 5.2 and on the quality and compatibility of the company and school cultures.

In addition to the type of partnership, cooperation arrangements are also influenced by the respective VET programmes. Some VET programmes are related to jobs with advanced technology or at-risk environment requesting a high level of responsibility. In contrast to the best practice example, where very young learners can be trained directly in companies (see Box 1 in Annex 3), in-company training within some other VET programmes is age-sensitive and preliminary experience gained in school workshops is needed. This leads to two solutions: The establishment of well-equipped training centres outside schools in company premises (see e.g. Box 2 in Annex 3) or the postponement of in-company training after the period of school-based training to the higher age of learners. Establishing in-company training centres leads to higher autonomy of in-company practical training that could weaken the links and cooperation between school and company staff and gradually even to the separation of initial VET into independent parts: theory-based in school and practice-based in a company. VET programmes sensitive to age preferring preliminary experience of learners acquired in school-based training naturally require more intensive cooperation between the school and the company (see Box 3 in Annex 3).

5.2. Cooperation between VET schools and companies

In essence, there are two fundamental types of partnerships:

(a) a partnership backed by a contract on provision of practical education by a company between a school and a company; and

(b) a partnership backed by a contract on dual VET between a school and a company complemented by individual contracts between individual learners and the company.

The first case is traditional and was dominant prior to introducing dual VET. In contrast to dual VET, these partnerships are, as a rule, initiated by direct contacts between schools and companies (see Box 4 in Annex 3).

VET schools offering programmes leading to a certificate of apprenticeship must offer stronger periods of work-based learning and they traditionally sign contracts with companies on the provision of practical education. These contracts are also possible under current legislation, but they do not qualify for all financial incentives available for partnerships within dual VET.

In the second case, partnerships within dual VET are strongly supported by financial incentives (direct payments to companies from the state budget in particular) and influenced by a detailed regulation of the Act on VET (61/2015) stipulating a prominent role of representatives of employers (respective 'sectoral assignees' and the Employer Council for Dual VET).

In addition, directors of schools within their responsibility are entitled to any other partnerships that could also affect other aspects of common benefit going beyond the provision of practical education as prescribed by the national curricula.

In-company instructors in the first case are company employees, but they are selected based on a common agreement of the school and the company. If there are no suitable instructors in the company the school can decline to sign a contract.

In-company instructors in the second case are also company employees, but the responsibility for the selection lies entirely with the company.

Coordination of activities and cooperation of in-company instructors and school teachers/trainers are regulated by law. In both cases, school teachers/trainers supervise the provision of practical education by instructors of a maximum of 40 learners. In the first case details of coordination predominantly depend on the VET school. In the second case, the autonomy of the company is greater. After the 2018 amendment of the Act on VET, it has been increased by the introduction of the position of a head instructor who took over many responsibilities of the school-based staff. There are no specific measures in support of informing teachers/trainers on relevant technological progress and changes in job profiles, and in-company instructors to improve their pedagogical competences.

5.3. Hybrid teachers and trainers

There are no genuine hybrid teachers/trainers in IVET due to two reasons. Positions in schools are not attractive for practitioners due to non-competitive salaries and due to comparably strong qualification requirements. Instead of making such a hybrid position more attractive, further temporary weakening of

qualification requirements for practitioners is envisaged in addition to the measure mentioned in Section 3.2. Also, no support for establishing hybrid positions is visible in the development of the provision of practical training within dual VET. Sharing responsibilities between school-based trainers and instructors employed by companies visible in the early phases of dual VET that could be seen as paving the way for future positions of hybrid trainers is gradually diminishing. With the gradual development of dual VET, companies are keen to offer practical training fully under their control supervised by head instructors only. On the other hand, some companies with strong dual VET participation signal their intention to employ skilled professionals fulfilling qualification requirements prescribed for school-based VET trainers. They need better-trained specialists to go beyond the regular responsibilities of instructors and head instructors, such as adjusting the framework curriculum or strengthening the quality of delivery of in-company training by dual instructors.

