

## **2 Improving access and quality of vocational education and training in Thailand**

---

This chapter looks at access to vocational education and training (VET), both in general terms and for certain population groups. It discusses important barriers to access, related to the image, quality and organisation of VET. It zooms in on particular challenges faced by students from disadvantaged backgrounds, as well as differences in access to quality VET provision by gender, age and region. The chapter provides recommendations for making the Thai VET system more attractive, of better quality and more equitable.

---

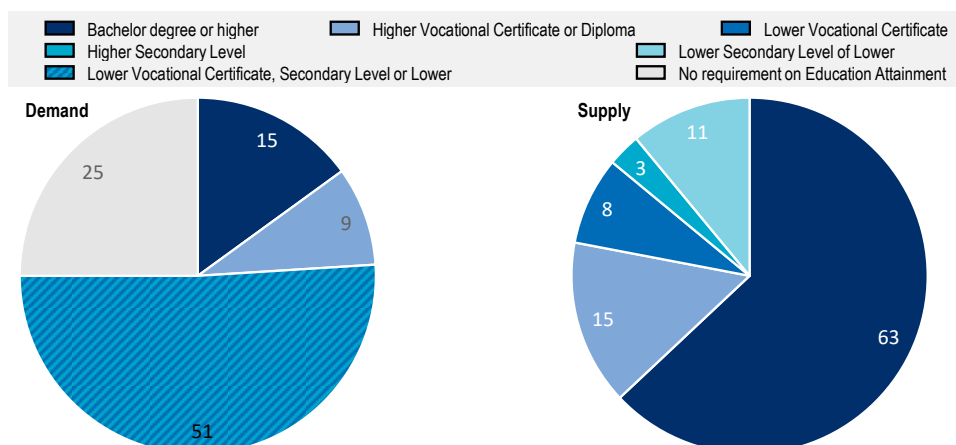
## Improving access and quality

Many observers of the Thai VET sector argue for an expansion of its size. As discussed in Chapter 1, the share of the workforce with vocational certificates and vocational diplomas remains relatively low. According to the data available, currently about 35% of Thai students study a vocational programmes at the upper secondary level, which is lower than the OECD average of 37% and remains below the target set by the Thai government to increase the proportion of vocational students relative to general education ones to a ratio of 60:40 (Ministry of Education, 2013<sup>[1]</sup>). Although there are no “one-size-fits all” approach regarding what should be the adequate size and shape of a country’s VET system, reports of skills shortages,<sup>1</sup> as discussed in Chapter 3, and Thailand’s targets for VET enrolment, imply that the system needs to enrol more students.

Data on labour demand from the National Statics Office’s Establishment survey show that employers are mostly looking for workers with low to medium-level qualifications, i.e. upper secondary level or below (including vocational certificates) (see Figure 2.1). This level represents 51% of demand, while the demand for bachelor’s level or higher, and higher vocational qualifications only account for 15% and 9%, respectively. By contrast, data on the estimated supply of graduates shows that 63% of graduates have a bachelor’s degree or higher, 15% have higher vocational qualifications, and 22% have low to medium-level qualifications. While there is clearly an oversupply of tertiary-educated workers, data by field of study show that the supply of science, technology, engineering, and mathematics (STEM) graduates falls short of the demand for these graduates, signalling that field of study choice is not well-aligned with labour market needs (Chantapong and Lertpienthum, 2018<sup>[2]</sup>). This also suggests that the mix of provision and the content of VET programmes may not have adjusted fast enough to labour market evolutions. Despite there being shortages of technical skills, both students and parents showed a preference for a university rather than vocational education. The demand, from both students and their parents, and employers, for academic credentials may be excessive, especially when these do not offer better labour market prospects than VET ones. One of the reasons may be that students may seek higher social status through university qualifications (Chalapati and Chalapati, 2020<sup>[3]</sup>). There are some reports also of employers preferring academic degrees from higher education institutions. The topic of mismatch and shortages is further discussed in Chapter 3.

**Figure 2.1. The supply of highly qualified graduates exceeds demand**

Demand and supply of labour by education level, 2013 and 2018 respectively



Source: Chantapong and Lertpienthum (2018<sup>[2]</sup>), Skills Mismatch: A Challenge for Education 4.0, [https://www.bot.or.th/Thai/ResearchAndPublications/articles/Pages/Article\\_24Jul2018.aspx](https://www.bot.or.th/Thai/ResearchAndPublications/articles/Pages/Article_24Jul2018.aspx).

To have more students go into upper secondary VET programmes, and onto technical jobs in the labour market, VET has to become more attractive for students in initial education, while also cater to the needs of adults who might have already gone through some education and training, and have gained experience in the workplace. The promotion of VET through the idea that “vocation creates the nation (Thailand Development Research Institute, 2019<sup>[4]</sup>) and the aspiration to increase the proportion of students entering VET in itself can help to increase the attractiveness of VET – by opening new programmes and institutions. But in a system where students can choose to pursue general education options, increasing the proportion of students who enter VET will also depend on improving the status of VET.

Increasing access to VET can be achieved through multiple channels. First, for VET programmes to be more attractive, the system needs to ensure that vocational students can move onto further learning opportunities, both vocational and general education ones, so that VET is not perceived as a dead-end option. Second, institutional fragmentation has to be reduced, to increase co-ordination and coherence and to make the system more transparent and easier to navigate. Third, issues regarding the quality of learning and teaching, and the relevance of the programmes need to be addressed, to improve the image of, and consequently participation in, VET. Fourth, efforts are needed to increase access for certain underrepresented groups (including adults), and making sure that opportunities are of the same quality in all regions.

### ***Improving pathways between vocational and general education programmes, including upwards***

*Moving between VET and general education programmes, vertically, is possible in theory*

A lack of interest in vocational education among young Thai people with high academic potential could, at least in part, be due to the fact that VET programmes are seen as a dead-end, not allowing access to further education opportunities (Thailand Development Research Institute, 2019<sup>[4]</sup>). However, in principle, pathways are open, both toward higher-level vocational programmes and general education programmes. Upper secondary vocational graduates can apply to academic university programmes like their general education peers, with the exception of programmes in some health faculties (e.g. dentistry, pharmaceutical and veterinary science).

There is also the possibility for students to progress to postsecondary VET programmes. At that level, students can pursue vocational diplomas, after having completing either general or vocational upper secondary education. There are also bachelor's degree in technology or operation, in which students with a vocational certificate can enrol and which is shortened to two years (instead of four) for those who have a vocational diploma. Postsecondary VET programmes seem to have become more popular with respect to their academic equivalents (as discussed in Chapter 1), which is a strength. Assessed in terms of number of students, Thailand appears to have a fairly well-developed postsecondary VET sector, unlike many other middle income countries. In many African countries, for example, the focus in recent decades has been more on access and participation in primary and secondary education, focusing on academic programmes, rather than on the development of vocational tracks, especially at the postsecondary level.

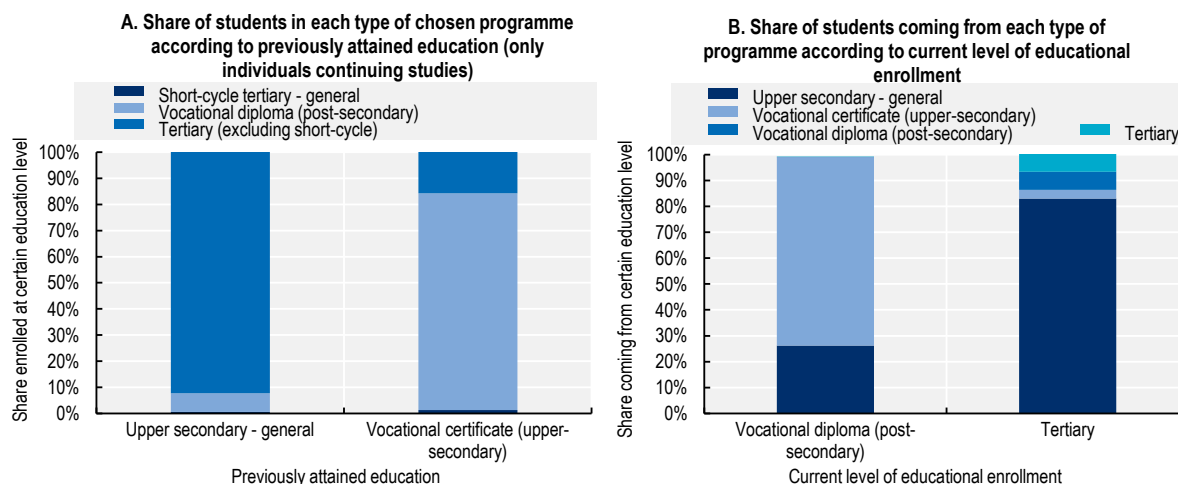
The Thai National Qualification Framework (NQF) helps to provide structure in the education and training landscape and the various pathways. It encompasses VET and postsecondary (including higher) education under the different ministries and agencies and locates programmes in a common sequence of levels. Recently, the NQF committee has developed prototypes to link occupational standards required by employers to VET curriculum and teacher training, learning material and equipment (Office of the Education Council, 2021<sup>[5]</sup>). Although no panacea, in principle, a NQF can make vocational education and training systems more transparent, so that the value of different qualifications can be more clearly recognised by students, employers and other stakeholders. If frameworks are underpinned by a strong methodology for allocating qualifications to levels, supported by key stakeholders, and backed by

complementary measures to unify the vocational and professional system and improve transitions, they can facilitate lifelong learning, and improve access to higher levels of education (OECD, 2010<sup>[6]</sup>). There is an effort to develop linkages and comparisons with the ASEAN Qualifications Reference Framework (AQRF). As such, every agency and institution providing VET programmes is mandated to use the National Vocational Qualifications Framework and seek approval from OVEC (Goncalves, 2019<sup>[7]</sup>).

*These pathways are not widely used in practice*

Despite formal pathways existing in theory, there are concerns that they are hard to navigate in practice. A transition from general secondary to a technical education programme is uncommon, and so is progression from VET into general or academic programmes. Data on the previous education level of current students show that 83% of students from upper secondary VET who continue to postsecondary education are in vocational diploma programmes and only 16% in tertiary education programmes (see Panel A of Figure 2.2). Looking at the same data from a different angle, only 25% of current vocational diploma students come from general upper secondary education and 73% from vocational certificate programmes (see Panel B of Figure 2.2). For current students in tertiary education programmes, 82% come from general upper secondary education, and only 6% and 3% from vocational diploma and certificate programmes, respectively. More and better data are needed to analyse the extent to which VET graduates successfully continue in further education. As discussed in Chapter 3, tracer studies can be a tool to analyse education and labour market outcomes of VET graduates.

**Figure 2.2. Few students from upper secondary VET programmes progress into general education**



Note: Panel A shows for all students with a certain level of education (i.e. upper secondary general or vocational certificate) who are currently enrolled in further education, the level of education in which they are enrolled. For example, the left bar shows that of all students with an upper secondary general qualification who are still in education, more than 90% are in tertiary education. Panel B shows for all students currently enrolled in a certain level of education (i.e. vocational diploma or tertiary), the highest level of education that they have already attained. For example, the left bar shows that of all students currently enrolled in vocational diploma programmes, less than 30% have a general upper secondary degree as their highest qualification.

Source: Authors' calculations using 2018 Thai Labour Force Survey data, National Statistics Office (2021<sup>[8]</sup>), Thai Labour Force Survey, <http://www.nso.go.th/sites/2014en/Pages/Statistical%20Themes/Population-Society/Labour/Labour-Force.aspx>.

Few graduates from the different VET programmes proceed to further programmes at a higher level, and many of those who do continue in education do so at the same level, and do not receive exemptions for the overlapping coursework that they have already done (Chalapati and Chalapati, 2020<sup>[3]</sup>), leading to duplication and an important opportunity cost. This is also due to the fact that higher education institutions are selective and prefer to take students with a general education background. As a result, entrants are overwhelmingly from general education: only few students in tertiary education come from a

VET background (9%, see Figure 2.2). This contrasts with experience in some other countries such as Switzerland and the Netherlands, where half or more of the students in universities of applied science come from VET backgrounds (OECD, 2014<sup>[9]</sup>).

This means that upper secondary VET programmes are still too often seen, and turn out to be, routes to the labour market, but not to further learning opportunities, which hinders their attractiveness. In Thailand as elsewhere, VET graduates need to have a full opportunity to progress into further and higher education. But at the same time it means that the VET track will need to be demanding academically, so as to prepare students for higher education (OECD, 2014<sup>[9]</sup>), or that bridging programmes need to be put in place (see Box 2.1). In Latvia for example, a one-year bridging programme enrolled around 15% of upper secondary VET students (OECD, 2016<sup>[10]</sup>). The positive experience in some fields in Norway is also relevant, noting that this also involves some adjustment of first year university programmes to ensure that VET graduates receive extra support to develop their theoretical knowledge.

### **Box 2.1. Creating links between vocational upper secondary and higher education, with bridging and hybrid programmes**

#### **Austria – Preparatory courses for higher education entry exams**

In Austria, graduates from the dual system and 3-4 year VET schools can enter universities and *Fachhochschulen*, by completing special exams (*Berufsreifeprüfung*). Candidates for this special exam usually attend preparatory courses run by the *Wirtschaftsförderungsinstitut* (WIFI) or *Berufsförderungsinstitut* (Bfi). Since 2008, apprentices have the option of pursuing a double degree (*Lehre mit Matura*), combining the occupational qualification and the special higher education entrance degree. In 2018, around 6% of apprentices opted for this combined degree. For certain study programmes, VET graduates can conduct a *Studienberechtigungsprüfung*, i.e. a special exam that grants access to the individual programme.

#### **The Netherlands – Initiatives to prepare VET students for higher education**

In the Netherlands, many vocational education graduates at the upper secondary level (MBO-4) continue to higher education, as they have direct access to universities of applied sciences (HBO). Five years after graduation, 45% of them have obtained a HBO degree. However, the transition can be difficult, with a substantial share of students dropping out in the first year or changing programmes. In recognition of these difficulties, several education institutions have put in place initiatives to better prepare the VET students for higher education. These include extra lessons or projects and joint initiatives between the VET institutions and higher education institutions.

