

### Higher vocational and professional tertiary education programmes come in many shapes and forms

As tertiary education has expanded over the past decades, it has also diversified, including programmes with very different designs and functions, such as short-cycle tertiary programmes, professional bachelor programmes, and professional examinations designed to upskill experienced practitioners.

#### Key features of higher vocational and professional tertiary education programmes

- Professional programmes play a key role in the upskilling of graduates from upper-secondary vocational education and training (VET). They are sometimes the only type of tertiary education directly accessible from VET, and in some cases they provide a bridge into “academic” higher education, thus facilitating permeability.
- Past or current work experience is common among tertiary students, especially among those with a vocational upper secondary background.
- Younger adults dominate in programmes providing initial preparation for labour market entry, both short-cycle tertiary programmes and professional bachelor programmes in various European countries. Other programmes, such as professional examinations, are designed to upskill adults with several years of work experience.
- Work-based learning is commonly an element in professional tertiary programmes, but is not always mandatory. Adults who benefited from work-based learning during their tertiary studies tend to have higher employment rates than those who did not, with longer paid work placements leading to the best outcomes in terms of employment.

Short-cycle tertiary qualifications are very often two years full time, with options for articulation into bachelor’s degrees at the same institution (or the same type of institution). Across countries, this category includes associate degrees taught in universities of applied science in Flanders (Belgium), Higher National Qualifications in Scotland (United Kingdom), foundation degrees in England (United Kingdom) and college diplomas in Canada. Some programmes are closely connected to upper secondary education and are provided within the same institutions as upper secondary VET programmes – examples include the Austrian BHS programmes which are a continuation of the three-year upper-secondary programmes in the same colleges. In countries like Austria, Chile, Colombia, Japan, Spain and Turkey, over one third of new entrants into tertiary education enter at the short-cycle level (see Figure 1).

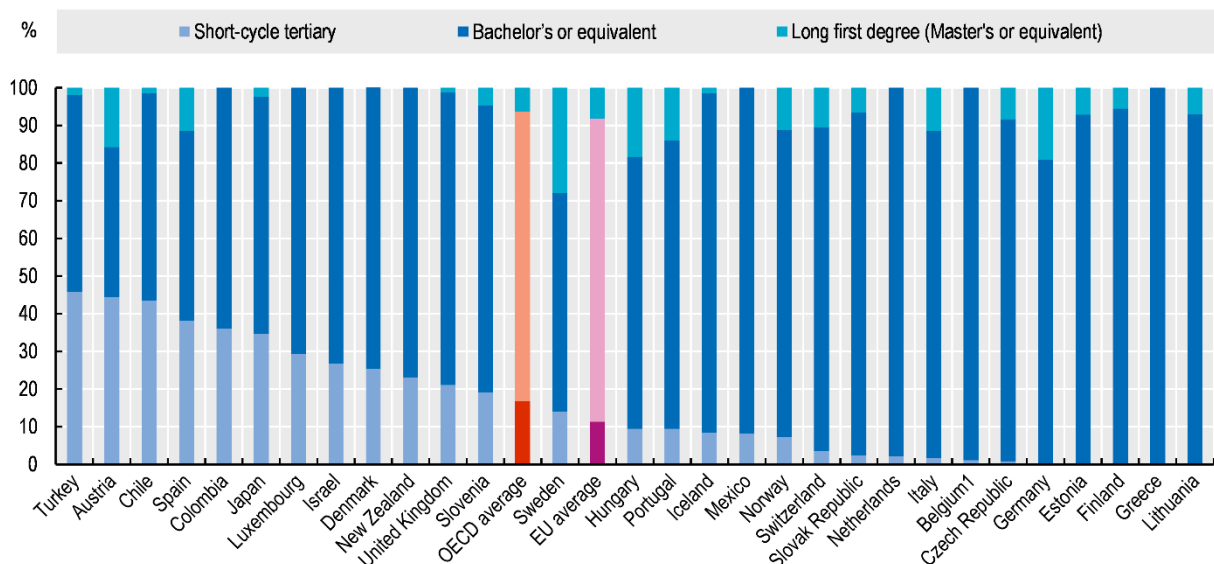
Another common type of professional tertiary programmes are professional bachelor programmes, which involve professional training through a bachelor’s degree. These have seen rapid growth in several countries, where enrolment now rivals or exceeds the level of general bachelor degrees (e.g. Belgium, the Netherlands). While some programmes prepare for a single occupation (e.g. nurse, teacher), many take as their point of departure the applications of a particular type of science – for example food technology or