5.4. Data on cooperation and hybrid teachers

There are neither quantitative nor qualitative data on cooperation and partnerships between schools and companies, except data on numbers of companies involved in dual VET. These data are collected by respective employer representatives within the scope of their responsibility for respective studies. No data are available about contracts between schools and companies on sharing responsibilities in the delivery of respective programmes outside dual VET.

CHAPTER 6. National and EU-funded projects and initiatives

6.1. Digital skills for remote and blended teaching

In May 2019, the 'Strategy of the digital transformation of Slovakia 2030' (Office of the Deputy Prime Minister of the SR for Investments and Informatisation, 2019a) was approved by the government, followed by the 'Action plan for the digital transformation of Slovakia for 2019-2022' (Office of the Deputy Prime Minister of the SR for Investments and Informatisation, 2019b) approved by the government in July 2019. These documents announced the digital transformation of schools that should be in more detail addressed in the 'School informatisation programme with a view to 2030' ([7]) that is under preparation by the education ministry. The ESF project IT Academy, originally aimed at the improvement of science, technology, engineering, and mathematics (STEM) in primary and secondary education including VET, currently also pilots digital transformation. By March 2021, 664 directors and digital coordinators from 353 basic and secondary schools have been retrained. Now, these schools work with the support of the IT Academy staff on digital transformation programmes containing elaboration of the school action plans with measures to be achieved until 2024. These efforts are backed by a strategy paper (IT Academy staff, 2020). It is supported by the Digital Coalition – national coalition for digital skills and occupations of the Slovak Republic (www.digitalnakoalicia.sk) that is also active in supporting the cooperation of schools and companies, retraining of teachers and trainers and national IT skills testing. 45 516 participants in the IT fitness test 2021, out of which 1 378 teachers of all levels, are reported by the Digital Coalition as of 25 June 2021.

The recovery and resilience plan (RRP) approved by the government in April 2021 (Ministry of Finance the SR, 2021) got the green light by the European Commission on 21 June 2021 (European Commission, 2021). The investment of EUR 187.2 million in the digital infrastructure in schools is envisaged. The RRP explicitly speaks about 'financing digital equipment, including for children from socially disadvantaged backgrounds, to enhance digital skills and create a new learning ecosystem which will be further strengthened by curriculum reforms'. Within the Reform 2 of Component 7 of RRP 'Preparing and developing teachers for new content and forms of teaching', increasing the use of digital technologies

([7]) A Slovak title of this paper is '*Program informatizácie školstva s výhľadom do roku 2030*'.

in teaching is explicitly targeted. The RRP also declares the importance of improving the digital skills of inhabitants, in particular seniors and students. But, neither a clear focus on improving digital skills of VET teachers and trainers nor respective specific measures have been explicitly set so far.

The Digital Coalition that contributed to the renewal of curricula for IT programmes of secondary VET schools lacks the support of national authorities for necessary retraining of teaching staff. The Digital Coalition also signals a high risk of lagging behind of secondary VET schools in coping with changes in the labour market caused by artificial intelligence, automation and robotisation.

Despite insufficient support from the central level, there are schools actively facing new challenges as visible e.g. within Erasmus+ projects. The 'Robotics for teachers of secondary VET schools (RUSOS)' project ([8]) is aimed at retraining of teachers in the field of robotics ([9]) to inform them on the need to change VET graduates profiles in response to growing deployment of robotic systems, in particular in the automotive industry. The 'Innovative blended learning toolkit for the safe pest management of honeybees (BLESABEE)' project [(10)] helped increase the competences and skills of teachers involved in the beekeeping vocational education and training in Slovakia, the Czech Republic and Austria. The project involving 40 beekeeping teachers and indirectly more than 800 beekeeping trainers and technicians was honoured in the 2020 Awards for VET Excellence and a textbook 'How to manage and maintain healthy bees', was awarded the Gold Medal at the International Congress Apimondia 2019.

