

Key areas for data improvement



The structure of VET: Programmes with vocational content come in many shades of grey. Data on how VET systems are organised in individual countries can underpin the interpretation of comparative data on specific issues, such as participation, fields of study and expenditure.



Students and participation in VET: Data on participation in VET and students' characteristics provide insights into the target population of VET. Moreover, data on fields of study and occupations are indicators of the occupational skills targeted by vocational programmes, while data on the take-up of progression pathways can be an indicator of the effectiveness of pathways.



Venues for learning: Many VET systems provide work-based learning opportunities. How much and in what ways work-based learning is used within VET programmes has been poorly measured, although these 'details' of implementation are crucial.



Resources for learning: Comparative data can help in understanding how much and in what ways governments, households and employers invest in VET, and allow assessing the cost-effectiveness of different VET systems. Moreover, better data would shed light on the supply of teachers, and on how countries use entry requirements as well as continuing professional development opportunities to ensure that teachers and trainers have the right competences.

Comparative data on VET have many gaps

The international landscape of vocational education and training (VET) is very diverse – more diverse than most other sectors of education systems. There is wide variation across countries in how vocational programmes are organised and delivered, the ages and stages of education at which individuals pursue VET and how VET is funded.

This diversity creates a significant opportunity to exploit cross-country variation to identify the features of VET systems associated with better educational, labour market and social outcomes for graduates. At the same time, comparisons across countries need care: policies and practices in individual countries are embedded in the history and current status of the schooling system, industrial relations and sectors of economic activity.

Country comparisons need good data, and here, in the VET sphere, there are major challenges. Compared to some other policy topics, like higher education or early childhood education and care, comparative data on VET have major gaps. For example, at present the data do not even allow for the number of apprentices in different countries to be counted in a comparable way. Often, international data collections have focused on general

programmes that lend themselves to easier cross-country comparisons, in spite of the fact that nearly half the students enrolled in upper-secondary education across the OECD are enrolled in VET programmes.

The OECD working paper [Improving evidence on VET: Comparative data and indicators](#) identifies both existing and new indicators of VET systems that are suitable for international comparisons, based on current data availability and quality. The paper does not directly fill those data gaps, but instead seeks to establish the dimensions of the gaps and sets out how one might go about filling them. The focus of the paper is on i) the structure of VET, ii) students and participation in VET, iii) venues for learning, and iv) resources for learning.

Ultimately, the reward for data development efforts will be better comparative indicators, yielding clearer signposts of the pathways towards stronger VET systems.

Differences in the way VET is organised make cross-country comparisons hard

The organisation of VET systems, in terms of institutions of delivery, programmes and qualifications makes a big difference to the capacity of the system to respond to changing needs. The challenge is to ensure that VET systems are flexible and responsive to changing labour market needs, without, as an unintended result, creating instability and complexity.

Information on how VET systems are organised in individual countries can facilitate the interpretation of international data on specific issues, such as participation, fields of study and expenditure. These data can provide a picture of the range of vocational programmes offered within a country and how these are connected to other programmes in terms of pathways. The existence of pathways from VET to further learning matters for the attractiveness of vocational programmes. If students (and their parents) perceive VET as a dead-end, those who are not sure about their career plans may want to keep their options open by pursuing academic education.

Programmes with *some* vocational content come in many shades of grey. Data on the balance of occupational vs. general skills targeted by programmes would allow a more nuanced picture of programmes with vocational content. Within vocational programmes, the desirable amount of general content is likely to depend on the purpose of the programme and the profile of its students. Also, data can reveal whether general skills development receives sufficient attention – too little general education can amplify initial weaknesses in literacy and numeracy in a damaging way, particularly when the programme is part of the initial education system. Moreover, the desirable amount of general content in VET programmes is likely to depend on the purpose of the programme, with, for example, programmes being designed as a pathway to tertiary education having a stronger general component.

