

This policy brief describes the main findings and recommendations from the OECD publication “Teachers and Leaders in Vocational Education and Training”. It provides an overview of the key challenges faced by the vocational education and training (VET) sector in attracting and retaining teachers and leaders with the right skills and keeping their skills up to date. The brief also describes examples of policies and practices put in place in various OECD countries to strengthen teaching and leadership in VET.

Key policy recommendations for strengthening teaching and leadership in Vocational Education and Training (VET)

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|  <p>VET Teacher supply</p> <ul style="list-style-type: none"> Increasing the attractiveness of teaching careers in VET. Providing flexible pathways into VET teaching. Attracting more industry professionals to teach in VET. Improving the monitoring of VET workforce dynamics. |  <p>Innovative pedagogy</p> <ul style="list-style-type: none"> Fostering VET teachers' capacity to use innovative pedagogy. Providing VET teachers with strategic guidance and institutional support for the integration of new technology into VET. Establishing partnerships between the VET sector, industry and research institutions. Raising awareness of the importance of innovation, ICT and soft skills in VET. |
|  <p>VET Teacher training</p> <ul style="list-style-type: none"> Designing effective and flexible initial teacher education and training programmes for VET teachers. Increasing participation in relevant professional development opportunities. |  <p>Strengthened leadership</p> <ul style="list-style-type: none"> Clarifying the roles of VET leaders. Ensuring that VET leaders have access to initial training and professional development opportunities. Improving the attractiveness of the VET leadership role. |

Attracting and retaining qualified VET teachers is crucial to avoid shortages

Teacher shortages may hamper effective VET provision

VET teacher shortages are a significant policy concern in several OECD countries. For example, in Denmark, Portugal and Turkey, one-third of VET school principals reported shortages of qualified teachers, according to data from the 2018 OECD Teaching and Learning International Survey (TALIS). In England (United Kingdom), according to the 2018 College Staff Survey, 53% of further education college principals had found teacher recruitment difficult over the last three years. In the United States, more than half of states reported that they had teacher shortages in one or more VET subjects, according to 2018-19 Teacher Shortage Areas data. Moreover, in many countries the VET teaching workforce is ageing, which could further contribute to shortages. On average across the 26 OECD countries with available data, 44% of teachers in upper-secondary VET

programmes were over 50 years old in 2018, compared to 41% in 2013. VET teacher shortages can damage the stable provision of specific occupational courses and the sustainable supply of qualified workers for associated occupations.

VET teaching needs to be an attractive career option, including for professionals from industry

VET teacher shortages are related in part to the limited attractiveness of the teaching career. For example, teachers' salaries – representing the largest single cost in VET – have a direct impact on the attractiveness of the teaching profession. However, in a number of countries, the profession does not offer competitive salaries compared to industry and/or other educational institutions. High workloads, poor management of VET institutions and lack of career development opportunities also have an effect on job satisfaction, which in turn impacts VET teacher retention. Well-targeted incentives and support are proven to be effective to attract and retain VET teachers. These include bonus and wage incentives for the recruitment of VET teachers in shortage subjects or sectors, induction and mentorship programmes for novice teachers, and attractive career pathways to encourage experienced teachers to stay in the profession while allowing them to move into senior or management-level positions or into other subject areas.

Attracting industry professionals to the VET teaching workforce is another strategy to avoid or overcome VET teacher shortages, while also having the added benefit of bringing in teachers with up-to-date industry knowledge and skills. Several countries set relatively relaxed qualification requirements for teaching in VET, with the aim of recognising the different levels of expertise and experience needed to teach in the sector. Even in countries with relatively strict regulations for teacher qualifications, it is often possible to hire industry professionals without teaching qualifications under certain circumstances. Despite the benefits of recruiting industry professionals into VET, those who do not have the required teaching qualifications often lack pedagogical knowledge and skills and feel unprepared for teaching, and therefore need access to training opportunities to develop those skills.