The COVID-19 pandemic clearly demonstrated two limits of distance learning: missing digital equipment in families living in poverty and the questionable effectiveness of distance learning with a negative impact, particularly on VET. Although all schools are wired to the internet, improved connectivity is needed. Barriers in equipment and connectivity also hamper the further improvement of teachers and trainers' digital skills that comes with practice. Dissatisfaction with the provision of central procurement of equipment and internet services resulted in massive support of representatives of schools and pedagogues for the introduction of the so-called digital allowance (Andreánsky, 2021). The digital allowance should be a monthly payment to pedagogues and learners/parents from the state budget for leasing comprehensive digital services comprising hardware, software, internet, service and insurance instead of the purchase of respective components

([8]) See https://ec.europa.eu/programmes/erasmus-plus/projects/eplus-project-details/#project/2015-1-SK01-KA202-008970

([9]) See http://rusos.sjf.tuke.sk/moodle/

([10]) See https://ec.europa.eu/programmes/erasmus-plus/projects/eplus-project-details/#project/2017-1-SK01-KA202-035299

separately as is the case now. Digital allowance is seen as an ecological solution for preventing digital poverty as well as extensive electronic waste as it allows recycling and reusing hardware and software after termination of a leasing contract. Massive support for this idea by practitioners corresponds with their preference of tailor-made full service. Closer contacts between schools and a certified provider of this complex service are also expected to contribute to more efficient adapting of teaching staff to digital-age challenges.

6.2. Green skills for sustainability

The policy paper 'Greener Slovakia: strategy of the environmental policy of the Slovak Republic until 2030' (Ministry of Environment of the SR, 2019) adopted in 2019 contains Subchapter 13.1 Improvement of environmental education in formal education. This policy paper offers only a framework for measures to be adopted. The RRP speaks about 'digital and green transition to education' in Chapter 2.2 of Component 7 'Education for 21st century' presenting the main objectives of the education reform. Although 43% of the RRP's total allocation for reforms and investments supports climate objectives and almost 13% of investment in education reforms supports green transformation, measures aimed at improving green skills of VET teachers and trainers have not yet been set.

Within traditional funding schemes in support of green projects maintained by the education ministry, environment ministry, Erasmus plus or Norwegian funds, projects focused on the development of green skills of pupils rather than teachers and trainers, and on general education rather than on VET are dominant.

The 2019-21 Erasmus plus project 'Improve the efficiency and the attractiveness of environmental engineering and waste management training with game based virtual reality (VR-WAMA)' ([11]) is one of the rare examples focusing on green skills and VET students and teachers. The project aims to develop a training platform containing a game-based 3D Virtual Reality educational environment to assist VET students to better learn and teachers to teach more efficiently in the field of environmental engineering and waste management.

6.3. Preventing early leaving from VET

Inclusive education developed into one of the main priorities of educational reforms, as can also be seen in Component 6 of the RRP 'Accessibility,

([11]) See https://www.erasmusplus.sk/index.php?sw=33&menu=0&proj=2019-1-SK01-KA202-060790.

development and quality of inclusive education at all levels'. Although this component focuses predominantly on the provision of inclusive education in kindergartens, primary and lower secondary education, it also signals a change in attitudes towards the prevention of early leaving from education and training. Once an EU champion, now the share of early leavers from education and training more than doubled nationwide and jumped significantly over the national target of 6% and the EU 2020 target of 10% in eastern Slovakia. Within Chapter 3.3 'Implementation under recovery and resilience plan pillars' of Part 1 of the RRP presenting general objectives, an important prevention policy is discussed: 'By setting up an early warning system for early school leaving, schools will be able to capture pupils at risk of early school leaving at an early stage.' No relevant factor to follow and no details of the warning mechanism are however identified. Substantial revision of intervention measures envisaged by both RRP and the government manifesto is however in progress in relation to the creation of pre-vocational programmes in detail presented in the draft of Lifelong learning and guidance strategy 2030. Instead of criticised ISCED 253 programmes (the so-called F-programmes) offered by secondary VET schools that represented a dead-end stream, revised F-programmes are piloted. They merge bridging programmes aimed at acquiring ISCED 2 general education with the provision of qualifications representing building blocks for further expansion of qualification as well as access to further studies. Making the current qualification system more flexible to allow for acquiring 'smaller' qualifications via modules of formal VET or short programmes of labour market training for the unemployed is also suggested by the draft strategy of lifelong learning. Thus, it also suggests compensation measures to address also adults in need of the second chance education.