More and better data on students and participation in VET are needed

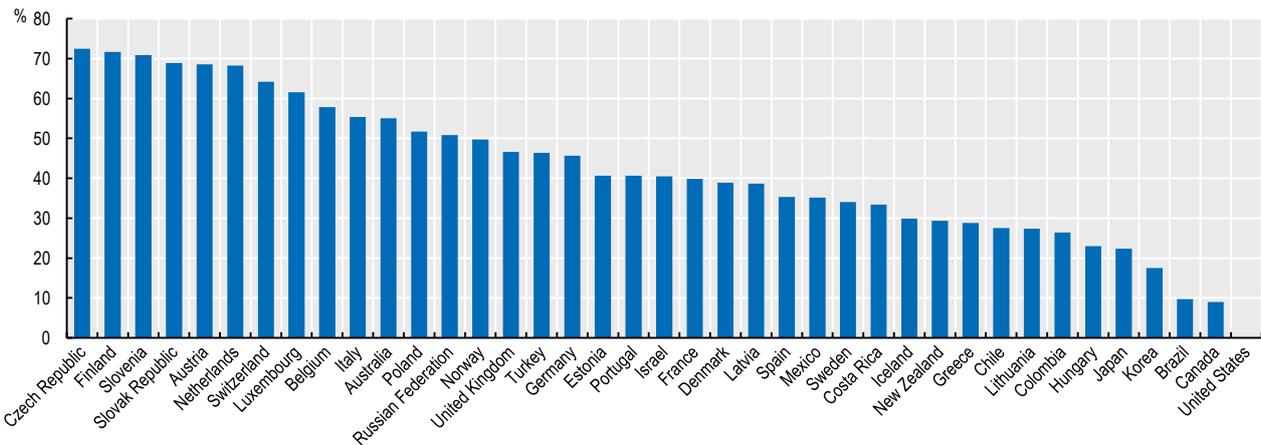
Effective VET systems need to offer high-quality learning options to students from all backgrounds, and avoid being a vehicle for segregation in education and training.

Data on participation in VET shed light on the position of VET within national skills systems. In many countries in continental Europe, Latin America and Asia, VET is one of the options at upper secondary level (ISCED 3), see Figure 1. By contrast, in some other countries (e.g. Canada, the United States), VET is mostly offered at postsecondary level. In many countries (e.g. Austria, Germany, Switzerland), provision is developed at both levels, with postsecondary vocational programmes offering avenues of progression for graduates of the upper secondary VET system.

Data on the age, gender and socio-economic background of students can provide a picture of the target population of vocational programmes in different countries (e.g. teenagers, young people with some labour market experience or older adults). Data on gender and socio-economic background in particular are useful to identify challenges related to equity and measure changes over time.

Figure 1. Participation in VET differs strongly between countries

Vocational programmes' students as a % of all upper secondary programmes



Source: OECD Education at a Glance Database (2019).

Data on the fields of study and occupations are indicators of the occupational skills targeted by vocational programmes. They help assess the alignment of provision with labour market needs, though without capturing the quality of graduates.

Information on the take-up of progression pathways can be an indicator of the effectiveness of pathways. In some countries, there is a well-trodden path from upper secondary VET to postsecondary or tertiary education. In others those routes exist but are long and filled with obstacles, so few people end up taking them and many fall by the wayside – often because of weaknesses in academic skills among VET graduates. In addition, better data on pathways from VET also improve the interpretation of data on outcomes.

The extent and content of work-based learning is poorly measured

Many VET systems offer work-based learning opportunities to student, in recognition of the many benefits that workplace exposure can have for school-to-work transitions and for employer engagement in the overall VET system. First, workplaces can provide a strong learning environment for the acquisition of both soft and hard skills. At work, trainees can learn from skilled employees familiar with the latest techniques and equipment. Even short work placements can motivate students to learn by helping them connect what is taught at school to real work contexts, and allowing them to put existing skills into practice and refine them. Longer work placements allow schools to save on costly equipment and helps relieve teacher shortages.