business management. This means that they provide the knowledge and skills associated with a family of professions or a particular sector, linked to the application of that type of science.

Professional examinations are a distinct form of professional tertiary education and exist in several OECD countries. They are designed to upskill those already working in a profession, typically with an earlier vocational qualification in the field. One of their key characteristics is that they do not require any specific programme of preparation, although having several years of relevant work experience is a common requirement. In several countries such examinations are led by industry, leading to a qualification that is standardised and unique at national level. These qualifications and the (often optional and unregulated) programmes that prepare candidates are delivered at various tertiary education levels, depending on the country and the target occupation.

**Figure 1. Short-cycle programmes are an important part of tertiary education systems in some countries**

Distribution of new entrants by tertiary level



1. Data for Belgium for short-cycle tertiary refer to the Flemish Community only.

Source: OECD (2020<sup>[1]</sup>), *Education at a Glance 2020*, Figure B4.2, <https://doi.org/10.1787/69096873-en>.

Tertiary institutions have also diversified, for example in the very different missions of traditional universities and universities of applied science. Several countries deliver short-cycle programmes in dedicated institutions, which do not provide programmes at higher levels. These are either specialised technical institutions (e.g. business academies in Denmark, vocational colleges in Norway, colleges in Poland) or educational institutions that also deliver upper secondary programmes (e.g. technical and vocational colleges in Austria and vocational secondary schools in the Slovak Republic). Multi-level institutions with an applied, professional focus are common in Europe. These include universities of applied sciences, university colleges and colleges, which are distinct from regular universities. Such institutions have the common characteristic that they undertake research in applied fields and train students for various professions or sectors. But not all countries have established a separate professional tertiary sector. In some countries, including the United States, applied, practically-oriented programmes, like business studies or culinary arts, are taught within multi-purpose institutions alongside programmes focused on single academic disciplines, like physics or history.

## Pathways into professional tertiary programmes

### ***Effective pathways for progression need to be available***

Professional tertiary education typically takes place at career crossroads. The entry routes include general or vocational upper secondary education, an earlier tertiary qualification or years of work experience. For graduates from general upper secondary programmes access is not usually an issue – by definition, they are designed to prepare for higher level studies and grant eligibility to all types of tertiary programme. Vocational programmes, on the other hand, are normally primarily designed to prepare students for employment and vary, across countries and programmes, in their emphasis on preparation for further studies. Yet ensuring strong pathways from upper secondary vocational programmes to tertiary education is important for reasons related to equity, attractiveness and as a tool for raising the educational attainment of the workforce. It would be wrong to say that VET graduates ‘should’ pursue tertiary studies. High-quality VET programmes should equip young people with skills for an entry level job and prepare them for successful careers. However, while not all VET graduates will pursue tertiary studies, that option should be present. VET graduates must also be equipped with the right skills, so that they can not only enter tertiary programmes, but also succeed in them, and use these further learning opportunities to realise rewarding careers. Having opportunities for higher level learning could make VET a more attractive pathway to students at the upper-secondary level, keeping the options for students open and avoiding VET programmes to be or be seen as dead-ends.