Making the learning environment in schools better suitable to individual learners' needs is also targeted via several ESF projects in support of inclusive education at all levels of education. The creation of inclusive teams within which teachers cooperate with newly hired non-teaching specialists is in increase, strongly supported by the ESF and from 2021 by the RRP. The employment of additional staff (school psychologists, special pedagogues and pedagogical assistants) that started in kindergartens and basic schools, is in gradual progress also in VET schools. Furthermore, revised F-programmes with expanded work-based learning (up to 80%), open the door also to the completion of lower secondary general education to more practically oriented pupils and also to some mentally challenged pupils.

CHAPTER 7. National surveys of teaching and training populations

There were no national surveys conducted over the past five years on the teaching and training professionals in schools or enterprises. Regular analyses conducted by the Slovak Centre of Scientific and Technical Information (SCSTI), every five years and originally envisaged for 2019, have been stopped, thus many detailed data about teachers and trainers including qualification by specialisation or about the share of lessons taught by qualified teachers with other specialisation than requested for the respective subject are available from the 2014 survey only. Disappointingly, Slovakia decided not to join the 2018 PISA segment targeting teachers and parents.

An interesting novelty is a survey 'Teacher wellbeing index Slovakia 2021'. A questionnaire responded by 1 756 regional schooling pedagogues (including VET schools) conducted by the Konvalinka institute in March and April 2021 signals serious concerns: almost half of surveyed teachers announced their consideration to leaving the profession, half declared that they do not feel safe in school to speak about their problems, and one quarter signalled a negative impact of the school environment on their mental health (Konvalinka, 2021). The impact of the pandemic and destruction of a regular learning environment certainly contributed to these unfavourable data. Regardless of the bias caused by the pandemic, these data signal the need for a detailed analysis to prevent a decline of quality education by frustrated teachers and trainers, as well as a further decline in the attractiveness of the teaching profession for young professionals.

CHAPTER 8. Conclusions

Two dominant policies are pushed by the education ministry: inclusive education and dual VET, the first of which is also dominant in the ‘Recovery and resilience plan’. In both cases, systemic impact analyses of already implemented measures are missing. Securing qualified staff and its professionalisation is hardly possible without these analyses and without analyses of the current systemic weaknesses of the VET system:

(a) a dramatically increasing share of early leavers from education and training and a very high share of young people neither in employment nor in education and training caused by a too rigid qualification system;
(b) a high share of overqualified tertiary-educated employees;
(c) a lack of skilled workers with certificates of apprenticeship.

Low attention is also paid to the ageing of teachers and school-based trainers. The average age of VET teachers and trainers is 50 years. This indicates the low attractiveness of these professions for young people. Nothing is known about the quality of comparably older people entering service in schools as novices. It is not clear whether school directors prefer older individuals due to their experience outside schools or whether they are not able to attract younger ones. The following data related to this indicate a discrepancy worth of detailed analysis: The share of teachers below 30 years of age is 4.3% compared to 15.3% of teachers with less than six years of practice in school and similar data for trainers (5.9% below 30 years of age and 21.8% below six years of practice in school).

It is not clear whether an inflow of older staff with a shorter history in schools brings innovations from the business world to schools, or whether they are just substitutes for young professionals reluctant to work in schools. Regardless of future results of detailed analyses, it is clear that more attention should be paid to the provision of in-service training of teachers and trainers. The ‘Teacher wellbeing index Slovakia 2021’ (see Chapter 7) also signals the need to pay more attention to the wellbeing of pedagogues including VET teachers and trainers already in service.

The COVID-19 pandemic highlighted the need to improve the digital skills of teachers and trainers but also to rethink new conditions of practical education. The new legislation disappointed pedagogues as it declined to address securing sources for covering in-service training costs of pedagogues. This is also relevant for the permanently discussed digitalisation. According to the Digital Coalition,

private subjects should receive greater support in the provision of training aimed at VET teachers and trainers' digital competences.