Countries have put in place various policies and initiatives to guarantee a sufficient supply of VET teachers:

- In the United States, the Teaching to Lead (T2L) programme builds the capacity of new and early-career VET teachers¹ to plan instruction, engage students, manage classrooms, create standards-driven assessments and gain confidence in their craft. T2L participants receive as many as 200 hours of training before, during and after the first year of teaching, including intensive instruction during the summer prior to the first year of teaching, quarterly professional development sessions, on-site coaching visits, and intensive reflection and instructional planning during the summer after the first year of teaching. T2L professional development and coaching is delivered by trainers with teaching and leadership experience.
- In Japan, industry professionals with relevant experience may acquire a special or temporary teacher licence without going through the official exam when they are proven to have relevant skills and experience. Special part-time lecturers, who can be recruited from industry, do not need a teacher licence. A subject-related bachelor's degree with additional credit related to teaching can also lead to a teacher licence.
- In Flanders (Belgium), a two-year trial “dual teaching” project was launched in 2021. Within the project, professionals can teach in VET for a few hours per week on a temporary basis, in fields where schools have difficulty finding qualified VET teachers. These professionals can start teaching after a three-day pedagogical training programme (those who already have a teacher qualification are exempted). Participating professionals continue to receive their normal wage, paid by their regular employer, who receives a lump sum subsidy per teaching hour from the government.

¹ Refers to teachers in career and technical education (CTE).

VET teachers require a complex set of skills, which they need to keep up to date

The skill needs of VET teachers are diverse and increasing

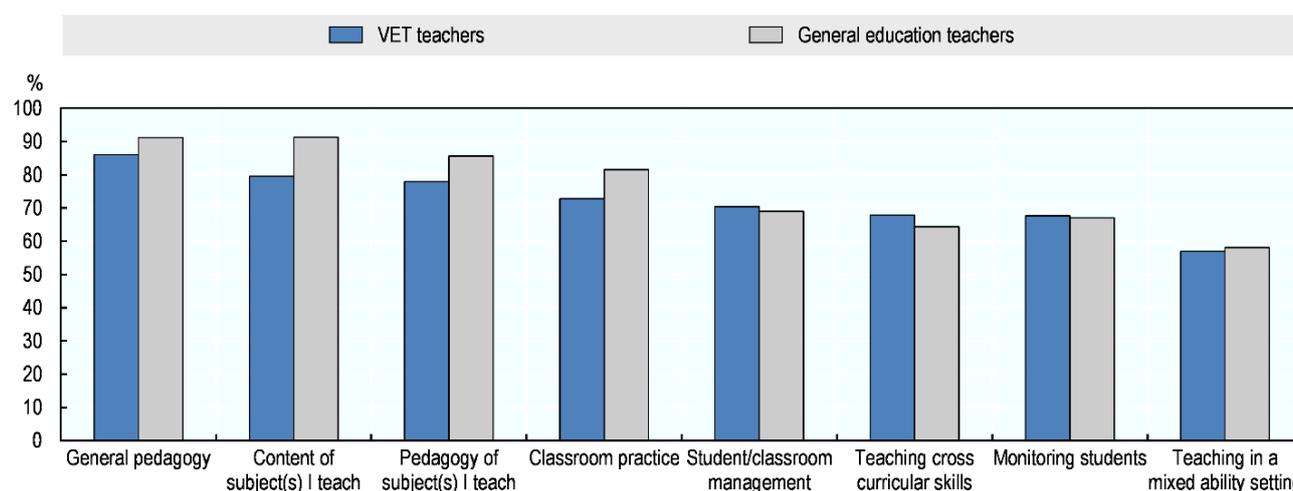
VET teachers need dual competences. On the one hand, they need to have theoretical and practical knowledge of the subjects they teach, and regularly update this expertise in response to changes in technology and working practices. They are often also required to have relevant work experience. On the other hand, they need to have pedagogical skills to effectively share their knowledge and experience with a diverse group of students. A changing environment for teaching and learning, including the increased use of digital technologies for teaching during the COVID-19 pandemic, also requires VET teachers to have a wide range of transversal skills, including digital and soft skills.

Strong initial teacher training and opportunities for professional development are needed

Effectively preparing and developing VET teachers requires well-designed initial teacher education and training and professional development opportunities. However, according to 2018 TALIS data, initial education and training for VET teachers appears to be weaker in developing the required pedagogical skills than training for general education teachers (see Figure 1). Those VET teachers who benefitted in their initial education and training from training in specific teaching responsibilities or tasks (e.g. general pedagogy, subject-specific pedagogy, subject content and classroom practice) are found to feel more prepared for taking up these responsibilities in their teaching. There are several strategies that could help strengthen initial education and training for VET teachers; in particular, the education and training institutions that provide it should keep their curricula up to date, collaborate with VET institutions to offer practical teacher training, and develop research and innovation in pedagogical approaches.