On average across OECD countries, 70% of upper-secondary VET students are enrolled in programmes that give direct access to tertiary education. In many countries (e.g. Czech Republic, Estonia, France, Latvia, Lithuania, Norway, Slovak Republic, Slovenia, Sweden) the qualification(s) required for tertiary studies yield access to all types of tertiary education. In some, however, graduates of some (or all) vocational programmes have access to some types of tertiary education only, typically professional programmes, programmes in universities of applied sciences and/or shorter tertiary programmes. Typically, in countries and programmes where vocational upper secondary qualifications do not provide direct access to tertiary education, there are options to gain eligibility (e.g. bridging courses, recognition of prior learning).

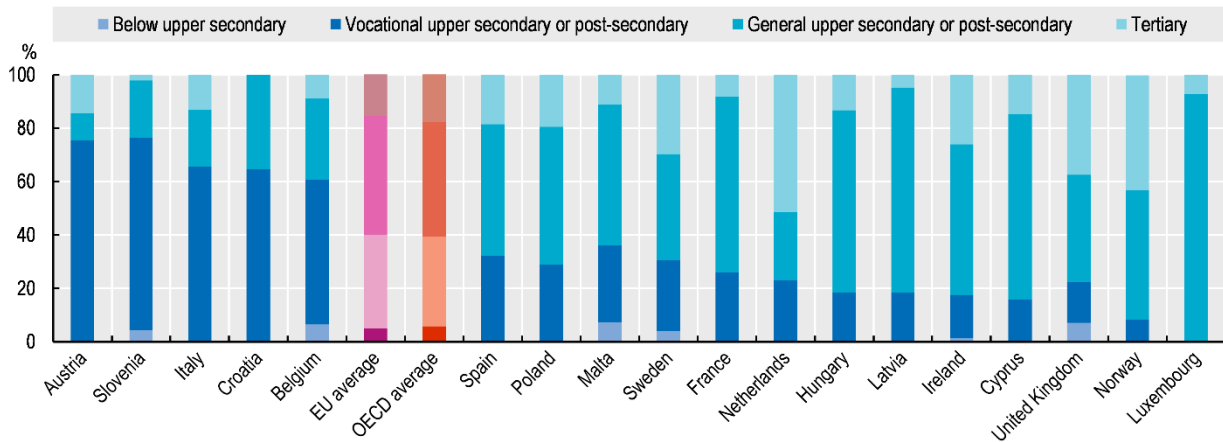
Likewise, graduates of short-cycle tertiary programmes who wish to progress to higher level studies should be able to have learning outcomes from these short-cycle programmes recognised through access and course exemptions. Articulation between short-cycle and bachelor level programmes varies across countries. In several countries some, but not all programmes, have articulation arrangements with bachelor level programmes. But such articulation arrangements often depend on individual institutions, and are not systematic. Sometimes short-cycle tertiary programmes and higher levels of education belong to different sectors in terms of governance, making transitions difficult.

### ***The use of pathways between VET and tertiary education differs between countries***

In some European countries (e.g. Austria, Slovenia, Italy, Croatia), short-cycle tertiary programmes mainly serve graduates of the upper secondary VET system, see Figure 2. But in most countries VET graduates account for a minority of students at this level, and programmes enrol students with a general upper secondary background (and even a prior tertiary qualification). As these data are based on the highest qualification of individuals, the general upper secondary or postsecondary or tertiary category will sometimes include VET graduates who entered short-cycle programmes via these other programmes. In Norway, for example, preparatory courses which may be taken after a four-year vocational programme yield a general upper secondary qualification, and therefore more short-cycle tertiary students may hold a VET qualification than the figure suggests.