Epidemiological measures resulted in the limitation of the provision of work-based learning and pointed to the importance of developing alternative ways in support of acquiring practical skills. Video tutorials and simulators are requested to shorten the initial period of developing practical skills via work-based learning. There are, however, no clear measures in support of upskilling teachers and trainers to cope with new challenges. Improving the digital skills of teachers and trainers is a symptomatic example of a current approach of national authorities to policy making: Diverse strategic papers, e.g. the 'Action plan for the digital transformation of Slovakia for 2019-2022' (Office of the Deputy Prime Minister of the SR for Investments and Informatisation, 2019b), approved in 2019, or the 'Strategy and the action plan for improving the situation of Slovakia in DESI until 2025' (Ministry of Investments, Regional Development and Informatisation of the SR, 2021), approved in May 2021, declare the importance of improving the digital skills of pedagogues. Hopefully, the 'National strategy for digital skills' to be prepared by the ministry of investments, regional development and informatisation, or the pending 'School informatisation programme with a view to 2030' under preparation by the education ministry, will bring clear measures, funding and improvement indicators targeting pedagogues with identified weaknesses.

The current debates on the need to improve results in STEM-related education at primary and lower secondary general education and on establishing labour market-oriented tertiary VET are very relevant also for secondary VET. Nevertheless, improving the results of lower secondary graduates in mathematics and science as well as the provision of attractive professional bachelor studies depend on improving the quality of teachers and supply of quality learning materials. No effective measures in support of both are visible yet.

Recommendations for a future pan-European survey on teachers and trainers derived from experience from the earlier opinion survey (Vantuch and Jelínková, 2018) and from the current hot topics are as follows:

(a) It is necessary to prevent as much as possible the bias caused by
insufficient sensitivity in processing survey data on the diversity of secondary IVET sub-streams and related diversity in these sub-streams that might remain hidden behind the aggregated data;
translation of questions in surveys reducing IVET into a sub-stream aimed at preparation for manual working positions;

(b) The pandemic indicates the need to focus in more detail on
the wellbeing of teachers and trainers and not only of learners;

improving digital skills of teaching staff represented by well-defined and measurable outcomes.

(c) Permanent clash of opinions of educators and employers on graduates' profiles and their quality indicates the need for better explanation of discrepancies between criticism of employers blaming schools for insufficient adjusting to labour market needs and insufficient provision of relevant data on anticipation of future skills causing obsolescence of curricula; and more detailed analyses of discrepancies between the lacking interest of young people to adopt a respective working position and the lacking supply of graduates suitable to fill in the vacancies.

List of abbreviations

CNC	computerised numerical control
CPD	continuous professional development
COVID-19	Coronavirus disease of 2019
DESI	Digital Economy and Society Index
ESF	European Social Fund
ESG	Standards and guidelines for quality assurance in the European higher education area
EU	European Union
ISCED	International Standard Classification of Education
IVET	initial vocational education and training
IT	information technology
MPC	Methodological-Pedagogical Centre
NGO	non-governmental organisation
NQS	National Qualifications System
NSO	National System of Occupations
PISA	Programme for International Student Assessment
PLC	programmable logic controller
RIS	*Rezortný informačný system* (Sectoral information system)
RRP	Recovery and resilience plan
SCSTI	Slovak Centre of Scientific and Technical Information
STEM	science, technology, engineering, mathematics
SR	Slovak Republic
VET	vocational education and training
ŽSR	*Železnice Slovenskej republiky* (Railways of the Slovak Republic)