Figure 1. The pedagogical preparedness of VET teachers is lower than that of general education teachers

Share of upper secondary teachers who reported that the following elements were included in their initial teacher training (OECD average)



Note: VET teachers are those who reported in TALIS that they were teaching practical and vocational skills in the survey year in upper secondary programmes (ISCED 3), regardless of the type of school where they teach. The OECD average represents the unweighted average of the six countries/regions (Alberta (Canada), Denmark, Portugal, Slovenia, Sweden and Turkey).

Source: OECD (2019^[1]), TALIS 2018 database, <http://www.oecd.org/education/talis/talis-2018-data.htm>.

VET teachers also need access to opportunities for professional development throughout their career to make sure they keep their knowledge and skills up to date. According to TALIS 2018 data, about eight out of ten VET

teachers across six OECD countries/regions participated in professional development activities in 12 months before the data collection. The most common forms of professional development for VET teachers are participation in courses or seminars and reading professional literature. Nonetheless, a significant share of VET teachers face barriers to participation in professional development due to a lack of support and incentives or conflicts with their work schedule. Even VET teachers who were able to participate in professional development still felt strong barriers that prevent them from accessing training opportunities. In many countries, participation in professional development is voluntary or dependent on senior management decisions, but some countries make it mandatory by law in order to ensure their participation. Making sure that VET teachers receive the necessary training – whether it be on pedagogical, industry or technological aspects of teaching – requires collaboration and co-ordination of multiple stakeholders at different levels, from VET institutions to teachers' and school networks, local companies, universities and relevant associations. Research shows that impactful professional development for VET teachers develops dual competencies, incorporates work-based learning, and sets requirements for quality assurance.

Countries have put in place various policies and initiatives to ensure that VET teachers have the right knowledge and skills:

- In Bavaria (Germany), “university VET schools” combine theoretical and academic teacher training at the university and the practical aspects of teaching training in university schools through close connections between these two types of institutions throughout the initial education and training phase. Moreover, trainee teachers in Germany usually teach in VET schools during their preparatory service while also participating in training and seminars provided by Länder-level teacher training institutes. These help prepare trainee teachers for teaching and help them reflect on their learning and practice in their early careers.
- In Slovenia, professional development is both a right and a duty for teachers by law, and each teacher is entitled to five days of professional development per year. Teachers who participate in specific programmes receive points which are necessary for career advancement.
- In Missouri (United States), a recent law allows VET teachers to count “externship” hours with local businesses as professional development hours. Teacher externship means “an experience in which a teacher, supervised by his or her school or school district, gains practical experience at a local business through observation and interaction with employers and employees”. Teacher externships can be considered the equivalent of the completion of credit hours in graduate-level courses, which may result in salary increases.

New technologies and innovative pedagogies can foster high-quality VET teaching

Innovative pedagogical approaches can support teachers in developing the digital and soft skills of their students as well as their vocational skills

The increasing demand for digital and soft skills in the labour market means that VET teachers need to foster the development of these skills in their students. VET teachers should gain deeper knowledge about how to develop these skills among their students, especially within practical settings, and integrate innovative teaching approaches into their daily practice. Today, there is a need for pedagogical approaches to be learner centred, workplace oriented and inquiry based. To foster soft skills, pedagogy should emphasise active and experiential learning as well as collaborative learning. New technologies such as virtual/augmented reality, robotics and simulators have the potential to foster innovation in VET teaching and learning. These technologies can provide flexible, cost-effective and safe ways to promote learning. They help students develop technical skills, but also soft and digital skills.