**Figure 2. Short-cycle tertiary programmes welcome learners from diverse education backgrounds**

Distribution of educational attainment of students in short-cycle tertiary programmes (2017-2019 pooled)



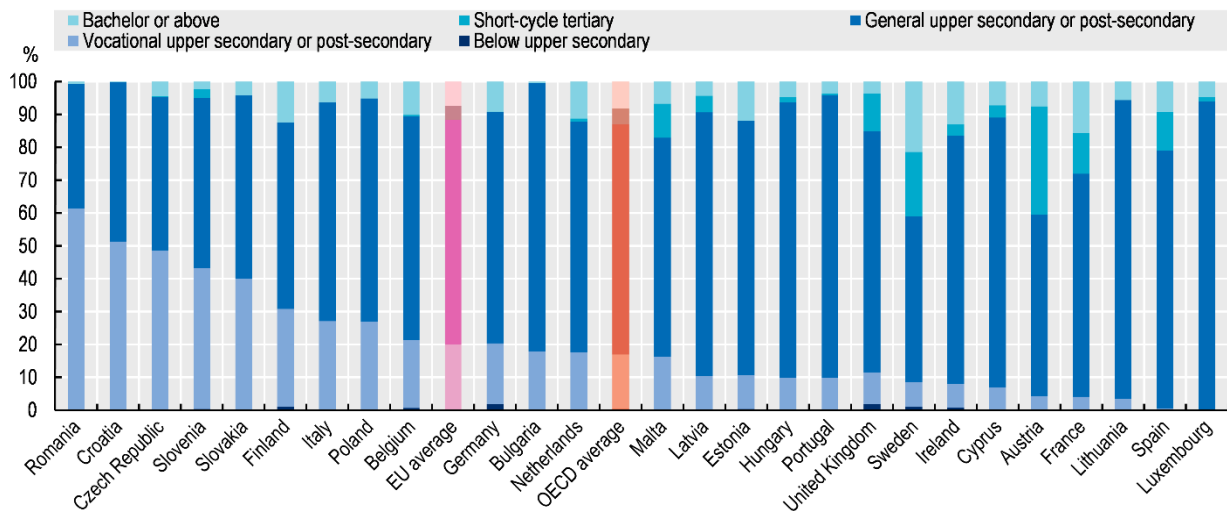
Note: Data include only students aged 34 or less or who obtained their highest qualification up to 15 years prior to the survey. Averages refer to unweighted averages of available countries. Refers to programmes at ISCED level 5.

Source: OECD calculations based on the European Union Labour Force Survey.

At the bachelor level (both professional and general), students mostly come directly from upper secondary education. Pursuing short-cycle tertiary education before entering bachelor-level programmes is common in only a few countries (e.g. Austria, Sweden, Spain, France, United Kingdom), see Figure 3. In some of those countries short-cycle tertiary programmes appear to be used by VET graduates for transition into bachelor level programmes. For example, in Austria, France, Malta, Spain and Sweden short-cycle tertiary graduates comprise over 10% of students in bachelor programmes, while upper secondary VET graduates account for over a quarter of short-cycle tertiary students. The same caveat as above applies to these data, as they are based on information on highest educational qualification only.

**Figure 3. Bachelor students mostly have a general education background**

Distribution of educational attainment of students in bachelor-level programmes (2017-2019 pooled)



Note: Data include only students aged 34 or less or who obtained their highest qualification up to 15 years prior to the survey. Averages refer to unweighted averages of available countries. Refers to programmes at ISCED level 6.

Source: OECD calculations based on the European Union Labour Force Survey.

### ***... and so does the capacity of VET to prepare for tertiary studies***

Achieving high completion rates in tertiary education is a widespread challenge, especially for students with a vocational background. Completion rates are lower for VET graduates than for general upper secondary graduates in several countries, including Belgium (both Flemish and French Speaking communities), Slovenia, Lithuania, the Netherlands, Estonia and Finland. While the data do not allow for a breakdown by programme orientation, the completion challenge is likely to be particularly prominent in programmes that are classified as professional or applied, as in many countries VET graduates more commonly attend such institutions than general upper secondary graduates (in the Netherlands and Finland, for example, VET graduates who pursue bachelor-level studies mainly attend universities of applied sciences).