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Annexes

Annex 1

Legislative coverage of classification of VET professionals*

Legislation	Professionals
Act on pedagogical and professional staff (138/2019) https://www.slov-lex.sk/pravne-predpisy/SK/ZZ/2019/138/	Pedagogical staff: teacher (*učiteľ* - § 20(1)); school-based trainer (*majster odbornej výchovy* - § 21(2)); tutor (*vychovávateľ* - § 20(3)); accompanist (*korepetítor*) - § 20(4)); school sports trainer (*školský tréner* - § 20(5)); pedagogical assistant (*pedagogický asistent* - § 21(1)); foreign lector (*zahraničný lektor* - § 21(2)); school special pedagogue (*školský špeciálny pedagóg* - § 21(3)); professional development teacher (*učiteľ profesijného rozvoja* - § 22)
Act on pedagogical and professional staff (138/2019) https://www.slov-lex.sk/pravne-predpisy/SK/ZZ/2019/138/ Act on VET (61/2015) https://www.slov-lex.sk/pravne-predpisy/SK/ZZ/2015/61/	Professional staff: psychologist and school psychologist (*psychológ a školský psychológ* - § 24); special pedagogue and field special pedagogue (*špeciálny pedagóg a terénny špeciálny pedagóg* - § 25); career counsellor *(kariérový poradca* - § 26); speech therapist and school speech therapist (*logopéd a školský logopéd* - § 27(1)); therapeutic pedagogue (*liečebný pedagóg* - § 27(2)); social pedagogue (*sociálny pedagóg* - § 27(3)) dual instructor (*inštruktor* - § 22), head dual instructor (*hlavný inštruktor* - § 21b) school-affiliated instructor (*inštruktor* - § 22)
Act on Lifelong Learning (568/2009) https://www.slov-lex.sk/pravne-predpisy/SK/ZZ/2009/568/20150901	Adult learning teacher/trainer (lektor - § 3d), e) and § 11)

NB: (*) There is no definition of VET professionals, all the aforementioned types except school-based trainer and three types of instructors who are active exclusively in VET, can be found as affecting both: general education and VET.

Annex 2

Statistics

Table 1. **Pedagogical staff at secondary VET schools in 2020**

	Directors and deputy directors			Teachers (full-time and part-time)			School-based trainers			Other pedagogical staff		
	Total	Females	%	Total	Females	%	Total	Females	%	Total	Females	%
Slovakia 2015	1 272	778	61.2	12 268	8 901	72.6	2 840	1 242	43.7	141	101	71.6
Slovakia 2020	1 210	772	63.8	11 146	7 864	70.6	2 563	1 112	43.4	241	214	88.8

NB: Without conservatories, sports schools and special stream schools.

Source: SCSTI, data as of 15 September 2020.

Table 2. **Teachers and school-based trainers in secondary VET schools by age groups in 2020 (%)**

Age groups/ Staff	<25	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-70	71+	Total	Average age	55+	<30
Teachers total	0.3	4.0	6.6	10.9	13.8	14.3	12.8	15.6	16.5	4.6	0.6	100	49.09	37.3	4.3
Teachers males	0.6	4.9	8.9	11.3	12.1	11.1	10.5	14.6	17.8	7.0	1.4	100	49.26	40.7	5.5
Teachers females	0.2	3.6	5.7	10.8	14.5	15.6	13.7	16.0	16.0	3.6	0.3	100	49.02	35.9	3.8
Trainers total	2.3	3.6	6.3	9.2	10.5	11.0	12.5	19.7	19.1	4.9	0.9	100	50.02	44.7	5.9
Trainers males	3.2	4.4	5.1	8.6	7.8	9.2	11.3	20.5	21.7	7.0	1.4	100	50.99	50.5	7.6
Trainers females	1.2	2.5	8.0	9.9	13.8	13.3	14.1	18.8	15.9	2.4	0.2	100	48.77	37.2	3.7

NB: Without conservatories, sports schools, art schools and special stream schools.

Source: Education ministry (RIS), data as of 15 September 2020, tabled by authors.

Table 3. **Teachers and school-based trainers in secondary VET schools by years of practice in 2020 (%)**

Years of practice/ Staff	0	1-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	>41	Not indicated	Total	Average years of practice	<6
Teachers total	4.1	11.2	11.3	11.9	13.1	12.6	11.1	12.4	6.8	1.3	4.1	100	19.2	15.3
Teachers males	5.7	13.7	11.6	11.4	11.4	10.4	10.0	11.0	7.7	2.4	4.6	100	18.5	19.4
Teachers females	3.4	10.3	11.2	12.2	13.7	13.5	11.6	13.0	6.4	0.9	4.0	100	19.4	13.7
Trainers total	7.3	14.5	10.2	8.4	9.4	11.1	10.5	11.9	10.2	4.3	2.1	100	19.6	21.8
Trainers males	8.8	16.0	10.2	6.7	7.3	9.8	10.3	12.6	10.4	5.6	2.3	100	19.6	24.7
Trainers females	5.5	12.7	10.1	10.5	12.1	12.8	10.8	11.1	10.0	2.5	1.8	100	19.7	18.2

NB: Without conservatories, sports schools, art schools and special stream schools.