#### **Norway – One-year bridging course**

In Norway, graduates from the vocational track at the upper secondary level have the option to continue to higher education after a one-year bridging course. This bridging course covers six key academic subjects: Norwegian, English, Mathematics, Natural Sciences, Social Sciences, and History. A similar pathway is also available for adults aged 23 or above who want to enter higher education without a qualification and who have at least five years of work experience (or a combination of education and work experience). For certain higher education programmes, mainly in the engineering field, entry is allowed for vocational qualification holders without going through the bridging programme. These students might have an alternative first year in university, often with more theoretical subjects instead of the more practical parts of the programme compared to the other students. Experience from the engineering programmes, which first started accepting VET graduates, have been successful. Reports state that companies often find students with a VET background to be more attractive. Accepting VET graduates into engineering degree programmes is now an important tool used to ensure that Norway trains enough engineer.

### **Brazil – Hybrid upper secondary programmes combining VET and general education**

In Brazil, 11% of all upper secondary students opt for VET programmes. The most common broad field is business, administration and law with 27% of upper secondary vocational graduates earning a qualification in this field (OECD, 2020<sup>[11]</sup>). There are two types of upper secondary VET provision combine general and vocational course content. The first one ('integrated') offers academic and vocational courses as one programme in the same secondary school. The second one ('concomitant') allows general upper secondary students to pursue a complementary technical programme at the same time, usually in a separate school. Students hold two qualifications, one vocational, and one academic, which allows them to transition more smoothly either to the labour market or to higher education.

### **India –Postsecondary VET as a springboard to university programmes**

In India, 'polytechnics', 'institutes of technology' and other 'colleges of engineering', usually under the auspices of the All India Council for Technical Education (AICTE), offer three-year diploma courses, at the postsecondary level. Historically, their work was focused in the engineering area, but in recent decades many polytechnics have also offered courses in other disciplines, although still mostly technical, as in electronics and computer science. The intention is that graduates can provide mid-level engineering skills, between technicians and engineers. In the context of engineering programmes where women are underrepresented in almost all countries, a number of the polytechnic institutions are for women only. The three-year diploma programmes are intended for students after school year 10 (typically aged 16). Polytechnics also offer post-diploma and advanced diploma programmes of one or two years' duration in different specialisations. As the polytechnics fall under the same ministerial responsibility as higher education, credit recognition and progression to university programmes, in engineering at least, is facilitated.

Source: Vandeweyer and Verhagen (2020<sup>[12]</sup>), "The changing labour market for graduates from medium-level vocational education and training", *OECD Social, Employment and Migration Working Papers*, No. 244, <https://dx.doi.org/10.1787/503bcecb-en> ; Musset et al (2019<sup>[13]</sup>), *Vocational Education and Training in Estonia*, <http://dx.doi.org/10.1787/g2g9fac9-en> ; UNESCO (2018<sup>[14]</sup>), "Pathways of Progression: Between Technical and Vocational Education and Training and Further and Higher Education", <http://www.unesco.org/new/fileadmin/MULTIMEDIA/FIELD/Beirut/images/Education/LinkingTVETHED.pdf>.

### *Many VET systems grapple with the challenge of effective pathways*

Many countries struggle with the challenge of creating pathways between vocational programmes and higher level ones. Barriers often include fragmented education systems with limited transparency, limited development of general skills in mid-level VET to be successful in higher education, and a lack of flexibility in higher education programmes (UNESCO, 2018<sup>[14]</sup>).

Transitions between vocational programmes and higher-level ones are essential to increase the status of VET, and also to meet the needs of the labour market. In the past, VET, in Thailand as in other countries, was primarily designed to train young people for an occupation that they would pursue throughout their working life. But this simple pattern now rarely holds. Rapid change in the labour market, driven by technological progress and other structural changes, is changing the skillsets required in many occupations, and eliminating some types of jobs, while also creating other, new job roles. Higher level skills are increasingly in demand. This means that the typical worker with a VET qualification is likely to need to upskill and/or reskill during their working lives (OECD, 2014<sup>[9]</sup>).

A UNESCO report, looking at both OECD and non-member countries, encourages the development of pathways from initial VET programmes to further and higher education (UNESCO, 2018<sup>[14]</sup>). It argues that the development of such pathways serves multiple policy objectives, including increasing the attractiveness of initial VET by meeting student aspirations, and removing any perception of VET tracks

as dead-ends; helping to meet growing economic demands for higher level skills and qualifications; supporting lifelong learning; removing wasteful barriers, such as requirements to repeat course material; and improving equity by promoting the access of more disadvantaged groups to higher level programmes (see Box 2.2. for more details). All of these points are relevant to Thailand.

### Box 2.2. Countries can implement policies and practices to promote pathways

To support transitions from VET into further education, UNESCO (2018<sup>[14]</sup>) recommends using National Qualifications Frameworks to support transitions; supporting credit recognition agreements linked to learning outcomes; developing systems for recognising prior learning; and offering quality career guidance, backed by data on labour market outcomes, allowing VET students and graduates to identify options for further learning.

To design initial VET to support lifelong learning, and augment it with bridges to more advanced programmes, it is recommended to build a sufficient range of general knowledge and skills, including study skills, literacy, numeracy and digital skills, into initial VET programmes. This will equip graduates with the skills needed to learn throughout their life, formally and informally, and support access to further and higher education. Moreover, providing optional bridging programmes for VET students supports them in accessing further and higher education. Examples of such programmes are provided in Box 2.1.

To remove the obstacles and fill the gaps in post-secondary provision, UNESCO (2018<sup>[14]</sup>) recommends widening participation in higher and further education, thus allowing more access for VET graduates; broadening entrance criteria to give full recognition to VET and practitioner competences alongside foundational skills; developing shorter post-secondary vocational programmes; and meeting the needs of adults through flexibility in time scheduling, and making full use of modern information and communication technology (ICT).

Source: UNESCO (2018<sup>[14]</sup>), *Pathways of Progression: Between Technical and Vocational Education and Training and Further and Higher Education*, <http://www.unesco.org/new/fileadmin/MULTIMEDIA/FIELD/Beirut/images/Education/LinkingTVETHED.pdf>.

Articulation frameworks can help strengthen pathways. Such arrangements facilitate transitions between individual institutions and programmes. They may include common core curricula – for example the mathematics component of a programme for electricians-, guidance for students who envisage transferring their credits, incentives for institutions to establish articulation agreements, and data collection to monitor credit transfers. They can be codified in legislation or negotiated through agreements between institutions. In France, for example, it is possible for students from *instituts universitaires de technologie* (IUT, university institutes of technology) after the first two years of study to be admitted by the *grandes écoles*, whose masters-level graduates may, in turn, pursue doctoral programmes in universities (OECD, 2014<sup>[9]</sup>).

### Reducing fragmentation of institutions

The Thai system suffers from fragmentation, reflecting a multiplicity of stakeholders, including different ministries and agencies, competing programmes and training providers. As a consequence, there is a very large variety of institutions offering both upper secondary and postsecondary VET programmes, under different governance arrangements. According to OVEC, in 2019 there were around 900 VET institutions in Thailand, 53% of them private, covering more than 350 subject areas. There are 14 different types of institutions: Technical colleges; Vocational colleges; Agricultural and technology colleges; Commercial colleges; Industrial and ship building technology colleges; Fishery colleges; Administration and tourism colleges; Polytechnic colleges; Automotive industry colleges; Golden Jubilee Royal goldsmith colleges; and Arts and crafts colleges. The size of a college varies considerably, depending on the location and programmes offered (see below) (UNESCO-UNEVOC, 2015<sup>[15]</sup>).



Diverse institutional contexts may support diversity and innovation. But multiple organisations and institutional structures involved also creates risks: it can also create confusion for students in the face of over-lapping VET programmes (OECD, 2010<sup>[6]</sup>). Each segment of the VET system addresses an essential need for vocational education and training, but the lack of a coherent and co-ordinated set of policies guiding the system limits its capacity to achieve its full potential, and fit with both the students' aspirations and the labour market needs. Also, employers can find engagement in multiple contexts too burdensome. Fragmentation of the VET offer can hamper the cost-efficient use of public resources, as it leads to duplication of tasks, such as curriculum design and quality assurance. It also makes it more difficult to have an exhaustive view of their training offer and its funding (OECD, 2014<sup>[9]</sup>).

A simpler system would be easier to co-ordinate, and more efficient financially. In a simpler system, it is also easier for companies to be involved in the governance of the VET system and to contribute to the definition of the training offer, which will increase employer's feeling of ownership, which can in turn raise their willingness to contribute to its funding. A reduction of the fragmentation would allow a better-planned approach to VET supply, and a more precise view of the funding going into it (Goncalves, 2019<sup>[7]</sup>).

More effective measures of co-ordination and a consolidation of the different programmes and institutions are needed in Thailand, as developed in Chapter 3. Box 2.3 describes the recent efforts in Malaysia to strengthen co-ordination in the VET system.

### Box 2.3. Improving co-ordination in the fragmented Malaysian VET system

Malaysia has a complex VET landscape, with programmes governed by 11 ministries and delivered in around 1 300 private, public and state government VET institutions. In an effort to bring more co-ordination into this scattered landscape, a national TVET Council (MTVET) was set up at the end of 2020. The MTVET is the highest decision-making body related to the strategic direction of VET in Malaysia, and is responsible for improving the co-ordination in the system through public and private stakeholder involvement.

The MTVET also serves as a platform for the government to empower VET in meeting the needs of the industry. Three strategic thrusts have been defined for this empowerment: integrated and co-ordinated governance, industry-driven VET, and VET shaping the future. These are supported by six key initiatives: formulating sustainable financing models; developing policies to encourage industry participation; creating a national VET branding plan; establishing a VET collaboration hub; establishing VET programme policies; and developing a one-stop VET data centre.

Good practice examples of stakeholder engagement already exist in Malaysia. A number of institutions have been successful in establishing direct links with business, such as the Penang Skills Development Centre (PSDC), which is dedicated to meet the immediate human resource needs of the business community and whose graduates exhibit an employability rate close to 100%. Similarly, Polytechnic and Community Colleges have regular engagement with industries through Industry Advisory Councils (IAC), and have developed work-based-learning and mobility programmes aimed at connecting lecturers and students with industry.

Source: OECD (2019<sup>[16]</sup>), *OECD Economic Surveys: Malaysia 2019*, <https://dx.doi.org/10.1787/eaaa4190-en>; Ministry of Higher Education (2021<sup>[17]</sup>), *TVET Collaboration Hub*, <https://sea-vet.net/news/860-malaysia-sets-up-national-tvet-council-to-enhance-tvet-ecosystem>.



## **Strengthening quality**

### *Several quality issues prevail in the Thai VET system*

Despite recent efforts towards modernisation of the VET system, quality concerns remain, regarding out-of-date curricula, a lack of qualified staff and obsolete equipment. For instance, VET teachers in Thailand have been found to lack industry experience and pedagogical skills (UNESCO-UNEVOC, 2013<sup>[18]</sup>). Quality issues regarding work-based learning opportunities have also been reported (Thailand Development Research Institute, 2019<sup>[4]</sup>). There are also concerns regarding the labour market relevance of the technical skills taught in these programmes, with some reports showing that VET courses do not comply with the needs of the industrial sector, in particular for technicians and operators (Ministry of Labour, 2020<sup>[19]</sup>). The latter issue is discussed in detail in Chapter 3.

Resolving quality challenges must be the policy priority, alongside addressing subsequent pathways, and for that reason a high quality of VET programmes is a precondition for the development of pathways. But very often it will make sense to address the quality of VET alongside efforts to improve subsequent pathways, since those pathways are a major element in making VET attractive to students (UNESCO, 2018<sup>[14]</sup>).

### **Students enter VET with relatively low levels of foundational skills**

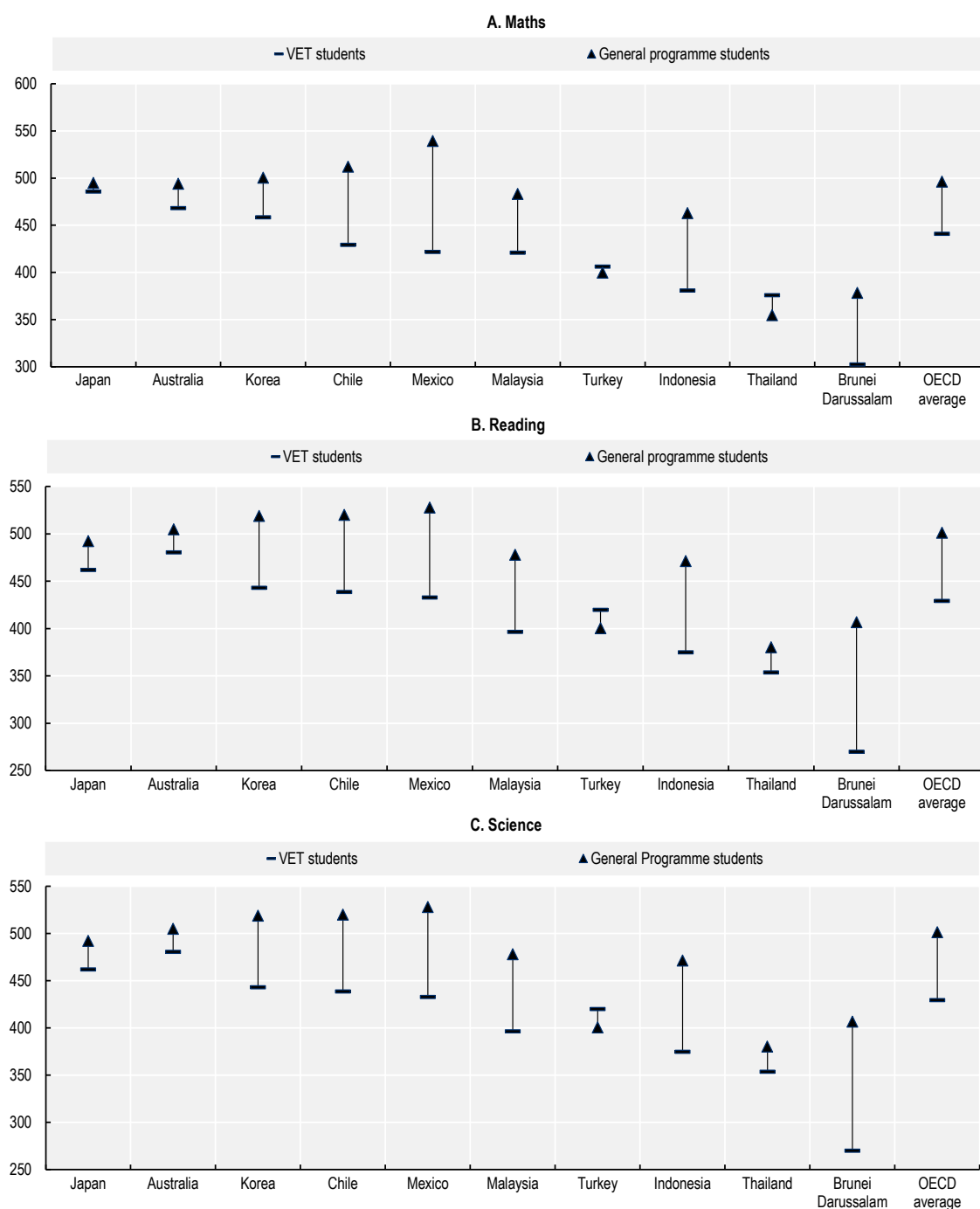
VET students do not only need to have technical skills, but also foundation skills, as these are the skills needed to adapt to changes in the labour market, and are skills sought by employers. When compared to OECD countries with available data (see Figure 2.3, Panel A), the scores of Thai 15-year-old VET students in PISA in maths is, on average, more than 100 points lower than the OECD average (one standard deviation in PISA). Thailand shows similar score in maths than Indonesia, but substantially lower ones when compared to other countries in the region, such as Malaysia (-45 pts), Korea (-82 pts) and Japan (-110 pts). Other upper-middle income countries such as Mexico (-45 pts), and Turkey (-30 pts) also show better performance than Thailand. However when taking into account students' socioeconomic status, Thailand's performance gaps with other countries in some cases shrink. Similar conclusions hold for performance in reading and science.