Weaknesses in academic skills, especially literacy and numeracy, are often viewed as a barrier to participation and successful completion in tertiary programmes. Results from the OECD Survey of Adult Skills (PIAAC) show that in many countries a large share of young people leave the upper secondary VET system with weak basic skills. In almost all countries, the share of young adults with at most an upper-secondary or post-secondary non-tertiary VET qualification who have weak literacy skills is higher than among those with a general qualification at the same level. This means that successfully engaging VET graduates in tertiary studies requires targeted measures in some countries, such as screening for weaknesses in basic skills and offering remedial courses to those who need it.

### ***Employment spells between different levels of education are common among learners with a VET background***

Progression between different levels of education sometimes involves spells of employment between programmes, or parallel to studies. Across different countries and programmes, the extent of work experience and its nature varies greatly. Work experience may build on an earlier (typically vocational) qualification and, as a person's career progresses, lead into an advanced programme to deepen or broaden skills linked to their occupation. This is common among adults pursuing master craftsman qualifications and other professional examinations, which are open only to experienced professionals who typically continue working while preparing for their examination. In other cases, individuals have work experience that does not build on vocational skills, either because the person does not have a vocational qualification or pursued employment unrelated to their qualification.

Among short-cycle tertiary students it is relatively common to have employment experience, especially among students with a vocational upper secondary background. On average across European OECD countries, over 60% of short-cycle tertiary students with a VET background either work parallel to their studies or have worked in the past - compared to only just below 50% of students with a general education background. Likewise, work experience among bachelor students is more common for students with a VET background than for those with a general education background.

## **The profile of learners in professional tertiary programmes**

Programmes with professional orientation are often viewed as a particularly effective means of attracting non-traditional learners – learners who are first in their family to pursue tertiary education, those from lower socio-economic backgrounds or with a migrant background, as well as adult learners. The applied and practically-oriented content of programmes is likely to be more appealing to non-traditional learners, especially when the programme is connected to their prior vocational qualification. Moreover, professional programmes may be easier to access for non-traditional learners. Sometimes the academic entry barriers are lower, and for some learners professional programmes are the only easily accessible form of tertiary education. Professional programmes are sometimes also more affordable. For example, in some countries,

like the United States and Korea, tuition fees are lower for short-cycle tertiary programmes than for bachelor or master programmes.

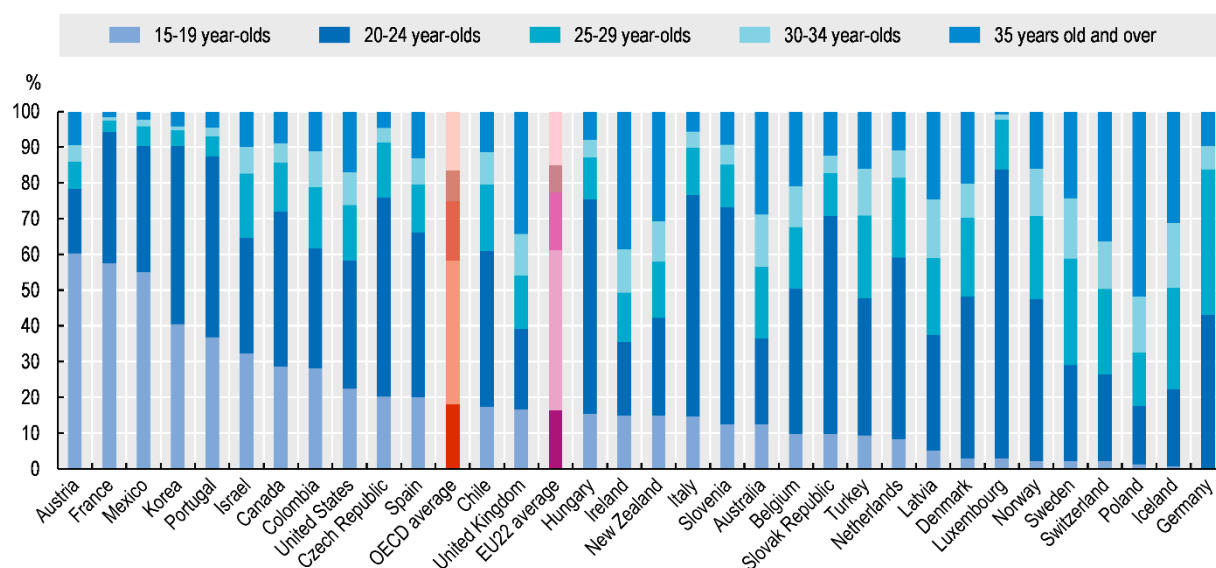
### **Some professional tertiary programmes attract older learners**