Source: Education ministry (RIS), data as of 15 September 2020, tabled by authors.

Table 4. **Teachers and school-based trainers in secondary VET schools by career levels in 2020 (%)**

Staff/ Career level	Teachers			Trainers		
	Males	Females	Total	Males	Females	Total
Beginner	5.65	4.0	4.4	9.8	6.7	8.4
Independent worker	32.07	27.0	28.5	67.0	65.7	66.5
Worker with the first attestation	34.49	36.2	35.7	18.3	20.2	19.1
Worker with the second attestation	22.14	29.6	27.5	3.1	3.9	3.5
Not indicated	5.65	3.2	3.9	1.8	3.5	2.5
Total	100	100	100	100	100	100

NB: Without conservatories, sports schools, art schools and special stream schools.

Source: Education ministry (RIS), data as of 15 September 2020, tabled by authors.

Annex 3

Good practice examples

A good practice example of CPD is presented in Box 1.

Box 1. **CPD in the company involved in dual VET – dm drogerie markt, s.r.o.**

This company focuses on the sale of cosmetic, household and healthcare products. Although it belongs to the strong Austrian company, the country with a long history of dual VET, people in charge of the dual mode have developed their own approach to the provision of dual VET that fit best to the local and national conditions. Marcel Blaščák clearly expressed the crucial precondition of success: the quality of instructors and their ability to understand the world of young people. Although the legislation has introduced dual VET since 2015, the company started with the provision of practical education based on direct cooperation of schools and the company substantially earlier. They, therefore, refer to the origins of dual in the company already in 2012. The current legislation in support of dual VET is welcomed due to offering important fiscal incentives but it is not considered fundamental for the provision of quality of training. Qualification certificates for instructors are considered as fulfilment of legislative requirements rather than full empowering for the provision of quality training. The company has developed a specific three-module in-service training financed by the company itself. In May, a preparatory phase starts to make the company staff ready for smooth enrolment of new dual learners. All 122 dm branches must be ready to create a welcoming environment making young people feel as belonging to the company (despite their status as students and not employees like in 'real' dual VET). In October, a psychologist works with instructors to support them in mastering the delivery of training, in particular in coping with challenges resulting from personal contacts with individual dual learners. In March, another long-term cooperating specialist comes to assist instructors in a deeper understanding of the culture of the young generation in order to better harmonise developing learners' professional and personal skills. The company understands that school graduates working in their company will be exposed to a very demanding environment as a consequence of daily contact with customers in retail stores. Therefore, the best possible understanding of the world of dual learners is inevitable for success in both training per se and the performance on the workplace.

Source: dm drogerie markt, based on an interview with a company representative.

Two specific examples of company-school cooperation are presented in Boxes 2 and 3. While the former indicates the trend towards stronger autonomy of the company, the latter shows it towards the balanced sharing of responsibilities in practical training between school and company.

Box 2. **Partnership within dual VET – ZF Slovakia, a.s.**

ZF Friedrichshafen AG is a transnational group focusing on technology in the automotive industry. In Slovakia, ZF operates in six cities. The company cooperates with five schools in the vicinity of their plants in Trnava and Levice. In the 2020/21 school year, there were together 277 students of VET schools offering practical education within a dual mode with 150 in-company instructors supervised by 9 head instructors. The most popular programmes are mechanic-automotive production specialist, mechanic-electrician and machine tool setter. To compensate for insufficient equipment of schools, the company offers training in an in-company training centre with the state-of-the-art equipment (CNC cutters and lathers, 3D printers, manipulation robots or PLC programming learning tools).