Interestingly, in Thailand, VET students have very similar performance levels to students in general programmes in the subjects of math and science. However, Thai students in VET programmes score on average almost 30 points less in the reading examination than students in general programmes (-0.3 standard deviations).

Given the importance of literacy and numeracy skills, they need to receive attention within vocational programmes, at both upper secondary and postsecondary levels. This may mean administering a test of numeracy and literacy on entry to vocational programmes to determine student needs, offering targeted help for those with the weakest basic skills. Strong literacy and numeracy will be particularly important for vocational graduates who wish to pursue further academic qualifications (OECD, 2014<sup>[9]</sup>).

**Figure 2.3. 15-year-old VET and general education students in Thailand perform relatively poorly in maths, reading and science**

Unadjusted PISA 2018 test scores for 15-year-old students in vocational programmes and general programmes



Note: Figures correspond to the weighted average score for 15-year-old individuals in general and vocational programmes (ISCED 3B) sitting the PISA examination in those countries of interest for which data on VET programmes are available. For students in vocational programmes, differences between Thailand and all other countries in the sample, except from Indonesia, are statistically significant for all three subjects: maths, reading and science. For students in general programmes differences are statistically significant in all cases. The number of students in the sample for Thailand was 1 325 in VET programmes and 8 633 in general programmes, distributed over 36 VET institutions and 290 schools respectively.

Source: Authors' elaboration based on PISA (2018<sup>[20]</sup>), PISA 2018 database, <https://www.oecd.org/pisa/data/2018database/>.

### Some VET institutions are small and may face quality issues

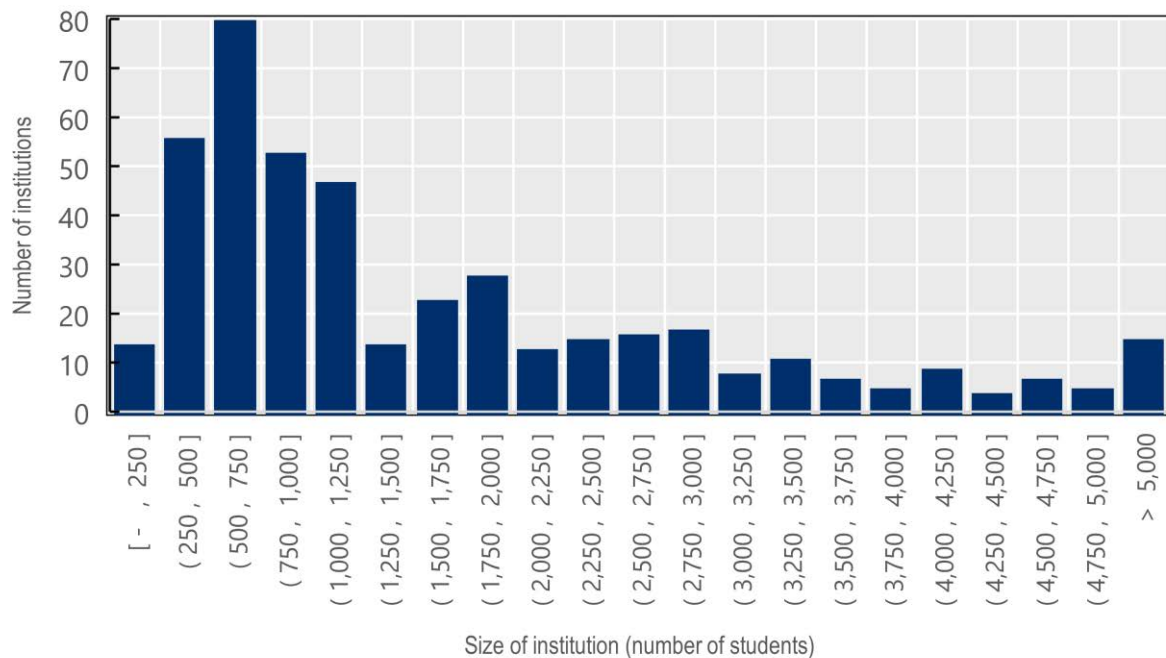
Analysis of student numbers in public VET institutions shows that there are 13 institutions that have less than 250 students and 55 that have been 250 and 500 students (see Figure 2.4). The size of institutions differs by regions, as discussed later in this chapter. In the case of private institutions, data show that almost 60% of private providers have less than 500 students (Jantrakool, 2016<sup>[21]</sup>).

The small size of schools increases the cost of VET provision in some programmes, as there is limited scope for economies of scale. Smaller institutions are unlikely to be able to offer the same variety of VET programmes as large institutions, which increases the risk that students will follow a programme that is not adequately linked to their career interest. These institutions might not always have access to sufficient resources to deliver a quality education.

Sometimes, consolidation may increase efficiency – similar or higher quality services are offered at a lower price. The efficiency gains from economies of scale may be set against some clear losses, such as longer travel times for school students. As a first step towards consolidation, stronger co-operation between different types of VET institutions, and also between VET and general education ones may be encouraged (see Box 2.4 on consolidation of VET schools in different countries).

**Figure 2.4. There are some small public VET institutions**

Size distribution of public VET institutions in Thailand



Note: Only includes public institutions that fall under the responsibility of the OVEC.

Source: Authors' calculations based on Office of the Vocational Education Commission (2019<sup>[22]</sup>), Student data statistics for the year 2019, [http://www.mis.moe.go.th/index.php?option=com\\_content&view=article&id=657:%E0%B8%9B%E0%B8%A3%E0%B8%B0%E0%B8%88%E0%B8%B3%E0%B8%9B%E0%B8%B5-2562&catid=173&Itemid=114](http://www.mis.moe.go.th/index.php?option=com_content&view=article&id=657:%E0%B8%9B%E0%B8%A3%E0%B8%B0%E0%B8%88%E0%B8%B3%E0%B8%9B%E0%B8%B5-2562&catid=173&Itemid=114).

### Box 2.4. Consolidation of VET provision in Denmark, Finland and Estonia

In Denmark, there has been a trend in recent years towards institutional consolidation, with a series of mergers leading to a considerable reduction in the number of VET institutions. Remaining institutions are larger and can offer students a greater choice of programmes. Currently in Denmark there are around 90 technical colleges offering upper secondary education. Upper secondary VET programmes are divided in two parts: a basic programme that is predominantly college based, and a main programme during which students alternate work placement with college education. The basic programme aims to equip students with general skills (e.g. in mathematics, Danish, English) and broad vocational skills. These institutions also offer higher technical and commercial examinations, programmes combining upper secondary academic and VET education and adult vocational courses. They can provide short-cycle higher education programmes and courses for enterprises in collaboration with higher education institutions.

Finland has encouraged mergers of VET institutions. This resulted in a decrease in the number of institutions decreased from 182 to 96 during the period 2005-2017, while enrolment only dropped by 2%, so that institution size increased dramatically. In 2005, there were 60 institutions with less than 300 students, falling to 28 in 2013. A similar trend was observed in adult education, where the number of providers nearly halved between 2005 and 2017. In parallel, the Finnish government has strongly encouraged institutions and other stakeholders to co-operate and build networks.

In Estonia, many small providers were merged into regional VET centres offering a wide range of qualifications, to increase the quality and efficiency of VET and in line with demographic trends.

Source: Kuczera and Jeon (2019<sup>[23]</sup>), *Vocational Education and Training in Sweden*, OECD Reviews of Vocational Education and Training, <https://dx.doi.org/10.1787/g2g9fac5-en>.

### **Private providers play an important role in VET provision, but need to be covered by a strong quality assurance system**

An interesting feature of the Thai VET system is the relatively important size of the private sector (as discussed in Chapter 1). These private institutions are mainly located in Bangkok (there are more than 100 private VET institutions in Bangkok compared with only 21 public VET colleges, see below). They offer a different provision than public VET institutions: public institutions offer mainly industry-oriented and agriculture programmes, while 70% of private ones offer business and commerce programmes (Goncalves, 2019<sup>[7]</sup>). The industry-oriented specialization programmes offered by public colleges in the Bangkok area are not in high labour market demand, and the fields covered by private colleges seem to be more popular to students. While such private institutions may be helpful in supporting access to VET and can help fill gaps in the public offer, there are some concerns regarding the quality of private providers, because of the small size of some of them, as mentioned before, but also failing quality assurance mechanisms. Over the 2011-2015 period, only 256 private institutions, out of more than 450, were certified by an external quality assurance mechanism (Jantrakool, 2016<sup>[21]</sup>).

But private providers, balanced by effective quality assurance, can play a useful role. Very often, private providers (both for and not-for-profit) occupy a particular niche in provision, particularly where no public funds flow to these private providers. Sometimes they fill a gap in public provision – for example, in the Netherlands, the public sector faces barriers in delivering part-time programmes to adults, and as a result these are mostly offered through private providers (OECD, 2014<sup>[9]</sup>). Clearly, quality assurance needs to be linked to the level of public funding. Where government money flows to private providers, there are, or should be, accountability arrangements to ensure that government money is supporting good quality

provision. In England, the government inspection body, Ofsted, inspects provision funded by government regardless of whether it is delivered by a private or a public training provider or indeed an employer (OECD, 2018<sup>[24]</sup>). Thailand should make sure that proper mechanisms are in place to ensure that all private institutions remain at an adequate quality level.

### ***Thailand is to continue to address these quality issues***

VET is at the centre of the strategic efforts to further develop and diversify the Thai economy in the coming years (Thailand Development Research Institute, 2019<sup>[4]</sup>). It is therefore essential to address the persisting concerns about its ability to provide VET graduates with the required knowledge and skills to successfully integrate them into the labour force (Burapharat and Chupradit, 2009<sup>[25]</sup>). In the absence of policies to ensure quality, VET programmes can exacerbate existing economic and social inequalities, channelling disadvantaged students into low quality programmes that do not lead to good jobs. In fact, low quality VET can be worse than no VET at all if it tracks students away from general education without equipping them with the skills necessary to succeed in the labour market. It is argued that when the quality of vocational programmes and student outcomes is improved, the image of vocational education will improve as well. When the negative perception of Thai society towards vocational education is changed, this may attract high-achievers, which would then further raise the quality and image of vocational education. This policy discourse on encouraging a positive attitude of Thai society towards vocational education is an important challenge for the Thai government in response to its skilled labour shortages (Chalapathi and Chalapati, 2020<sup>[3]</sup>). Recently, the Ministry of Education has made significant efforts to develop policies for strengthening VET. A higher budget has been allocated for staff development and curriculum improvement, to better link training provision and labour market demands. The curricula have been updated with new occupational competencies (Goncalves, 2019<sup>[7]</sup>). Thailand is in the process of changing the way skills are assessed for VET graduates to make sure that graduates are more “work-ready” (National Institute of Educational Testing Service, 2021<sup>[26]</sup>). Thailand should continue in that direction and make sure that the technical skills are aligned with what is needed in the labour market, which can be done through close collaboration with employers and through the promotion of work-based learning for all VET students (as discussed in Chapter 3), and making sure that VET students, especially those who come from disadvantaged backgrounds, are given sufficient opportunities to remediate possible skill gaps and to continue studying further if they wish to.