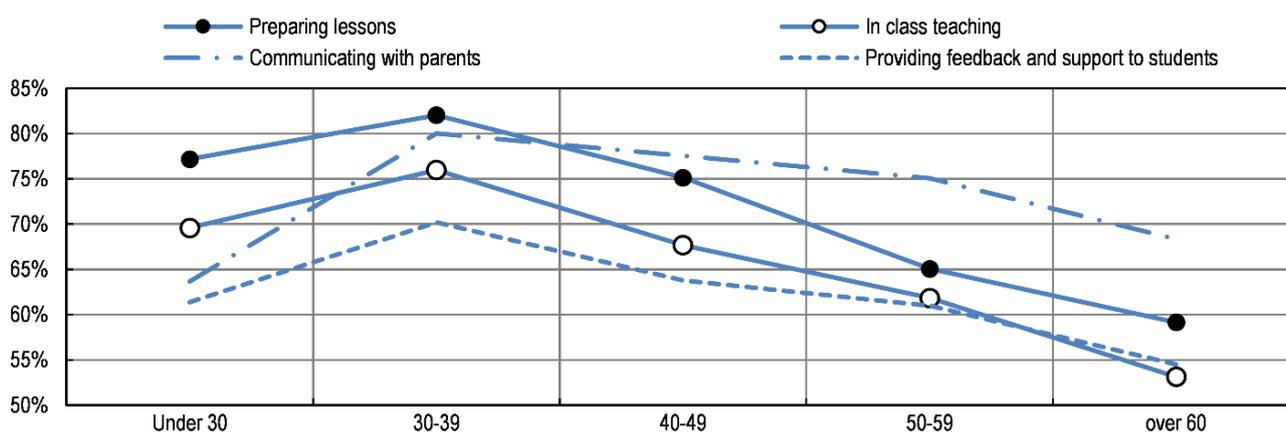
VET teachers need the skills and support to incorporate new technologies and pedagogies in their teaching practices

The use of technology in VET teaching has increased in recent years, and was further boosted during the COVID-19 pandemic. Evidence suggests that VET teachers make more use of digital technologies than general education teachers. Nevertheless, a large proportion of VET teachers are not well prepared to teach using advanced technology in digital environments. According to TALIS 2018 data, 26% of VET teachers in six OECD countries/regions do not feel well prepared to support their students' learning through the use of digital technologies. Moreover, a significant share of teachers – and especially older ones- do not feel confident in the use of digital technologies for teaching, preparing lessons, communicating with parents and providing feedback (see Figure 2). In order to integrate new technologies into their teaching, VET teachers need to receive support to further develop their digital skills and knowledge about technology use in industry. Other support measures can complement professional development opportunities, including peer-learning networks and strategic guidance from institutional leaders on how to integrate new technology into teaching.

Effective use of technology can support teachers in applying innovative teaching methods. The applied nature of VET facilitates the use of practical real-life situations for learning, which implies a greater need for learner-centred pedagogies than in general education programmes. Nonetheless, many VET teachers do not make use of these pedagogies as part of their practice. For instance, only 36% of VET teachers in the six OECD countries and regions with available TALIS 2018 data report presenting students with tasks with no obvious solutions, and only just over half let their students solve complex problems making use of their own approaches. To apply innovative pedagogical approaches effectively, teachers need to be familiar with the theoretical foundations underpinning them, as well as proficient in the use of ICT and specific teaching techniques. Raising awareness among VET stakeholders (especially teachers) about the importance of developing soft and digital skills and adopting new technologies and pedagogical approaches in VET is crucial for fostering a more innovative approaches to VET teaching.

Figure 2. Many VET teachers do not feel confident using digital technologies in their teaching

Proportion of upper secondary VET teachers who are (very) confident using digital technologies, by age (average from respondents in OECD countries)



Note: All percentages refer to the share of high responses (i.e., 4 and 5 on a 5-point-scale). Participation in SELFIE is anonymous and voluntary, thus the data are not representative. Not all OECD countries are available and included in the dataset.

Disclaimer: This aggregated and anonymised data are extracted by the European Commission from SELFIE and do not necessarily reflect an official opinion of the Commission. The Commission does not guarantee the accuracy of the data included in this document. Neither the Commission nor any person acting on the Commission's behalf may be held responsible for the use which may be made of the information contained therein.

Source: SELFIE database (extraction October 2018-December 2020); Hippe, R., Pokropek, A. and P. Costa (2021^[2]), Cross-country validation of the SELFIE tool for digital capacity building of Vocational Education and Training schools, in preparation.