How much and in what ways work-based learning is used within VET programmes have been poorly measured, although these 'details' of implementation are crucial. Many OECD countries have a predominantly school-based VET system (e.g. Chile, Mexico, Korea, Sweden) or have a sizeable school-based system alongside apprenticeships (e.g. Austria, Ireland, Netherlands, United Kingdom). How work placements are regulated and organised determine whether students will systematically participate in quality-assured placements, allowing them to develop useful skills and connect to employers – or work placements remain an optional add on and of limited value.

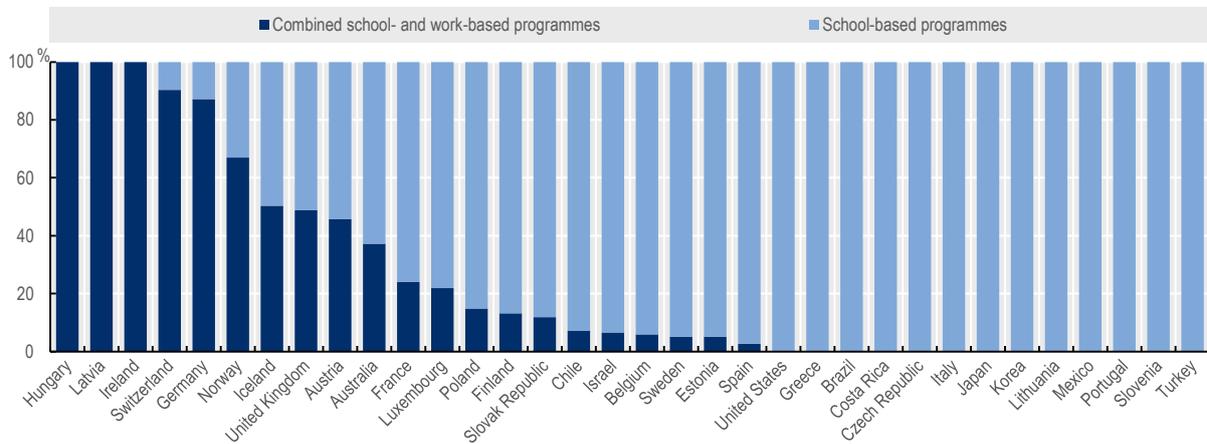
Data on VET generally distinguished between school-based programmes and combined school and work-based programmes (see Figure 2), with the latter being identified as having between 25% and 90% of the curriculum delivered in the workplace. Combined school and work-based programmes include most apprenticeship programmes, but apprenticeships are not separately identified. The 25-90% bracket is a relatively large range – an apprenticeship involving four days a week at work and a two-year programme with one semester in the workplace would both fit this definition-, making it hard to compare different programmes within and across countries.

Cross-country differences in the way apprenticeships are designed and delivered are substantial. Apprenticeship models differ along parameters like apprentice wages, programme duration, how apprentices

split their time between the employer and school/college and funding arrangements. These design features affect the costs and benefits of apprenticeships, and therefore their attractiveness, both to potential apprentices and employers.

Figure 2. The importance of work-based learning varies across countries

% of upper secondary VET students in combined school- and work-based programmes



Source: OECD Education at a Glance Database (2019).

A multitude of financial flows complicates the understanding of financial resources allocated to VET

As for all education and training programmes, financial resources are key in steering the system, but many of the challenges and policy tools are specific to vocational programmes. Financial resources can encourage institutions to offer some programmes rather than others and steer the number of places offered in each occupation. This is essential to ensure the mix of provision is responsive to labour market needs. Funding arrangements need to take into account the targeted field of study, recognising that some programmes are cheaper to deliver than others. Financial tools are also commonly used to encourage employers to offer work-based learning.