The age profile of learners in professional tertiary education programmes reflects the different functions these programmes play in national skills systems. In Austria, for example, short-cycle tertiary programmes are in effect a continuation of upper secondary VET and are delivered within the same colleges, and therefore learners in these programmes are relatively young (see Figure 4). Conversely, in Germany, adults aged 25 or more represent the majority of short-cycle tertiary students, as the master craftsman programmes in trade and technical schools provide upskilling to professionals with an upper secondary vocational qualification and several years of work experience.

The same is true at the bachelor level. In countries like Korea, Belgium, Slovenia, France and Lithuania “professional bachelor” programmes provide initial preparation for a first skilled job and enrol mostly students aged 24 or less. At the other extreme, in Switzerland and Germany most students are aged 25 or more, reflecting the role of professional examinations at this level, which build on several years of work experience and upskill existing professionals. Among the countries that distinguish professional from academic programmes, students in professional programmes at bachelor level tend to be older than those pursuing academic programmes. In many countries the difference is relatively small (one or two years).

**Figure 4. The age profile of learners in short-cycle programmes reflects the role of these programmes in the tertiary education system**

Age distribution of short-cycle tertiary students (2018)



Note: Data for Belgium (French Community) exclude participants in adult higher education.

Source: OECD calculations based on UOE enrolment data collected for *Education at a Glance 2020*.

Adult learners may want to combine their studies with work and/or care responsibilities and may therefore favour part-time studies. Part-time enrolment is much more common in short-cycle tertiary programmes than in bachelor programmes across OECD countries. In Switzerland, for example, nearly all participants in short-cycle tertiary education pursue part-time programmes (although this sector is a very small part of the tertiary sector). Likewise, among countries that report data separately for professional and academic

programmes at the bachelor level, part-time enrolment is much more common in professional programmes. In some countries part-time enrolment is systematically combined with relevant work experience. In Denmark, for example, part-time professional programmes (at all tertiary levels) require both a specific entry qualification and at least two years of relevant experience.

### ***Professional tertiary education provides opportunities for learners from different socio-economic backgrounds***

Comparative data on the socio-economic background of students in professional programmes are limited, and even at national level data appear to be scarce – a European study of short-cycle tertiary education (Kirsch and Beernaert, 2011<sup>[2]</sup>) found that while there was a widely held view among ministries and providers across different countries that short-cycle tertiary programmes contribute to widening participation in higher education and promoting social cohesion, relevant data in support of this proposition were rarely available. Data from the OECD Survey of Adult Skills (PIAAC) suggest that professional programmes play an important role in allowing individuals to acquire a tertiary qualification first in their family. The share of adults with at least one tertiary-educated parent is lower among short-cycle tertiary graduates than among adults holding a bachelor's degree or equivalent in all but two countries (and in those countries the difference is very small).

## **Ensuring the relevance of professional tertiary programmes**

### ***Engaging employers can help make programmes more responsive***

Close connections with the world of work are important for all tertiary programmes, especially for programmes with professional orientation. A series of case studies of professional tertiary education in Europe found that strong links with social partners represents one of the strengths of this sector. Strong employer engagement appears to be facilitated by looser regulation compared to upper secondary VET, making it easier to adapt provision to changing needs, and employer interest in the type of skills provided by this sector (Ulicna, Luomi Messerer and Auzinger, 2016<sup>[3]</sup>).