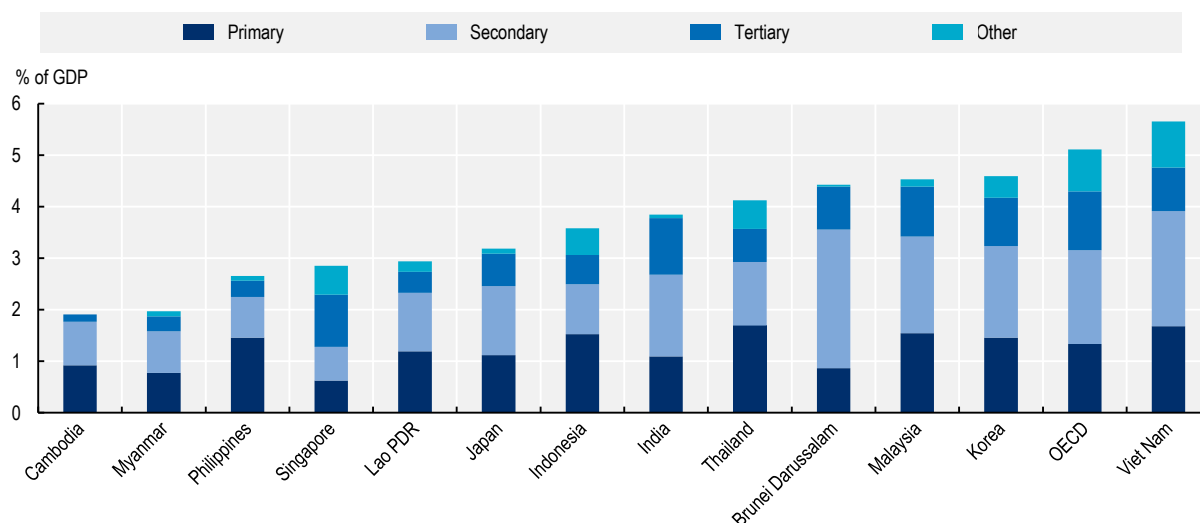
### ***Funding may need to be increased***

Further investment in VET are needed to achieve higher quality. Today, the overall funding of VET is relatively low. Figure 2.5 shows that Thailand spends less on education relative to its GDP than the average OECD country. The difference is particularly large at the secondary education level. However, spending on education in Thailand is higher than in many of the countries in the region. Moreover, differences in funding between VET and general programmes are significant, with the budget allotted to OVEC to manage the VET programmes at the upper and postsecondary levels being very small compared with that for higher education, taking into account their respective numbers of students (Goncalves, 2019<sup>[7]</sup>). This can be problematic, especially as delivering VET is often more expensive compared to general education, especially when programmes require expensive, up-to-date equipment (OECD, 2010<sup>[6]</sup>). The private vocational education sector has been promoted in Thailand to increase the education and training capacity of the country (Chalapathi and Chalapati, 2020<sup>[3]</sup>), and these institutions receive subsidies from the OVEC. Subsidies for VET private secondary institutions vary by area of study and profile of students. For example, VET institutions providing training to disadvantaged groups, such as students from disadvantaged backgrounds, or disabled students, are subsidised at a higher rate than others. Interestingly, Thailand has introduced performance-based approaches to funding, and provided incentives to training providers regarding the introduction of apprenticeship and entrepreneurship modules,<sup>2</sup> and how well students integrate into the labour market, which allows to guide the provision while ensuring its quality

(Goncalves, 2019<sup>[7]</sup>). Performance-based funding can help improve the quality of VET institutions, but it needs to be carefully designed (see Box 2.5). This type of funding arrangements can also be used to make sure that the provision meets the needs of the labour market.

**Figure 2.5. Public expenditure on secondary education is relatively low in Thailand**

Total public expenditure on education as a % of GDP, 2018 or latest year available



Note: Lao PDR is Lao People's Democratic Republic.

Source: World Bank (2019<sup>[27]</sup>), World Development Indicators, <https://databank.worldbank.org/source/world-development-indicators>.

### Box 2.5. Designing funding formulas

Funding arrangements create behavioural incentives for education institutions and it is therefore an important mechanism for the government to steer education and training provision. Broadly speaking across OECD countries, education institutions are usually provided with a per capita funding from the state, as well as additional direct funding from the local government.

One objective of funding is to ensure value for money, targeting resources to enhance the performance of the greatest number of students, and getting the most out of the resources to achieve better outcomes. Both centralised and decentralised funding systems can have efficiency advantages: for example, delivering economies of scale or making use of local knowledge in securing best value for service provision.

But excessive focus on efficiency within provision can easily undermine fair access to education. Students in poorer regions, for example, should have the same access to high quality education and training as students from wealthier areas. By including weights to distribute additional funds in recognition of the different costs and barriers preventing fair access, funding formulas can play an effective role in aligning the distribution of resources with national educational priorities. Carefully crafted funding arrangements should take into account differences in revenues across the regions as well as identifying vulnerable groups in potential need of targeted measures. There are two approaches to equity in funding: horizontal equity allocating similar levels of resources to similar types of provision, and vertical equity allocating different levels of resources to student groups with different needs.

Fazekas (2012<sup>[28]</sup>) identifies four main criteria commonly used in a funding formula across OECD countries: 1) student number and grade level, 2) student needs, for instance disadvantaged learners, 3) curriculum or educational programme, and 4) school characteristics.

Well-designed funding formulas are informed by consistent principles. They are transparent, simple and easily understood. Keeping funding simple and transparent helps in assessing the impact of spending decisions. Further, funding should be subject to periodical reviews and be determined through consideration of reliable data and accountability. There is also a strong argument for making funding predictable, so that school or local authorities can make – and confidently resource – long term plans.

Source: Bergseng (2019<sup>[29]</sup>), *Vocational Education and Training in Bulgaria: Governance and Funding*, OECD Reviews of Vocational Education and Training, <https://dx.doi.org/10.1787/25bad018-en>; Fazekas (2012<sup>[28]</sup>), “School Funding Formulas: Review of Main Characteristics and Impacts”, *OECD Education Working Papers*, No. 74, <https://dx.doi.org/10.1787/5k993xw27cd3-en>.

## Tackling dropout

Finally, measures to increase access to VET and improve its quality should be accompanied with actions to reduce dropout. According to figures published in Thailand’s National Scheme of Education, dropout rates from vocational studies in upper secondary programmes for the academic year 2015 were 17%<sup>3</sup> (Office of Education Council, 2017<sup>[30]</sup>). According to the same report, dropout rates in post-secondary VET programmes during the same period were lower, but still substantial (11%). There are many possible drivers of dropout. For example, there is evidence of career guidance issues –with many students finding their studies not to be aligned with their personal interests–; financial problems, linked to the students’ families ability to afford tuition fees for vocational programmes; and other social issues, such as teenage pregnancy and social vulnerability (Center for Reproductive Rights, 2005<sup>[31]</sup>; Chandoevvit, 2006<sup>[32]</sup>). Efforts to increase access to and completion of VET should therefore go hand in hand with interventions in other related policy areas.

## Reducing inequalities in access to and quality of VET

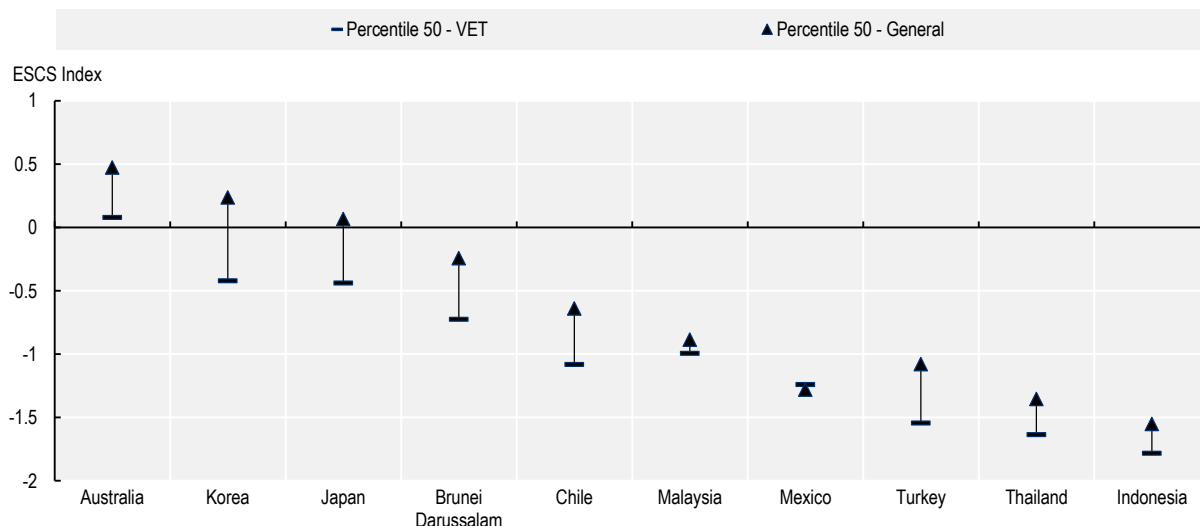
In Thailand, as in most countries, students in upper secondary VET programmes often come from less affluent backgrounds than those in general education. As Figure 2.6 shows, students in VET in the PISA dataset have a lower index of economic, social and cultural status. However, the gap is smaller in Thailand than in many other countries.

According to PISA data, Thailand does better than many countries in ensuring that students succeed regardless their socio-economic status. At age 15, socio-economic status explains 12% of the variance in reading performance in Thailand (OECD average: 12%). The average difference between advantaged and disadvantaged students in reading is 69 points, compared to an average of 89 in OECD countries. However, only 13% of disadvantaged students are academically resilient (OECD average: 11%) (OECD, 2020<sup>[33]</sup>). It is encouraging, as mentioned before, that in Thailand 15-year-old VET students have very similar performance levels to students in general programmes in the subjects of maths and science, despite having slightly less educated parents and showing a lower socio-economic status on average.



**Figure 2.6. VET students are more likely to have a disadvantaged background**

Average PISA index of economic, social and cultural status, by type of programme (2018)



Note: The vertical axis corresponds to the PISA index of economic, social and cultural status (ESCS). The country values presented are the weighted median (percentile 50) in this index for all students in the corresponding sample (i.e. students in VET vs. general programmes) per each country. The PISA ESCS index is a measure of student socioeconomic status created by the OECD on the basis of the following variables: the International Socio-Economic Index of Occupational Status (ISEI); the highest level of education of the student's parents, converted into years of schooling; the PISA index of family wealth; the PISA index of home educational resources; and the PISA index of possessions related to "classical" culture in the family home.

Source: Authors' elaboration based on PISA (2018<sub>[20]</sub>), PISA 2018 database, <https://www.oecd.org/pisa/data/2018database/>.

While upper secondary VET institutions are free of charge, postsecondary VET institutions can charge tuition fees. Tuition fees in private institutions are at least twice as high as in public VET institutions - although students in private institutions seem to come from less affluent backgrounds (Chalapati and Chalapati, 2020<sub>[3]</sub>).

To support students who might struggle with these tuition fees, since 2020, the Thai Ministry of Labour has a specific programmes to provide training courses to disadvantaged students – with around 400 students a year, but with plans to expand to 2 500 beneficiaries a year (Ministry of Labour, 2020<sub>[19]</sub>). The Equitable Education Fund also provides scholarships in VET, and the way in which these funds are targeted also provides an incentive for VET institutions to improve their quality (see Box 2.6). It is important to streamline such initiatives to all VET programmes, to make sure that students have access to adequate financial support when needed, including in postsecondary VET. Box 2.7 discusses an example of grant programmes for disadvantaged students in Peru.

### Box 2.6. The Equitable Education fund and its actions

The Equitable Education Fund (EEF) was established under the Equitable Education Act 2018. The objective of the Act is to provide financial support for children and youth who are in greatest need, reduce educational inequality by forming partnership with different groups and conducting systematic research to support and develop teachers' effectiveness. The EEF is under the supervision of the Prime Minister and is governed by a Board of Governance, which is appointed by the cabinet and has a multi-sectoral structure. The board members include five ministries (Ministry of Education, Ministry of Finance, Ministry of Social Development and Human Security, Ministry of Interior and Ministry of Public Health) and seven independent experts from various disciplines (academic, private sector, civil society).

EEF supports vocational colleges in improving their quality by giving grants to disadvantaged students to pursue VET programmes. If an institution is selected, based on their curriculum and teaching quality, and ability to develop student skills, they are approved to start finding and selecting scholarship recipients. Those beneficiaries must be students finishing lower secondary or upper secondary vocational programmes, and match the criteria of the top 20% lowest income group, or has other disadvantages. They are also selected based on their academic performance. EEF provides the budget for scholarships, living expenses, resources for developing skills, and other activities for students and vocational institutions. Each institution will receive funding in proportion to how many scholarship recipients the institution has accepted out of the 2 500 scholarships that will be offered. EEF also establishes a system to provide academic support, to monitor and to evaluate institution's progress, and to organise a knowledge exchange platform at the local and national level. This means that vocational colleges must provide quality career guidance service in the schools. Colleges also need to show that they support students who receive the grant in different aspects, including academic support, career guidance and social support. Students have to enrol in specific programmes that are considered as high quality in terms of foundation skills and labour market relevance. Students also have to benefit from quality work-based learning experiences.

Source: Equitable Education Fund (2018<sup>[34]</sup>), *Equitable Education Fund brochure*, [https://www.eef.or.th/wp-content/uploads/2019/07/eef\\_brochureEng.pdf](https://www.eef.or.th/wp-content/uploads/2019/07/eef_brochureEng.pdf).

### Box 2.7. Programmes fostering equity in Peru

Peru's Beca 18 programme, which provides low-income students with grants to pay tuition at a selected group of postsecondary institutions, has some elements of an outcomes-based funding approach. Public funds (in the form of student financial aid) go to schools that have met eligibility criteria that align with the government's goal of wider access to high-quality postsecondary education for low-income students. The schools participating in the programme were chosen based on their educational performance.

The programme provides a good example of how to link access to public funding to institutional performance. In a VET system so dominated by private providers as Peru's, financial incentives linked to outcomes play to the strengths of a competitive, market-based approach to provision while addressing the tendency of providers to focus only on enrolments. It represents a strategy for increasing public financing of VET that is targeted and conditional. It can also serve as a valuable compliment to existing institutional and programme approval policies that seek to shape the supply of programmes.

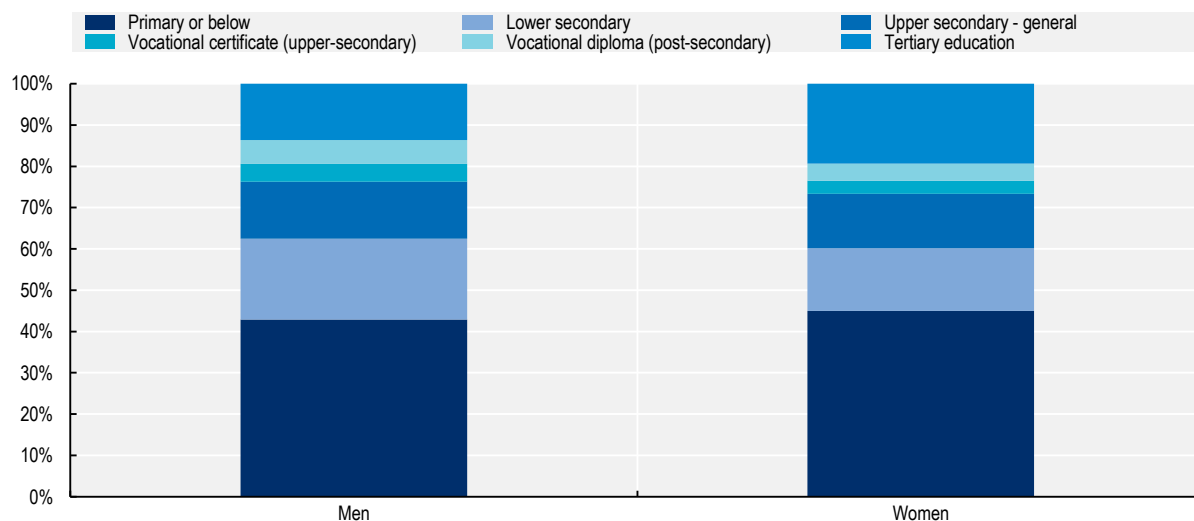
Source: McCarthy and Musset (2016<sup>[35]</sup>), *A Skills beyond School Review of Peru*, <http://dx.doi.org/10.1787/9789264265400-en>.