Comparative data can shed light on how much and in what ways governments, households and employers invest in VET. This can help compare the cost-effectiveness of different VET systems and approaches to delivery. Various financial flows between the public budget, employers and individuals can be specific to VET – such as subsidies to employers that offer apprenticeships, or employer funded training levies. Data on transfer schemes and amount of transfers are essential to enable meaningful international comparisons of expenditure.

Little is known about VET teachers and trainers

As in general education, the quality of the teacher and trainer workforce is critical to effective learning in vocational programmes. Many countries are facing a wave of retirements among teachers, or expect have one soon – in the majority of OECD countries over a third of the VET teacher workforce are aged 50 and over. Recruiting new teachers is often hard, as schools/colleges struggle to compete with salaries in the private sector. The second challenge is to ensure that teachers have a combination of up-to-date technical skills and pedagogical skills. Full-time teachers in schools/colleges often lack industry experience and opportunities to update their technical skills, while those recruited from industry often lack pedagogical skills.

In the workplace, trainers who supervise apprentices/trainees play a key role. They pass on practical skills and theoretical knowledge, and help apprentices/trainees get used to the codes of the workplace. When a substantial part of the programme is delivered in a workplace (e.g. apprenticeships), the learning experience at work is crucial and many countries offer targeted training for trainers, which can be mandatory (e.g. Netherlands, Switzerland) or optional (e.g. Norway).

Better data would shed light on the supply of teachers and extent of the recruitment challenge across countries – for example giving a picture of the age distribution of different types of teachers in VET. Comparative data on

policy and practice would shed light on how countries use entry and continuing professional development requirements to ensure that teachers and trainers have the right competences.

Strategies for filling key data gaps

The OECD working paper [Improving evidence on VET: Comparative data and indicators](#) puts forward proposals for data development that would strengthen the capacity for comparative analysis. It provides an overview of possible new indicators that are suitable for international comparisons, based on current data availability and quality. Proposals for data development were identified based on two criteria: policy value and cost implications – the best proposals have high policy value and low cost implications. The proposals include four ways of developing comparative data:

- Adjusting guidelines to clarify existing definitions to improve the comparability of existing data and indicators.
- Agreeing on new definitions or taxonomies to support future data collections (e.g. apprentices, categories of vocational teachers).
- Collecting information on policy and practice (e.g. optional or mandatory work-based component in the programme, qualification requirements for VET teachers).
- Collecting new data (e.g. age and gender of current apprentices).

In many cases, the proposed data developments can be implemented building on data and information that has already been collected, at least for some countries. Such a strategy maximises added value in terms of better comparative data and indicators while minimising costs for countries. The proposed data developments may add value in different ways: some would improve the comparability of existing indicators on VET, while others could help construct new indicators or be used for specific research on important VET-related themes.

What can be done to improve the evidence on VET?

Structure of VET

- ▶ *Collect data on the balance of general vs. vocational content of programmes:* This would go beyond the current binary taxonomy of general versus vocational programmes to provide a more nuanced picture of programme orientation. Data on the general component of programmes would measure the attention dedicated to developing general skills within vocational programmes – which is crucial for supporting lifelong learning.
- ▶ *Agree on a definition for professional orientation at ISCED levels 6-8:* This would help fill a major gap in the availability of comparative data of a sector that in many countries is dynamic and plays a key role in developing higher-level occupational skills.
- ▶ *Collect data on the types of qualifications and individual qualifications offered:* An initial mapping of qualification types (e.g. diploma, certificate) would provide a useful indication of the complexity of a country's qualification system. This could then form the basis for the collection of information on how many individual qualifications (i.e. specific to the target occupation) are offered for each qualification type, providing an indication of the breadth or narrowness of some qualification types.
- ▶ *Collect information on institutions that provide vocational programmes:* Information on the institutional setting in which VET is delivered would provide useful contextual information on each country's VET system. Data should be disaggregated according to the ISCED level, the main orientation of the programmes provided (general and /or vocational) and the number of institutions within that type (total and allowing a breakdown by public and private).