The institutional framework underpinning employer engagement typically includes bodies at national and regional level (sometimes involving different bodies for different economic sectors) and/or at the level of individual institutions. At national (or regional or sectoral) level, advisory committees commonly include social partners and provide strategic guidance regarding policy development and implementation in the light of skills needs. Examples include the Advisory Council for Technical Professional Training in Chile, the Assembly of Councillors of state-owned higher education institutions in Estonia, and the National Council of Vocational College Education in Norway. Several countries also require individual institutions to have systematic engagement with employers through institutional education boards or committees. For example, in Denmark each provider institution is required to have employer panels or education committees with labour market knowledge and in Estonia institutions must include employers in the committees associated with each study programme.

At the local level, employers and practising professionals also often play an important role in the delivery of professional programmes. In several countries professionals often work as regular teaching staff or guest lecturers (e.g. France, Israel, Italy, Luxembourg, Norway, Spain). More directly, employers may also deliver training themselves through work-based learning, when they host interns or apprentices (see below). Finally, in some countries industry representatives take an active role in the design and delivery of final assessments. Their engagement is fundamental, for example, in professional examinations – in Switzerland, employers are involved through their professional organisations, which set up examination regulations and employers participate in examinations as examiners.

### ***Work-based learning is common in professional tertiary education***

Workplaces provide a strong learning environment for the acquisition of both technical skills and generic employability skills, as students learn from real life problems and from professionals familiar with the latest technologies and working methods. Work-based learning in professional programmes may take different forms. Internships, understood here as work placements of several weeks or months, are commonly used in professional programmes. Dual tertiary programmes are also increasingly common across OECD countries, although the nomenclature varies from one country to another. They include, for example, dual University of Applied Sciences programmes in Austria, *Master en Alternance* in Belgium (French Community), *alternance* arrangements in France, dual higher education in Hungary, dual higher VET in Spain, degree apprenticeships in England and graduate apprenticeships in Scotland. A third form of work-based learning is the requirement to have relevant professional experience – past work experience, current employment relevant to the targeted programme or both. For example, professional examinations often require several years of work experience, depending on the targeted qualification.

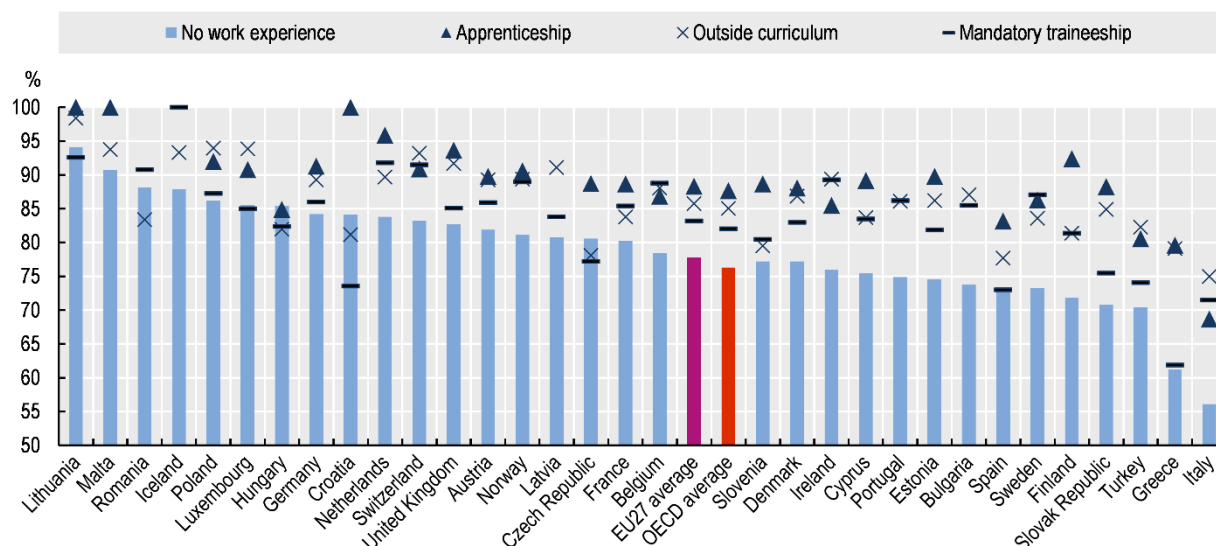
In short-cycle tertiary education work-based learning is very common, either a mandatory component for all students, or more selectively, in some programmes and for some of the students. Several countries have made work-based learning mandatory for all students and specify its minimum duration: associate degrees in Belgium (both French and Flemish community), business academy programmes in Denmark, higher technical institutes in Italy, short-cycle programmes in Slovenia and higher VET in Spain. In several other countries work-based learning is used in short-cycle tertiary programmes, but not necessarily in all programmes and institutions. Mandatory work-based learning is less common in programmes classified as “professional” at the bachelor level, and many countries report using it for some students, with variation across programmes and provider institutions.