## Reducing gender gaps

In Thailand, like in most countries, women now have a higher education attainment on average than men (see Figure 2.7). While 19% of women aged 16 to 65 hold a tertiary education degree, this is the case for only 14% of men. However, they are less likely to have participated in VET programmes, and still today, as highlighted in Chapter 1, the share of girls enrolled in VET is relatively low. PISA data show that 15-year-olds girls in Thailand perform better than boys in reading, the main topic of PISA 2018, with a statistically significant difference of 39 points (OECD average: 30 points higher for girls). Contrary to what is seen in most OECD countries, girls perform better than boys in maths, with a statistically significant difference of 16 points (OECD average: 5 points higher for boys). Likewise, girls perform better than boys in science with a statistically significant difference of 20 points (OECD average: 2 points higher for girls) (OECD, 2020<sup>[33]</sup>). Similar patterns are found for students in general and vocational programmes.

**Figure 2.7. In Thailand, women are more likely than men to hold a tertiary degree**

Highest educational level attained by gender, adults not currently in education, age 16-64



Source: Authors' calculations using National Statistics Office (2021<sup>[8]</sup>), Labour Force Survey data, <http://www.nso.go.th/sites/2014en/Pages/Statistical%20Themes/Population-Society/Labour/Labour-Force.aspx>.

Analysis of enrolment in VET by field of study shows that there are very important gender differences in study choice. As discussed in Chapter 1, female students are not only less likely to choose VET programmes, they also tend to choose some very specific fields-of-study, and these are different from the fields chosen by male students. The large majority of female VET students –at certificate and diploma level- are in business administration or commerce programmes, and only a small share are in fields such as industrial trades or industrial technology. On the contrary, industry-related programmes are the largest for male VET students.

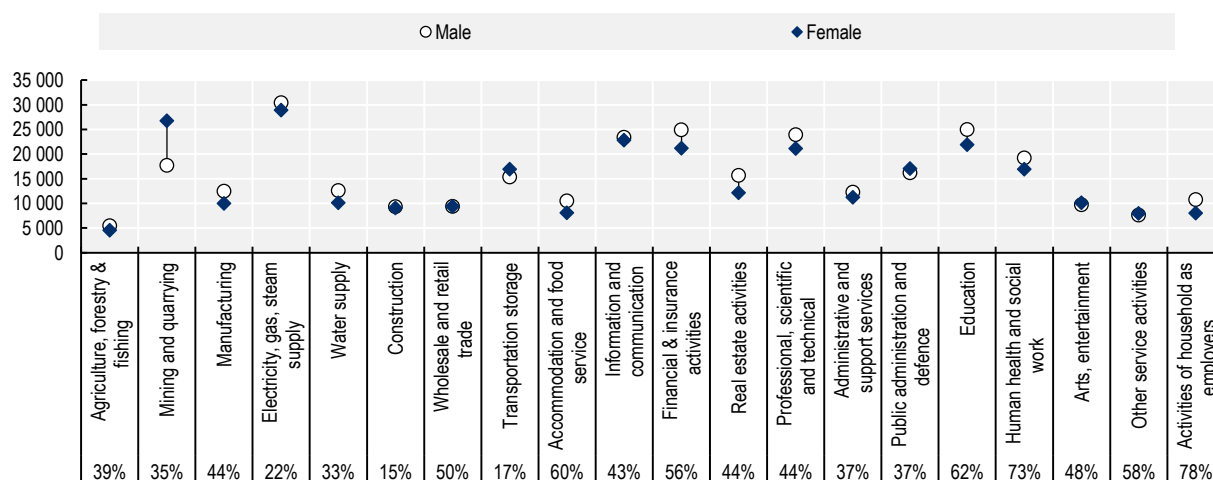
Gendered choices between fields-of-study contribute to gender segmentation in the labour market, with female students and apprentices often being concentrated in fields which have lower completion rates and weaker opportunities for progression. Moreover, because of their field of study choice, women are more likely to end up in jobs that are characterised by lower salaries, worse working conditions, and fewer opportunities for career advancement. This type of horizontal segregation (between occupations) can be an important cause of inequalities between men and women. Also, women may be pushed into part-time friendly' occupations, and take on the burden of unpaid care work at home – this maintains the traditional

division of labour within the job market and the household. Research on gender segregation in education shows that segregation is especially pronounced in educational systems with a strong vocational education and training sector at the upper secondary level (Heiniger and Imdorf, 2018<sup>[36]</sup>).

Data from the Thai labour force survey show that the industries accounting for the largest shares of total female employment are the agricultural, wholesale and retail, manufacturing, and hospitality sectors (employing three quarters of all female workers). Women are over-represented relative to men in certain low-wage industries, such as the hospitality sector (see Figure 2.8, accounting for 11% of total female employment in 2015). At the same time, more women than men work in the education, health and financial services sectors, which are relatively high-wage industries (accounting jointly for only 9% of total female employment). The data also show that on average women are likely to have lower wages than men, in particular in sectors such as education, real state, and financial services (see Figure 2.8). Perhaps reflecting wider factors in Thailand, the large differences in career and education choices between women and men give cause for concern.

**Figure 2.8. Women earn lower wages than men in many industries**

Average monthly wage or salary by industry and gender (in Thai Baht, 2015) and share of female workers by industry (horizontal axis)



Note: Wage or salaries of government employees and private employees only. Share of female workers per industry for that year is included on the horizontal axis.

Source: National Statistical Office, Ministry of Digital Economy and Society (2015<sup>[37]</sup>), The Informal Employment Survey 2015, <http://www.nso.go.th/sites/2014en/Survey/social/labour/informal/2015/6.Full%20Report.pdf>.

Gender gaps in education and training are not determined by innate differences in ability but are the product of gender stereotypical role models that become internalised in the process of socialisation, in terms of perceptions of self-efficiency. Results from PISA discussed above show that girls outperform boys in all fields. Likewise, results of the International Computer and Information Literacy Study (ICILS), a computer-based assessment of eighth grade students' ICT skills conducted in 21 countries, shows that girls scored significantly higher than boys in all countries except Thailand and Turkey; and in these two countries, there was no statistically significant difference between female and male students' scores. However, on the ICILS assessment, girls had lower levels of self-efficacy even when they outperformed or performed similarly to boys on measures of digital skills. Analysis of PISA data also shows that gaps in self-efficacy start at home and are often accentuated by school system themselves, and the biases that teachers themselves have (Reisel, Hegna and Imdorf, 2015<sup>[38]</sup>; OECD, 2015<sup>[39]</sup>).

*Career guidance can help guide girls into study programmes and occupations that they may not have considered*

Gender stereotyping can deter both girls and boys from pursuing specific careers, especially so in traditional VET occupations, such as manufacturing (Makarova, Aeschlimann and Herzog, 2019<sup>[40]</sup>). Encouraging all students to pursue studies in the field that interests them and in which they can fully express their potential may result in better labour market and social outcomes. Greater occupation equality may help to eliminate gender stereotypes that have a negative impact on the status of women (OECD, 2015<sup>[39]</sup>).

In Thailand, there are some opportunities for career guidance and counselling in a formal sense – career education is provided throughout primary and secondary education, but with important variations, from six to 225 hours of career education (Office of the Education Council, 2017<sup>[41]</sup>). In addition, students have access to career guidance services at regional offices managed by DSD under the Ministry of Labour, where they receive information that is the same regardless of the region. Prior to the end of each semester, DSD regional offices normally set up mobile units to provide career guidance for students. However, there are reports from the Ministry about some areas having inadequate coverage. Overall, it is considered that there are too few opportunities for youngsters to become familiar with different jobs, and study programmes (Ministry of Labour, 2020<sup>[19]</sup>). It seems that students are largely on their own navigating a system which is complex, especially given the large numbers of private providers and types of institutions. In an environment in which the economic prospects and future professional development of particular educational programmes are not well known, students (and parents) will rely on other factors – convenience, familiarity, and of course gender stereotypes – to guide their decisions. These factors may not lead to desirable long-term outcomes. Private institutions in particular may excel in marketing and can be particularly effective regardless of the quality of the programmes they deliver or whether they align with the needs of the labour market.

Choosing a programme of study is one of the biggest decisions individuals makes in their lifetime. Public interventions in career guidance are often justified using arguments from social capital theory: the lack of both personal and professional network connections, and lack of exposure to different occupations, is thought to hinder the labour market progress of young people, in particular from disadvantaged backgrounds. Career guidance may help reduce inequalities in opportunities associated with a child's background (related to socio-economic status and gender for example) and parental experiences and expectations. An important purpose of career guidance is to provide students with relevant information and experiences in order to broaden aspirations. Evidence shows that career guidance interventions for disadvantaged students, such as young people at risk of becoming not in education, employment, or training (NEET), work best when they are targeted, located in the community and highly individualised - see (Musset and Mytna Kurekova, 2018<sup>[42]</sup>) for a review of the evidence.

Stereotypes preventing girls to progress in the same fields as boys can be countered by improved information and career guidance interventions. Having “role models” sometimes is a good way to encourage students, especially girls, to pursue new areas that are traditionally not considered for females (Hughes et al., 2016<sup>[43]</sup>; Musset and Mytna Kurekova, 2018<sup>[42]</sup>). As such, engaging employers of different sizes and sectors, including successful young entrepreneurs, in career guidance programmes will be useful for students. Nonetheless, career guidance interventions have to be designed carefully to be effective, especially when they involve work placements, because if not well designed, they can exacerbate rather than challenge students' gender stereotypical trajectories (Osgood, Francis and Archer, 2006<sup>[44]</sup>). A study by the U.K. Equal Opportunities Commission (2005<sup>[45]</sup>) recommends, amongst other things, that:

- Students experience at least two different types of work placement with one in a non-traditional occupation.
- Guidance and training is provided for schools and employers to tackle gender stereotyping in work experience placements.

## Box 2.8. Targeted career guidance with gender in consideration

### Switzerland

The Futures programme is organised in Switzerland for students in grades 5-7 to encourage them to spend a day at work of a parent or other relative and to tackle gender stereotypes. The key element of the programme is that children are exposed to occupations of the other gender, i.e. girls visit fathers' workplaces and boys visit mothers' workplaces. The programme also includes other special projects where children can engage with adults working in (so far) unusual forms of employment, such as fathers working part-time, or female IT programmers.

### Canada

In Canada, two regions support programmes specifically aimed at promoting non-traditional jobs among girls. The "Futures in Skilled Trades and Technology Programme" supports greater participation of women in skilled trades in the Newfoundland and Labrador Province by piloting modules targeted at girls in grade school. The Ontario "Youth Apprenticeship Programme" reserves some of its funding to promote skilled trades among women through conferences and hands-on activities.

### Germany

Some countries also support initiatives to attract interest among male students in female-dominated professions. Germany, for example, funds a nationwide network and information platform to support gender-sensitive career and life orientation for boys through the programme "New Paths for Boys and Boys' Day". The programme provides information and material to education and social work professionals, career advisers, human resource teams, education and training specialists, and parents. Nationwide conferences and meetings are also organised to facilitate exchanges between researchers and practitioners.

Source: Musset and Mytna Kurekova (2018<sup>[42]</sup>), "Working it out: Career Guidance and Employer Engagement", *OECD Education Working Papers*, No. 175, <https://dx.doi.org/10.1787/51c9d18d-en>; OECD (2015<sup>[39]</sup>), *The ABC of Gender Equality in Education: Aptitude, Behaviour, Confidence*, <https://dx.doi.org/10.1787/9789264229945-en>.

## *Data infrastructure and tools for career guidance*

Technological advances have opened up access to new sources of information about different education and training options. A robust data infrastructure that can reliably connect education and employment is an essential step toward connecting educational supply and labour market demand. Ideally, students can have access to information on: all available options and pathways specific to the individual's needs, including VET ones; the qualifications to which they lead, and the further qualifications to which these give access; the occupations to which these qualifications provide access, and the extent to which the qualifications are sufficient for entry; the salary/wage levels offered by these occupations; the projected demand for these occupations; and the labour market outcomes achieved by those successfully completing the programmes, including the nature of their jobs, their salary/wage levels, whether or not the jobs are in an occupational sector directly related to their VET programme, and the extent to which they are using the skills and competences acquired in the programme (see Chapter 3 on graduate tracer surveys). For example in Peru, the ministries of education and labour have set up a website ([www.ponteencarrera.pe](http://www.ponteencarrera.pe), Get into a career) to provide data on the cost and labour market returns of specific programmes of study at all of the country's technical institutes and universities. In Norway, the public career guidance web portal ([www.utdanning.no](http://www.utdanning.no)) includes an overview of the educational pathways and descriptions of more than 600 careers and professions. The portal also includes interviews with skilled workers, overview of places to work and information on average salaries.