Countries have put in place various policies and initiatives to support VET teachers in the use of new technologies and innovative pedagogical approaches:

- The Danish Government created two Knowledge Centres for Automation and Robot Technology (north and south). These promote innovation in education and industry, supporting the work of VET schools making use of advanced technology such as universal robots, collaborative robots or VR applications for VET teaching. Each centre works with more than a dozen VET schools within their geographical area. They provide VET teachers with teaching material, such as teaching tutorials or short courses in Industry 4.0. Additionally, their specialised facilities provide demonstrations to teachers and students on how robots can be used in the workplace. The centres also lend VR headsets and/or robots to VET teachers, providing them with training materials and face-to-face technical support, so they can operate these technologies and incorporate them into their teaching practice independently.
- In England, the Enhance Digital Teaching Platform – developed by the Education and Training Foundation in 2019 and funded by the Department for Education – supports teachers in England to use technology in their classrooms across the further education and training sector. The platform hosts free, bite-size, certified online self-learning training modules that support innovation in teaching and training to improve learners' outcomes. Some of the modules are specifically designed to help teachers organise activities aimed at developing students' soft skills making use of technology.
- The Swiss Digi-Check tool is a tailor-made assessment designed to help leaders and staff in VET institutions to self-assess the institution's need for digital transformation. The assessment covers topics such as the digital skills of teachers and learners and the framework conditions for a digital transformation. The assessment which includes workshops (one-day) and coaching is led by the Swiss Federal Institute for Vocational Education and Training (SFIVET). Its objective is to take stock of the extent of digitalisation in VET schools, determine the potential for improvement and for change in teaching practices, identify measures for the further development of teachers' digital skills, and provide an overview of other developments in digitalisation.

Leaders of VET institutions play a crucial role for high-quality VET provision, but they are often not prepared for the diverse leadership responsibilities

Leadership is becoming more important for the success of VET institutions

Institutional leaders in VET play a crucial set of roles, from recruiting and developing teachers to ensuring the quality of teaching and learning. They are also responsible for managing resources and engaging employers and other stakeholders. VET leaders can drive organisational changes to build strong, effective and flexible VET programmes and institutions that can adapt to emerging challenges. There are strong linkages between institutional leadership and teachers' motivation, students' well-being and the quality of teaching and learning. Today's institutional leaders are not only expected to strategically plan and administer their institutions, but also to lead pedagogical innovation, build collaboration networks with multiple organisations, and keep abreast of new technological developments in industry. The governance of VET institutions, and how much autonomy and accountability VET leaders have, has an impact on the type of tasks and responsibilities of leaders. Moreover, the management of VET institutions and the division of responsibilities vary greatly depending on the type and size of the institution.

VET leaders need dedicated training opportunities and support measures

VET leaders have not always completed relevant training before taking up their role, nor do they always have access to targeted professional development opportunities. Traditionally, the career path to becoming an institutional VET leader is very clear, taking candidates from the teaching profession and selecting them into middle management and senior leadership roles. TALIS 2018 data show that 90% of leaders of VET institutions across the six OECD countries/regions with available data have a teaching background. However, leaders need

not only to be teaching and learning specialists but also to have a broad range of entrepreneurial and commercial skills. Well-designed initial training and professional development opportunities are important to prepare VET leaders for their role and provide opportunities for up-skilling. A first step would be to set improved and updated definitions of VET leadership responsibilities, which can constitute a key point of reference for those considering becoming a leader, and for those organising their selection and training. For all types of training programmes, the content has to be strongly connected to the characteristics of the institutions and their environment. The inclusion of practical field experience in initial training allows future VET leaders to establish linkages between the theoretical content learned during the course, and the practical problems they will face in their education institutions.

A number of studies show that newly appointed leaders in VET institutions face many challenges, including heavy workload and task management, curriculum and instruction issues, bureaucracy, insufficient resources, resistance to innovation, lack of professional development opportunities, and difficulties in managing interactions with school boards, other teachers and parents. Difficult working conditions in the early years could lead to high attrition, which in turn could contribute to shortages of VET leaders. Different policy levers can be used to ensure that VET leadership is an attractive profession with high-quality working conditions, including the creation of middle-management positions, and the provision of induction programmes and peer-learning opportunities.