Students who had work experience during their studies tend to have higher employment rates than those who did not (see Figure 5). Those who pursued apprenticeship-type programmes have the highest employment rates. Mandatory traineeships are also associated with better outcomes than programmes without work experience. Pursuing work even outside the curriculum is also linked to better outcomes than not having any work experience while studying, possibly because such experience may develop more general employability skills, such as teamwork. Some national studies also looked at the outcomes associated with the use of work-based learning. For example, a recent study found that graduates who pursued a dual pathway to obtain a professional qualification in France were more likely to be employed in a job relevant to their qualification and were more often employed by the company where they participated in work-based learning than those who pursued the mainly university-based option (with an internship) (Couppié and Gasquet, 2021<sup>[4]</sup>).



**Figure 5. Young adults with work experience during their tertiary studies have stronger labour market outcomes**

Employment rate by work experience during tertiary studies, 25-34 year-olds (2016)



Note: Low reliability due to small sample sizes for: Apprenticeship: Croatia, Estonia, Malta; Mandatory traineeship: Croatia.

Source: European Union Labour Force Survey, 2016 ad hoc module on young people on the labour market.

## Improving comparative data on higher vocational and professional tertiary education

Huge gaps remain in comparative data on higher vocational and professional tertiary education because there are no internationally agreed definitions for programme orientation at tertiary level. For the short-cycle tertiary level, data are collected based on the agreed definition of “vocational” (used at lower levels of education). But for programmes at the bachelor level and above, countries that provide data do so based on their own national definitions and programmes preparing for the same professions (e.g. teachers, nurses) are classified differently by countries. Some countries choose not to provide data in the absence of agreed definitions.

The professional-academic dichotomy is problematic, because some programmes are both “academic” (in the sense of highly demanding intellectually) and “professional” (in that they prepare for a particular profession) – examples include teachers and medical doctors. Another grey zone includes programmes that prepare for a broader economic or occupational sector (e.g. business studies, food technology), these are also classified differently by different countries. One option is to move away from the academic-dichotomy and distinguish between programmes focused on an academic discipline (e.g. history, physics) and those that prepare for a single profession (e.g. nurse, teacher) or an occupational or economic sector (e.g. business studies).

Internationally agreed definitions for the orientation of tertiary programmes will be useful for getting a better picture of the landscape of higher vocational and professional tertiary education programmes, their purpose and target audience. Additional indicators could complete this classification, to capture variation in the delivery of programmes and their quality. Examples of such indicators are the share of practical training (in real or simulated work environments), the share of work-based learning (in real workplaces) or the engagement of employers.

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