### ***Increasing access for adults***

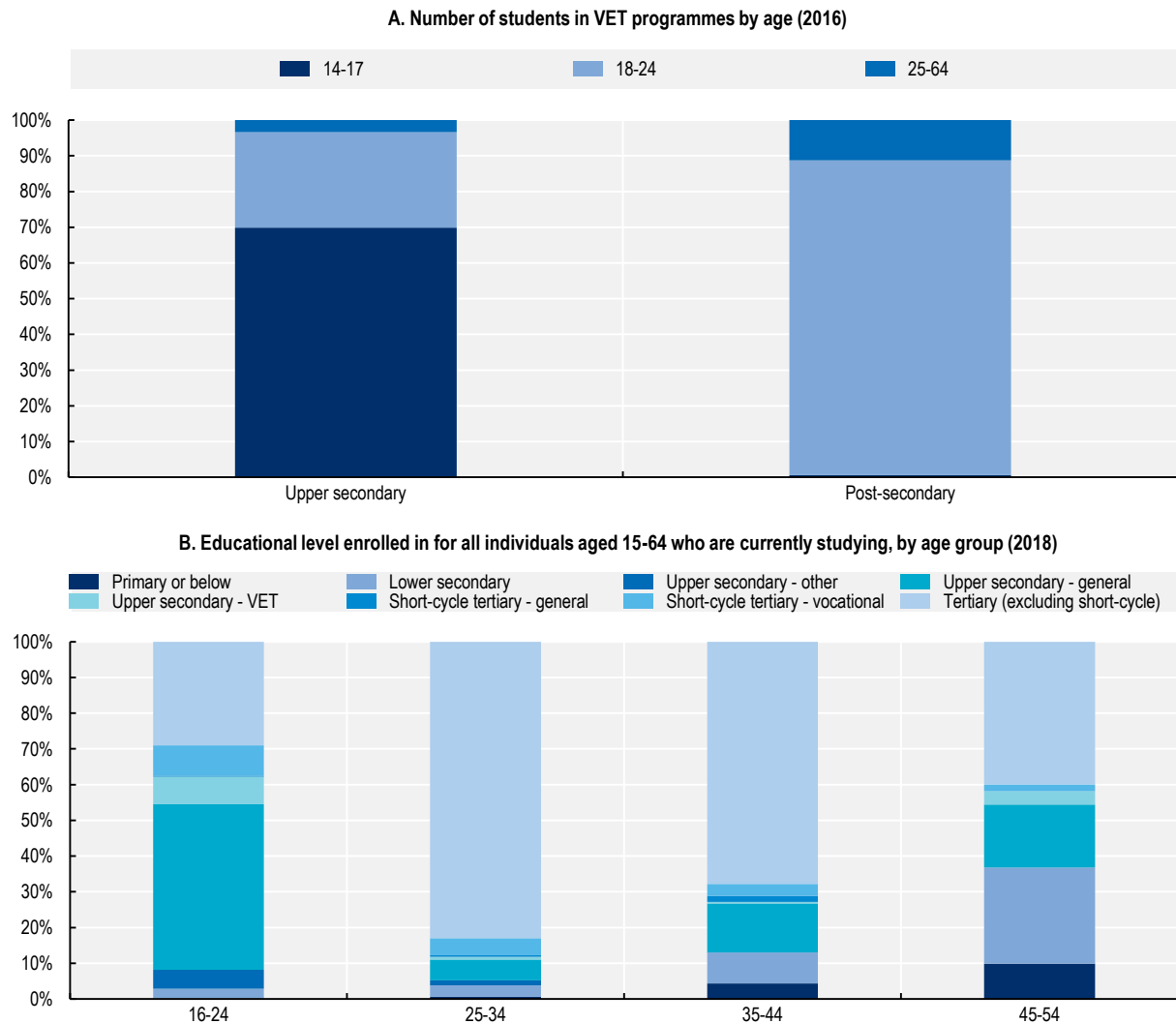
Adults can take advantage of VET programmes to deepen their technical skills, make a sideways career move, or return to work after a period out of the labour market. Structural changes in the labour market mean that some workers need to upskill to remain abreast of changing requirements, while others have to reskill entirely (OECD, 2014<sup>[9]</sup>). This need for upskilling and re-skilling is reinforced by the COVID-19 crisis and the consequent shift in the economy (see Chapter 3 for a discussion on the impact of the crisis in Thailand). One of the fundamental issues of the Thai economy is the lack of well-trained workers to face the challenges of a more complex economy. While the proportion of workers achieving at least 12 years of formal education has increased tremendously in the latest years, still around 45% of working adults aged 16-64 have only achieved primary education or below (see Chapter 1). Opportunities for adults to invest in their skills are therefore crucial.

Although data on adult participation in VET in Thailand are scarce, it seems that participation is very low for adults in these programmes. For example, data on the age profile of students in VET programmes show that only 3% of vocational certificate students and 11% of vocational diploma students are older than 25 (see Figure 2.9, Panel A). Among adults who are currently studying for a formal qualification, tertiary-level programmes are most popular, followed by general upper secondary education (see Figure 2.9, Panel B). However, these data only capture participation in formal education programmes, and evidence from OECD data clearly shows that many more adults participate in non-formal training than in formal training. As discussed in Chapter 1, Thailand has a fairly large non-formal VET sector. Non-formal training often has the advantage of being shorter and more flexible than formal training, which is an important advantage for adults. However, the non-formal training market often lacks transparency with a lack of quality assurance. Moreover, as non-formal does not result in a qualification, it might be difficult for adults to show to employers that they have gained skills through non-formal training.

Data on training provision by firms in the formal economy suggest that workers in Thailand have comparatively limited access to training opportunities. According to the World Bank Enterprise Survey, which contains information from over a thousand registered firms with at least five employees, only 18% of employers provided organised training activities to their workers between 2015 and 2016 (see Figure 2.10). This share is much lower than the average in upper-middle income countries (36%) and East Asia and the Pacific (38%). Thailand introduced a levy scheme in 2002, which promotes training efforts by granting a 200% tax deduction to enterprises for investing in skills development. The funds collected by the levy scheme aim to improve the skills standard of Thailand's existing labour force and is compulsory for companies with more than 100 employees. Enterprises that provide staff with occupational training (approved by the Ministry of Labour) are eligible for certain privileges and benefits. Training should be organised on a yearly basis and provided to at least 50% of the company employees. Evidence shows that the introduction of the levy scheme in Thailand has led to a sharp increase in the training provided by companies, reaching around four million workers who receive training every year (Goncalves, 2019<sup>[7]</sup>). But research suggests that little was done to involve firms in the development of the levy and the processes for approving training programmes and claiming the tax reduction are daunting (Ritchie, 2010<sup>[46]</sup>). Another shortcoming of the levy is that by definition informal workers are excluded. Usually, once in the informal economy, opportunities for learning and upgrading skills are scarce when compared to employees' opportunities in formal firms, or for the self-employed working formally (Alonso Soto, 2020<sup>[47]</sup>).



Figure 2.9. Few adults are enrolled in VET programmes

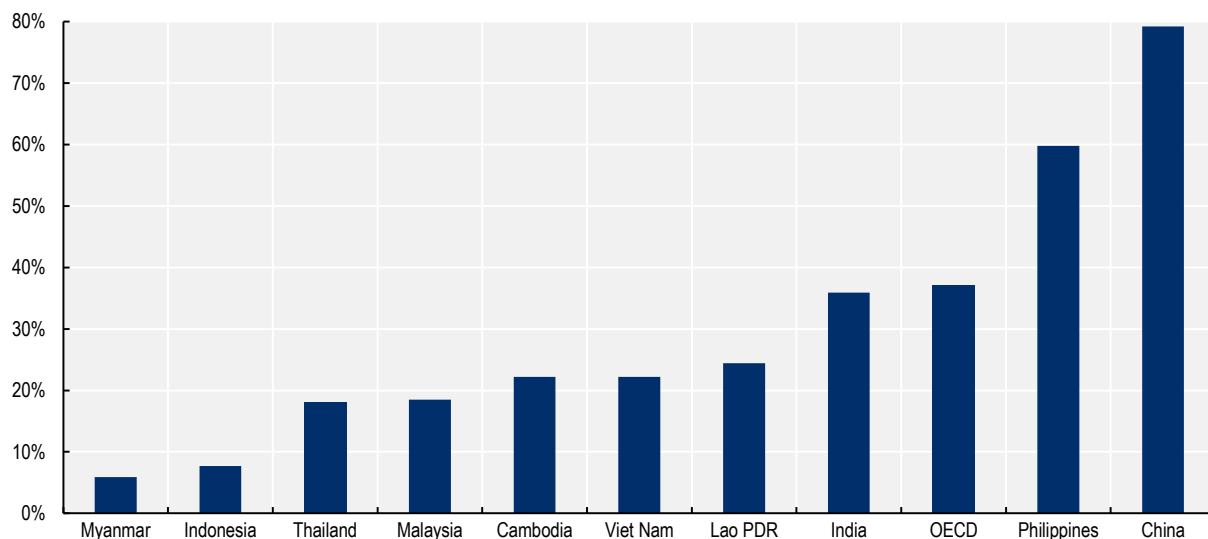


Note: Panel A refers to the number of Students in the institutions under OVEC by age in academic year 2016.

Source: Office of the Vocational Education Commission (2016<sup>[48]</sup>), Educational statistics data for the year 2016, <http://techno.vec.go.th/ประชาสัมพันธ์/รายละเอียดข่าว/tabid/766/ArticleId/5977/language/th-TH/.aspx> (Panel A); Authors' calculation based on National Statistics Office Thailand (2021<sup>[8]</sup>), The Labour Force Survey 2018, <http://www.nso.go.th/sites/2014en/Pages/Statistical%20Themes/Population-Society/Labour/Labour-Force.aspx> (Panel B).

**Figure 2.10. Relatively few firms train workers in Thailand**

Percentage of manufacturing firms offering structured training



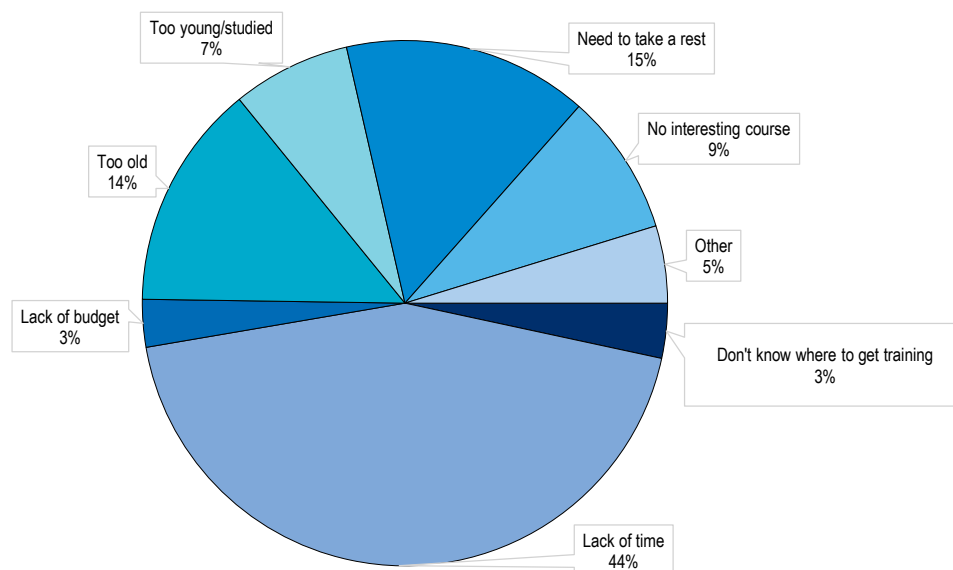
Note: Data refer to 2013 for China, 2014 for India, 2015 for Indonesia, Malaysia, Philippines and Viet Nam, to 2016 for Cambodia, Myanmar and Thailand, 2018 for Lao .PDR. and to 2010-19 for the OECD average of 15 available countries. Only training that has a structured and defined curriculum (e.g. classroom work, seminars, lectures, workshops, and audio-visual presentations and demonstrations) is included.

Source: World Bank (2021<sup>[49]</sup>), Enterprise Surveys, <http://www.enterprisesurveys.org>.

Available information for OECD countries shows that, in most countries, adults face multiple barriers to access training. Adults might not participate in training for a variety of reasons, some related to a lack of motivation, others to practical barriers, such as financial and time constraints (OECD, 2019<sup>[50]</sup>). In Thailand too, according the Skills Development Survey data (2019) from the National Statistical Office of Thailand, about 92% of adults responded that they do not desire to participate in adult learning. This lack of interest is lower for younger adults aged 15 to 24 (88%). On the other hand, the share is higher among people with low levels of education (95%) than among those with at least a secondary education qualification (90%). Some of the reasons for not wanting to participate in training for Thai adults include lack of time (44%) and no interesting course being available (9%) (see Figure 2.11). Online training could help overcome some of these barriers, and recently the TPQI has made available a large number of e-learning course for anyone to access free of charge (TPQI, 2021<sup>[51]</sup>).

**Figure 2.11. Thai adults face multiple barriers to training participation**

Reasons for not desiring to participate in job-related adult learning, 2019



Note: Other reasons include reasons due to sickness, handicapped, and unknown reasons, among others.

Source: National Statistical Office (2021<sup>[52]</sup>), Skills Development Survey 2019, <http://www.nso.go.th/sites/2014en/Pages/survey/Social/Labour/The-Skill-Development-Survey.aspx>; OECD (2020<sup>[53]</sup>), *OECD Economic Surveys: Thailand 2020*, <https://dx.doi.org/10.1787/ad2e50fa-en>.

### *Promoting adult participation in VET programmes*

If the Thai education and training system is to seriously address the challenge of adults not having the right skills for their jobs and employers facing skills shortages, it has to offer meaningful routes to careers for those who have left school with poor skills and low levels of qualifications. The promotion of adult learning can assist Thailand into moving away from its reliance on labour-intensive industries and promoting skilled-intensive industries in areas such as computing, telecommunications, and electronics (Chalapati and Chalapati, 2020<sup>[3]</sup>).

More attention to the learning needs of adults is needed. In practice, many adults lack time for training because of work and/or family responsibilities, and those who are in informal employment cannot always count on their employer to provide or support training. Re-engaging them in education may require programmes that are flexible and adapted to the needs of adults (e.g. part-time programmes, distance learning). Modular approaches are especially helpful in providing adult learners with greater flexibility on their learning path. They allow adult learners to focus on developing the skills they currently lack, complete self-contained learning modules on these skills and combine these modules to eventually gain a full (formal) qualification. Breaking down programmes into discrete modules to allow for course exemptions and different paces of study can be challenging, but necessary for adults (OECD, 2019<sup>[50]</sup>; OECD, 2014<sup>[9]</sup>).