Countries have put in place various policies and initiatives to support VET leaders in effectively carrying out their diverse tasks and responsibilities:

- In Spain, VET leaders are required to have five years of teaching experience and have completed a dedicated training course for school leaders. This training course can be offered by the Ministry of Education and VET or the regional governments. The training has a minimum duration of 120 hours and needs to be updated after eight years. With a modular structure (comprising six different modules), it is divided into two parts, theoretical and practical.
- In England, the Department for Education launched the National Leaders of Further Education programme in 2017, to: recruit a team of high-performing leaders, with a track record of delivering improvement both in their own colleges and in working with others; and provide specialist support to struggling further education colleges (based on their most recent official inspection report). Leaders in these institutions are mentored and supported to develop their skills by leaders recruited by the programme. More recently, in 2020, the Department also launched the College Collaboration Fund, which supports colleges to work together to share their knowledge, expertise and best practice, with an approach based on peer-to-peer support – where stronger colleges help weaker ones improve.
- In Chile, the Education Quality Agency has a mentoring programme for management teams, which usually takes place through visits to institutions, but has been done remotely during the COVID-19 pandemic. The Agency conducts three video calls with participants. The first is to identify the main needs in areas such as learning assessment, socio-emotional support, or adapting pedagogical resources. Based on this, the second call covers specific tools and guidance. Finally, the third call is used to share experiences and analyse results.
- In 2015, Norway piloted the creation of a new Teacher Specialist function. The main role of teacher specialists is teaching, but they can carry out other tasks related to their field of specialisation depending on their school's needs and decisions and local initiatives, such as co-operating with universities and university colleges in development projects. The function serves as a professional career path for teachers, offering them new challenges and professional development. Initially, the initiative was aimed at Norwegian language and mathematics teachers, and since 2019 the scheme has been expanded to include teachers in VET.

What can countries do to strengthen VET teaching and leadership?

Teacher supply

- **Increasing the attractiveness of teaching careers in VET** by providing targeted incentives and offering career development support.
- **Providing flexible pathways into VET teaching** by relaxing entry qualification requirements, if required, for industry professionals and at the same time providing flexible means for obtaining necessary teaching qualifications.
- **Attracting more industry professionals to teach in VET** by facilitating flexible work arrangements in VET teaching and increasing collaboration between VET providers and industry.
- **Improving the monitoring of VET workforce dynamics** to allow for the early identification of possible severe teacher shortages.

Teacher training

- **Designing effective and flexible initial teacher education and training programmes for VET teachers** to develop industry knowledge and pedagogical skills along with basic, digital and soft skills.
- **Increasing participation in relevant professional development opportunities**, by engaging and coordinating with stakeholders, giving teachers the means to participate in professional development, and identifying their training needs.

Innovative pedagogy

- **Fostering VET teachers' capacity to use innovative pedagogy**, by providing training opportunities to allow for the regular updating of pedagogical knowledge, facilitate the adoption and use of new technology, and improve their digital skills to support the implementation of these technologies in the classroom.
- **Providing VET teachers with strategic guidance and institutional support for the integration of new technology into VET**, by establishing a shared vision and common goals to integrate digital technology to VET provision.
- **Establishing partnerships between the VET sector, industry and research institutions** to obtain access to the necessary materials and equipment and foster the production of digital resources for VET teaching.
- **Raising awareness of the importance of innovation, ICT and soft skills in teaching in VET** to support the co-ordination of efforts by VET stakeholders to expand the use of technology and innovative pedagogy in VET.

Effective leadership

- **Clarifying the roles of VET leaders**, by creating a definition of their leadership responsibilities to constitute a point of reference for those who are considering leading a VET institution, and for those organising the selection and training of VET leaders.
- **Ensuring that VET leaders have access to initial training and professional development opportunities** by providing training programmes that are easily accessible and aligned with the expected requirements for VET leaders.
- **Improving the attractiveness of the VET leadership role**, including through the creation of middle management roles, and the provision of induction, mentorship and peer-learning opportunities for VET leaders.

Further information

This policy brief is based on OECD (2021), *Teachers and Leaders in Vocational Education and Training*, OECD Reviews of Vocational Education and Training, OECD Publishing, Paris, <https://doi.org/10.1787/59d4fbb1-en>.

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