Students and participation in VET

- ▶ *Collect data on the use of progression pathways:* The description of VET systems and pathways between general and vocational education and programmes at ISCED 2, 3 and 4 and tertiary education is important to understand progression opportunities for VET students.

Work-based learning

- ▶ *Identify necessary conditions for training to be considered work-based learning:* Clarification of which learning arrangements are included in the work-based component would improve the comparability of data obtained through existing data collections. It would be helpful to identify key necessary conditions to be considered work-based learning.
- ▶ *Collect data on the features of work-based learning:* For each VET programme within a country data might be collected on issues such as the duration of the work-based component, sequencing of work-based and school-based learning and whether the work-based component is mandatory or optional.
- ▶ *Collect data on participation in work-based learning:* This should measure the extent to which work-based learning is used in practice.
- ▶ *Agree on a definition for apprenticeships for use in international data collections:* This might include setting necessary conditions for a programme to be considered an apprenticeship in international data collections. This would include, for example, requirements regarding minimum theoretical programme duration and share of the curriculum delivered in the workplace.
- ▶ *Collect data on the characteristics of apprentices:* Data would need to be collected on characteristics such as age of apprentices, gender, sectoral and occupational coverage, and apprenticeship wages.
- ▶ *Create a mapping of key features of apprenticeship schemes:* Issues covered may include ISCED levels at which apprenticeships are offered, requirements for apprentice supervisors, form of alternation, and legal status.
- ▶ *Support countries in the implementation of a cost-benefit survey of apprenticeships using a common methodology:* Austria, Germany and Switzerland have implemented cost-benefit surveys of apprenticeships, using a common methodology to measure the costs generated by apprenticeships and the benefits yielded to employers. By adapting and using this framework in other countries –while ensuring that the results are comparable–, information on costs and benefits of apprenticeships can be collected and compared across countries.

Financial resources and personnel

- ▶ *Expand the country coverage of private expenditure on VET:* A more complete country coverage of private expenditure on VET in current data collections would improve the comparability of existing data and indicators. Recognising that data availability at national level may be patchy, greater transparency in what is reported would help the interpretation of data.
- ▶ *Create a mapping of financial transfer schemes in VET:* Such a mapping could set out existing transfer schemes, including subsidies to companies that provide work-based learning and levy schemes, including eligibility criteria, and the amount of transfer.
- ▶ *Define categories of teachers and trainers in VET:* These categories might be defined based on the targeted content and the place of delivery, such as teachers of general subjects, teachers of vocational theory, teachers of vocational practice, and trainers in workplaces that deliver work-based learning.

- ▶ **Collect data on teachers in VET and trainers in workplaces:** For each category of teachers and trainers in VET agreed for the purposes of comparative data collection, data should be collected on the number of teachers and trainers and their key characteristics. In addition, it would be helpful to collect data on entry and professional development requirements for each category of teachers in VET and on requirements for trainers.

Further information

This policy brief is based on Kís, V. (2020), “Improving evidence on VET: Comparative data and indicators”, *OECD Social, Employment and Migration Working Papers*, No. 250, OECD Publishing, Paris, <https://doi.org/10.1787/d43dbf09-en>.

Further reading on VET

Vandeweyer, M. and Verhagen, A. (2020), “The changing labour market for graduates from medium-level vocational education and training”, *OECD Social, Employment and Migration Working Papers*, No. 244, OECD Publishing, Paris, <https://doi.org/10.1787/503bcecb-en>.

Musset, P. (2019), “Improving work-based learning in schools”, *OECD Social, Employment and Migration Working Papers*, No. 233, OECD Publishing, Paris, <https://doi.org/10.1787/918caba5-en>.

OECD (2018), *Seven Questions about Apprenticeships: Answers from International Experience*, OECD Publishing, Paris, <https://doi.org/10.1787/9789264306486-en>.

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Co-funded by the
European Union

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