VET can play an important role in up-skilling and re-skilling adults – especially if it is of high-quality and well-aligned with labour market needs, but only if it designed in an adult-friendly way. International comparison shows that there are different ways to engage adults into VET (see Box 2.9). There are some cases of individual institutions in Thailand that have taken it upon themselves to adapt to the needs of adults – for example, the Bangkok Metropolitan Administration's (BMA) Vocational Training Centre provides a number of job training courses, including part-time and weekend courses (OECD, 2020<sup>[53]</sup>).

### Box 2.9. Countries organise their VET systems for adults in different ways

The training needs of adults can be met through vocational programmes in a variety of ways:

- Separate adult learning institutions may offer the same qualifications as those delivered to young people. In Denmark, a separate parallel adult education system allows access to postsecondary qualifications at levels corresponding to those of the ordinary education system. More than 40% of adults participate in formal and/or non-formal education in any given year.
- Spread throughout Flanders (Belgium), centres for adult education provide second-chance education and basic skills programmes, and vocational programmes at upper secondary and postsecondary level. To facilitate the participation of working adults efforts have been made to make programmes (particularly associate degrees) flexible through modular provision.
- Iceland has an approach designed to serve the needs of a sparsely populated country. Twelve regional lifelong-learning centres offer distance learning and distributed learning programmes at all education levels, including training in the regulated trades; recognition of prior learning takes place through both formal and informal assessment. The centres work with employers to identify training needs and offer career guidance.

Source: McCarthy and Musset (2016<sup>[35]</sup>), *A Skills beyond School Review of Peru*, <http://dx.doi.org/10.1787/9789264265400-en>; OECD (2014<sup>[9]</sup>), *Skills beyond School: Synthesis Report*, OECD Reviews of Vocational Education and Training, <https://dx.doi.org/10.1787/9789264214682-en>.

#### *Developing skills certification and recognition of prior learning*

Many adults in VET have already acquired some skills in the workplace, formally or informally. As people work, in both the formal and informal economy,<sup>4</sup> they gain new skills and knowledge. But without a formal qualification, they may have difficulty leveraging those new skills to find a new job or secure a promotion. Labour market mobility is essential for generating inclusive growth and sustaining a knowledge-based economy. When students can receive credits and course exemption for skill acquired outside of the formal education system, this would make it easier and more attractive for adults to participate in VET.

Skills recognition can be used to give access to an education or training programme, in recognition of pre-existing skills (e.g. a person who did not complete upper secondary education may access a postsecondary programme). This can widen access to further learning opportunities. One challenge is that potential beneficiaries may have weaknesses in some areas (e.g. learning in academic settings, literacy or numeracy). To address this, a number of countries have implemented initiatives that offer targeted support to students who might otherwise struggle (Kis and Windisch, 2018<sup>[54]</sup>).

Skills recognition can also be used to reduce programme duration. This route is suited to learners who already hold some of the skills targeted by the VET programmes, but not all of them. Several OECD countries have education and training schemes that allow for reduced duration (Kis and Windisch, 2018<sup>[54]</sup>). In Thailand, in theory, workers can use both their work experience and prior education records to earn extra credits with an exemption of some particular courses based on their experience. This is possible in 32 different fields - including industry, mechanics, metallurgy, high power electricity, electronics, computer techniques, construction, agriculture and tourism. According to the previous experience, the lengths of the coursework can be shortened to eight months, in the formal, non-formal and dual system. In the case in dual programmes, a maximum of two-thirds of total credit hours can be accredited for prior learning. Within the Thai system of recognition of prior learning (RPL), one out of three assessors must be an industry representative. Trainees are provided with additional courses after validation of their experience or assessment of prior learning (Office of the Vocational Education Commission, 2020<sup>[55]</sup>). No data are

available on the actual use of these possibilities in Thailand, which may be very limited. Education institutions sometimes have inadequate financial incentives to recognise prior learning, particularly if course exemptions trigger reduced fee income or public funding. Compensatory mechanisms can balance this effect. In Denmark the government provides institutions issuing RPL certificates (and therefore shortening the duration of the programme) with one-off funding (Field et al., 2012<sup>[56]</sup>).

Finally, skills recognition can also be used to give VET qualifications without a required training programme. This route is suited to individuals who have most or all of the skills required by the targeted qualification. For example, several countries allow access to the final examination in apprenticeships for candidates with relevant work experience (see Box 2.10). This option can serve as an alternative to regular apprenticeships or offer second chances to low-qualified adults.

Undertaking validation is demanding, as it depends on the capacity of a person to identify and articulate their existing skills and prove them. This may be particularly hard for disadvantaged adults – even though the potential benefits of validation would be particularly large for them. In addition, validation may sometimes receive little support from employers (Kis and Windisch, 2018<sup>[54]</sup>).

### **Box 2.10. Helping incumbent workers acquire formal recognition of their skills and abilities**

#### **Examination for occupational qualification in Peru**

Since 2011, the Ministry of Labour has been authorising partner organisations that meet specified criteria to award qualifications. The organisations administer written and/or performance-based examinations to interested individuals for a fee. Individuals who pass are awarded an officially recognised occupational qualification, such as a certification in carpentry or baking. The innovative approach is designed to appeal to both employers and workers, enabling both to make their skills more visible. Employers can take stock of their human capital, identifying potential skills gaps or opportunities to leverage existing talent. Workers and job seekers can obtain third-party validation of their skills and abilities, easing their transition from one position to another. Building linkages between alternative qualifications and formal VET programmes helps workers and students move along career pathways. Alternative credentialing is a strategy uniquely well suited to a country like Peru, with high levels of labour market informality and low postsecondary completion rates. It builds an infrastructure for supporting upward mobility that can be particularly difficult to achieve in informal economies.

#### **Direct access for adults to final apprenticeship examinations in Austria, Germany, Norway & Switzerland**

In Austria, individuals aged 18 or more with relevant experience may directly apply for the final apprenticeship examination without enrolling as an apprentice. This route accounted for 15% of awarded apprenticeship qualifications in 2012.

In Germany, individuals may take an “external examination” (*Externenprüfung*), taking the final assessment of regular apprenticeship programmes without completing the programme itself. Access is limited to those who have worked in the target occupation at least for one and a half times as long as the duration of the apprenticeship, and they have been performing skilled tasks in their job. Candidates may prepare for the assessment by following preparatory courses. In 2009, candidates who took the external examination accounted for about 6% of successful apprenticeship final examination candidates.

In Norway, it is possible to take the trade or journeyman's examination without an apprenticeship. The candidate must demonstrate comprehensive competence in the field. The candidate must have work experience in the field equal to the length of the apprenticeship plus 25% (usually meaning five years in total) and must pass a theoretical exam. About a third of journeyman certificates were awarded on the basis of experience-based certification in 2015/16.

In Switzerland, adults with relevant work experience may access the final qualifying examination for apprenticeships and obtain a federal vocational diploma or certificate. Five years of work experience are required, and in most cases, this includes a minimum of several years - usually three - in the targeted occupation. Cantons provide advice to applicants about how to prepare for the examination. In some occupations, preparatory courses for adults are available. In all occupations, adults may pursue additional training by attending vocational schools or intercompany training centres.

Source: McCarthy and Musset (2016<sup>[35]</sup>), *A Skills beyond School Review of Peru*, <http://dx.doi.org/10.1787/9789264265400-en>; OECD (2020<sup>[57]</sup>), *Strengthening Skills in Scotland: OECD Review of the Apprenticeship System in Scotland*, [https://www.oecd.org/skills/centre-for-skills/Strengthening\\_Skills\\_in\\_Scotland.pdf](https://www.oecd.org/skills/centre-for-skills/Strengthening_Skills_in_Scotland.pdf).

### ***Tackling regional inequalities in VET***

Thailand's regions are at widely different levels of economic development, and VET can play a key role in closing the gap. Comparisons between frontier and lagging provinces in terms of labour productivity growth show that provincial human capital endowments matter in two ways. Provinces that converge towards the frontier have a higher share of workers who attained upper secondary education than diverging provinces, while almost 30% of the workforce in lagging provinces have never completed primary school. At the same time, provinces at the frontier have higher a share of workers who have completed tertiary education than in other provinces. A secure and inclusive economic transition therefore depends on the capacity of Thai provinces and regions to upgrade the skills of their labour forces and to generate innovation. Expanding access to upper secondary is crucial for diverging provinces to catch up. Employment surveys show that, across all regions, students that decide not to pursue higher education obtain better salaries if they complete upper secondary vocational training, rather than upper secondary general education. The wage premium of VET over general secondary education is above 20% in all regions. It is highest in the North and Northeast, where salaries for VET graduates are even higher than in Bangkok. Moreover, VET graduates also show higher rates of insertion. At the national level, nine out of ten skilled workers find qualified jobs, and the share is above 90% in every region (OECD, 2019<sup>[58]</sup>).

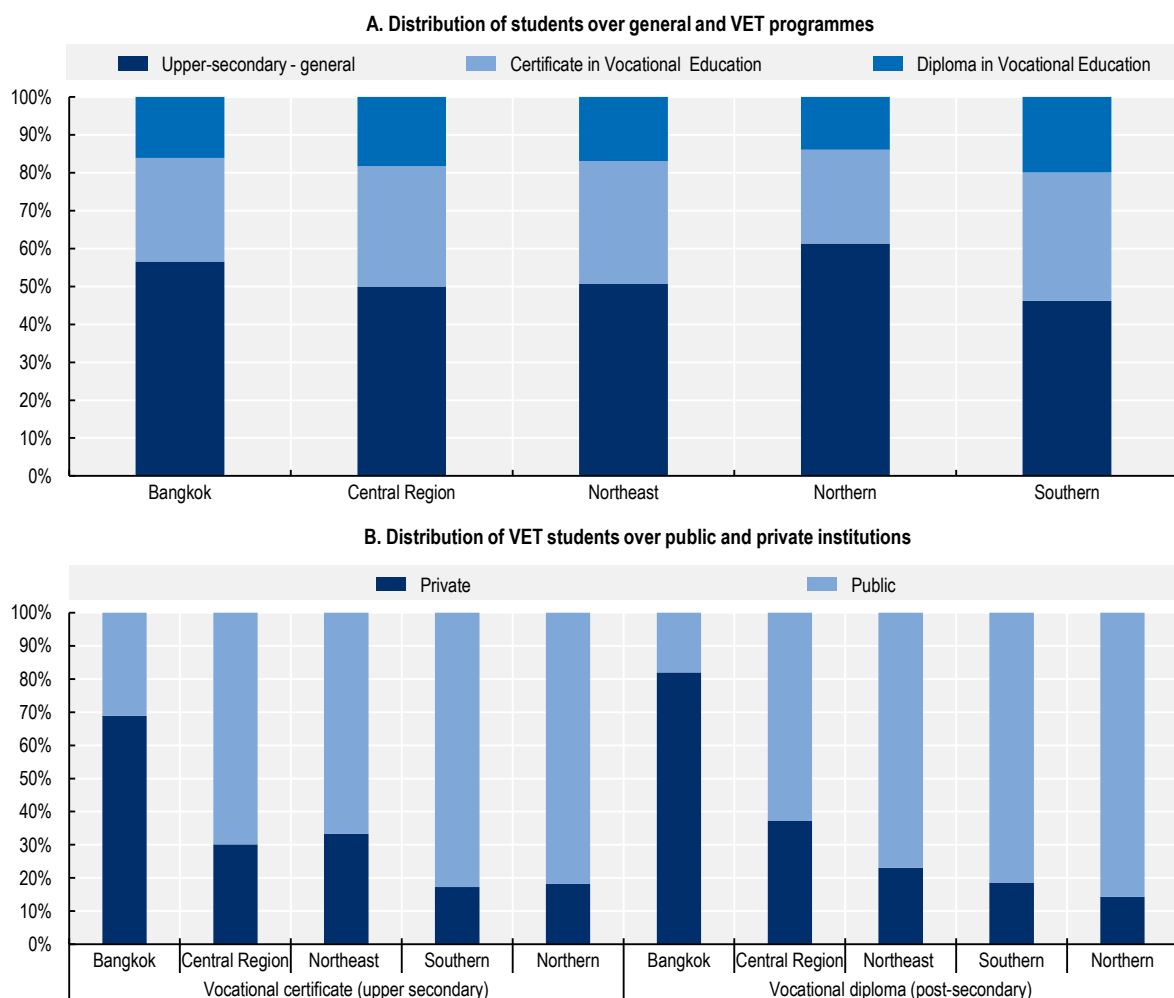
#### *Some regions rely more on private VET providers than others*

Looking at the students currently enrolled in VET programmes (certificate and diploma) or general upper secondary programmes, the distribution looks very similar across regions (see Figure 2.12). Enrolment in VET relative to general education is highest in the South, Northeast and Central regions. Looking only at the upper secondary level, VET (i.e. certificates only) accounts for around one in three students on average, with the share being highest in the Southern region and lowest in the northern region. Within VET, the distribution over certificate and diploma programmes also only slightly differ between regions, ranging from 63% of VET students in certificate programmes in Bangkok and the Southern region to 66% in the Northeast region.

Regional differences are more outspoken for the fraction of VET students enrolled in private institutions. In Bangkok, almost 70% of VET students in certificate programmes and 80% of VET students in diploma programmes are in private institutions. This is the case for less than 20% of students in the Southern and Northern regions. This partially reflects the different mix of provision in Bangkok compared to other regions, with public institutions focusing more often on more technical fields –which are in lower demand in the

Bangkok region. As discussed above, strong quality assurance mechanisms are important for private providers. Moreover, as private VET institutions often charge higher tuition fees than public providers, it needs to be ensured that this does not create barriers to access, especially for disadvantaged groups.

**Figure 2.12. VET students in Bangkok are much more likely to be enrolled in private institutions than VET students from other regions**



Note: "Upper secondary- general" includes all students in year 10, year 11 and year 12 in institutions that fall under the OBEC. This number of upper secondary general students is augmented with the number of upper secondary general students in private institutions. As the latter is only available for Bangkok and the aggregate of other regions, the private-to-public ratio of the non-Bangkok region is applied equally to the Central Region, Northeast, Northern and Southern Regions.