ZF Slovakia entered dual VET inspired by its German mother, however, organisation and provision of training are different from the German practice. Furthermore, ZF Slovakia practice is unique, as the company also employs qualified school-based trainers. These professionals are valued by the company due to their pedagogical skills and prior experience in working with learners. There are 9 professionals of this kind already employed and the company intends to employ more. The reason for this is not only the peer support for regular instructors in pedagogical issues but also the intention to intervene in more depth in curricula design within the framework of the national curricula. ZF Slovakia is a strong supporter of dual VET, as it sees this as an opportunity to better plan human resources to be prepared for further expansion of production. Hiring these professionals by this company should improve the quality of practical education offered in the company. This experience signals the need to expand the initial training of instructors and/or to formalise their continuing professional development. This does not mean obligatory in-service training as this company experience proved that informal interactions of instructors and former school-based trainers works very well. It can be said that this model of provision of practical training led to the involvement of a new type of professionals not envisaged by law who, in fact, work as tutors.

Source: ZF Slovakia, based on an interview with a company representative.

Box 3. **Partnership within dual VET – Railways of the SR**

Railways of the Slovak Republic (Železnice Slovenskej republiky, a.s., ŽSR) is a state-owned company, originally a single railway services operator. After unbundling of infrastructure and services it operates in a competitive environment. Experiencing ageing and a lack of young staff the company has long-term cooperation with secondary VET schools specialising in professions in the transport sector. Many of them still hold the name indicating this specialisation: secondary VET school for transport). ŽSR currently cooperates with six schools within dual VET offering practical education for 147 learners by 43 instructors. Additional 82 instructors are retrained and certified without responsibilities for training of dual learners. Training of learners is offered in real conditions where there is no place for novice mistakes. This is why also very strict requirements concerning the physical and mental health of learners are prescribed. Some maturity coming with age is also welcomed and, therefore, ŽSR prefers sharing of practice education between schools and the company. The company offers in-company training just after two years of school-based training. In-company

instructors are selected from experienced practitioners similarly to other companies involved in dual VET. ŽSR however, because of a long-term experience of cooperation with 'sectoral' VET schools has instructors with early deep contacts with schools and working with learners. Cooperation of instructors and school-based trainers has therefore a long history and continues similarly also under dual VET mode. Supervision of in-company practical training by school-based trainers has also a long history and it continues also under dual VET as schools are finally responsible for awarding qualifications to graduates. Therefore, contacts between school staff and in-company staff are very intensive. In contrast to some cases of dual VET, there is no risk of equipment divide (outdated in schools and state-of-the-art in newly created in-company training centres) as practical training is offered in real-life conditions.

Source: ŽSR, based on an interview with a company representative.

There is a variety of cooperation between schools and companies outside the dual VET. Box 4 brings examples of cooperation between schools offering predominantly theory-focused VET programmes and companies, which is not fiscally supported from the state budget.

Box 4. **Cooperation of secondary industrial schools with companies outside dual VET**

In VET programmes focusing predominantly on theory, partnerships usually cover shorter periods of practical training: traineeships or two-to-three-week continuous practice at the end of the school year. There are, however, also examples of theory-focused programmes where in-company training is embedded in the curricula in the span of the school year. The Secondary Industrial School for Electrical Engineering 'Adlerka' in Bratislava offering an audio and video broadcasting technology programme cooperates with the Slovak Radio and the municipal TV broadcaster in the provision of in-company training through real work opportunities. After three years of school-based training, students are offered 90 hours of training broken into three hours per week. The school and the school staff cooperate with the in-company staff that is paid for assistance by the school.

The Secondary Industrial School for Mechanical Engineering 'Fajnorka' in Bratislava explicitly emphasizes the excellent cooperation with companies, in particular, those owned by their graduates or where their graduates work, comprising the provision of equipment, internships for students, supporting or leading projects of students, retraining of staff in schools and, as a novelty, also the direct provision of parts of education in the school. Thus, the support of school graduates is also gradually proving to be extremely important for the cooperation of schools and companies.

Many secondary industrial schools cooperate with companies in a similar way that is outside the dual VET framework. Benefits for VET students and teachers from such cooperation are, however, not valued by the national authorities, as there are no fiscal incentives in support of such partnerships.

Source: Slovak Association of Secondary VET Schools, based on an interview with representatives.