Source: Office of the Vocational Education Commission (2019<sup>[22]</sup>), Student data statistics for the year 2019, [http://www.mis.moe.go.th/index.php?option=com\\_content&view=article&id=657:%E0%B8%9B%E0%B8%A3%E0%B8%B0%E0%B8%88%E0%B8%B3%E0%B8%9B%E0%B8%B5-2562&catid=173&Itemid=114](http://www.mis.moe.go.th/index.php?option=com_content&view=article&id=657:%E0%B8%9B%E0%B8%A3%E0%B8%B0%E0%B8%88%E0%B8%B3%E0%B8%9B%E0%B8%B5-2562&catid=173&Itemid=114).

Differences by region also can be seen in data on VET institutions. The number of institutions varies strongly between regions, with only 98 VET institutions in the Bangkok region and 299 in the Northeast region. Bangkok and the Northeast region are the only regions to have more private than public VET institutions. By contrast, in the Northern region only 38% of all VET institutions are private. The differences in the number of institutions of course partially reflect differences in the size of the VET student population. When looking at the number of institutions relative to the total number of students, difference between



regions are relatively small, with the exception of the Southern region. While other regions have between 1 100 and 1 200 VET students per VET institution on average, in the Southern region there are only 830 VET students per institution. When looking at the number of institutions relative to the total youth population (aged 15 to 24), differences are a bit more outspoken. The Bangkok and Northern region have over 12 000 youth per VET institution, while the Central and Southern region only have around 10 000 youth per VET institution.

**Table 2.1. The Southern region has the most VET institutions relative to the student population**

Number of VET institutions, absolute numbers and relative to student population

	Number of institutions		Number of VET students relative to number of VET institution	Number of youth relative to number of VET institutions
	Public	Private		
Bangkok	20	78	1 114	12 959
Central Region	123	110	1 194	10 358
Northeast	118	181	1 177	11 489
Southern	81	62	831	10 018
Northern	87	53	1 103	12 298

Note: Only includes institutions that fall under the responsibility of the OVEC. The number of students or youth per institution refers to private and public institutions combined. The number of VET students refers to students in certificate and diploma programmes under the OVEC. The number of youth refers to the total population aged 15 to 24.

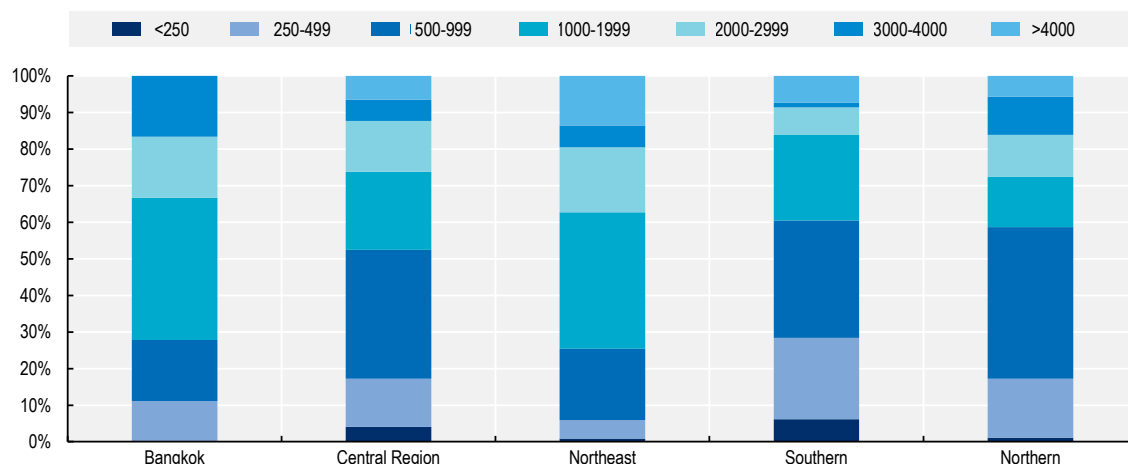
Source: Authors' calculations based on Office of the Vocational Education Commission (2019<sup>[59]</sup>), Information on public-private education institutions, <http://techno.vec.go.th/ประชาสัมพันธ์/รายละเอียดข่าว/tabid/766/ArticleId/5977/language/th-TH/.aspx>.

### *In some regions VET institutions are small and may face quality issues*

Data on the number of students per public VET institution show large differences in institution size, with the smallest public VET institution having only 30 students (located in the Northeast region) and the largest having just over 7 500 students (in the Central and the Northeast region). In the Southern and Northern regions around 60% of public VET institutions have fewer than 1 000 students, while in the Bangkok and Northeast region this is only the case for less than 30% of institutions (see Figure 2.13). The Southern region has the largest share of small institutions (26%), i.e. with fewer than 500 students, and the smallest share of institutions with more than 3 000 students (9%). As discussed above, too small VET institutions can problems in achieving an acceptable quality level, and some countries have started consolidation processes in such cases (see Box 2.4).

**Figure 2.13. Public VET institutions in the Northeast and Bangkok region are larger than in other regions**

Size distribution of public VET institutions (size measured as number of students)



Note: Only includes institutions that fall under the responsibility of the OVEC.

Source: Authors' calculations base on Office of the Vocational Education Commission (2019<sup>[22]</sup>), Student data statistics for the year 2019, [http://www.mis.moe.go.th/index.php?option=com\\_content&view=article&id=657:%E0%B8%9B%E0%B8%A3%E0%B8%B0%E0%B8%88%E0%B8%B3%E0%B8%9B%E0%B8%B5-2562&catid=173&Itemid=114](http://www.mis.moe.go.th/index.php?option=com_content&view=article&id=657:%E0%B8%9B%E0%B8%A3%E0%B8%B0%E0%B8%88%E0%B8%B3%E0%B8%9B%E0%B8%B5-2562&catid=173&Itemid=114).

Technology has the potential to increase access to a wide range of VET programmes, also in remote or rural areas with few and/or small VET institutions. For example, students can access online course or modules that are not delivered in their local VET institution. Likewise, virtual reality and simulators can give students access to technologies or virtual workplaces that are difficult to access in their local area. While these technologies have many potential benefits, including through their scalability, they require an initial investment, both in equipment and infrastructure, and in the skills of teachers. Box 2.11 provides examples of the use of technology to support students in accessing the required training content.

When introducing technology in VET, it needs to be ensured that this does not exacerbate existing inequalities. The COVID-19 outbreak and the closing of schools have shown that distance learning can result in important inequalities in access to education. The digital divide hugely impacts access to education, especially for students without computers and home Internet (Thailand Development Research Institute, 2021<sup>[60]</sup>). For example, only 21% of Thai households have computers, with important differences between Bangkok (41%) and the rest of the regions.

### Box 2.11. Using technology to facilitate access to high-quality VET

#### Norway: E-platforms for apprenticeships

In Norway, apprentices are now able to complete training requirements, provide documents and access government assistance through specialised e-platforms. One popular system known as OLKWEB has been optimised for use by training offices, who are able to follow up on their apprentices and generate reports that document the apprentice's activities and outputs. Apprentices are also able to interact with each other through the system, and can use the interface to record meetings and receive information. The employer is also able to monitor the apprentice's progress in off-the-job training.

In the hyper-rural Norwegian area of Nordland, the customised apprentice interface allows apprentices to fulfil their training requirements without travelling vast distances. E-platforms also remove administrative burdens and allows young people to flexibly complete their apprenticeship requirements.

### **United States: Micro-industry engagement**

In Louisiana (United States), a multifaceted effort that combines technology and hands-on teacher support connects rural students with employers. A major component of this micro-industry engagement is a strategic partnership with Nepris, a company that virtually connects schools, teachers and students with workplace experts and professional mentors. Through this partnership, teachers have engaged industry experts to conduct interviews with students, provide feedback on a capstone or other project or judge student competitions. The micro-industry engagement is intended to be a series of cumulatively structured engagements and is designed around four key tenets:

- Virtual access to workplace experts in every industry sector.
- Teachers are empowered with the technologies and curated instructional resources.
- Schools offer virtual and in-school exercises akin to onsite workplace-based learning.
- Students prepare with workplace experts, mastering sophisticated communication skills.

### **Singapore: Virtual and augmented reality**

The Institute of Technical Education (ITE) is a principal provider of career and technical education in Singapore. In the past, theory was largely taught using conventional methods, while practical lessons were given in authentic learning spaces such as in an operational hotel, restaurant, aeroplane hangar, etc. If authentic learning spaces were too costly or impractical, students learned in classroom environments through role-plays. While lecturers tried to incorporate situated learning into their lessons as much as possible, safety concerns and high costs made it hard to replicate certain work environments or tasks. In view of the need for more authentic learning experiences, the ITE decided to introduce two types of immersive technologies:

- *3D virtual reality* technology is particularly useful when it is not possible for learners to access real-world work sites and when such sites pose dangers to learners. For example, students enrolled in the Marine and Offshore Technology course used a multi-wall 3D VR system to practice their skills on a simulated oil rig platform. Using this ICT, students were able to safely train for adverse weather conditions such as heavy rain and strong wind, and learned to adjust to a variety of environmental conditions and associated job hazards.
- *3D augmented reality* applications enable students to interact with real world environment using real time data, thus contextualizing knowledge for just-in-time learning. For example, students in the Aerospace Technology course were able to load into their mobile devices 3D aircraft engine models and watch simulations of these engine parts in the AR viewer. These 3D simulations helped them to visualise details of complex systems and the operational flow inside the equipment.

The schools worked closely with technology solution providers to design relevant learning activities for students, based on the curriculum requirements.

Source: UNESCO (2017<sup>[61]</sup>), *Beyond Access: ICT-enhanced Innovative Pedagogy in TVET in the Asia-Pacific*, <https://bangkok.unesco.org/sites/default/files/assets/article/ICT%20in%20Education/TVET/TVET%20pub.PDF>; Advance CTE (2020<sup>[62]</sup>), *CTE Distance Learning in Rural Communities*, <https://cte.careertech.org/sites/default/files/documents/fact-sheets/CTE Distance Learning Rural Fact Sheet 2020.pdf>.

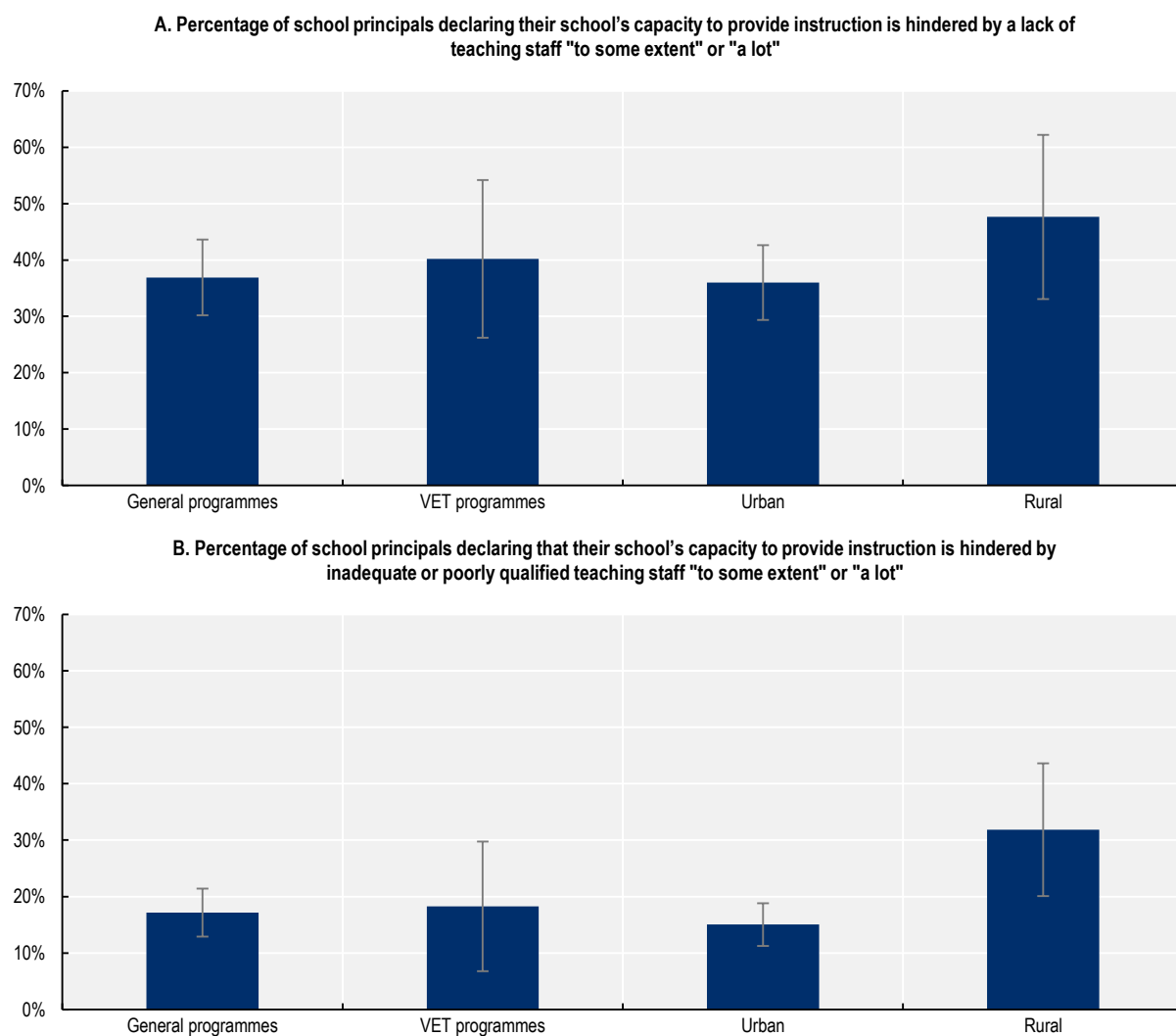
*There are important differences between regions in the quality of VET teaching*

Regional differences do not only exist in enrolment and provision of VET, but also in the quality of VET provision. Teachers play a key role in the quality of VET. One factor that could contribute to regional differences in VET quality is the low supply of qualified teachers in rural areas. OECD analysis presented in Chapter 3 shows that the education sector is the sector experiencing the largest shortages in the Thai labour market. Shortages of qualified teachers could result in higher student-teacher ratios and in the reliance on under-qualified teachers. It is not only important to attract a sufficient number of VET teachers, but also to ensure that these teachers have the right skills. Although all teachers in Thailand are obliged to possess an undergraduate degree, a recent World Bank report (Lathapipat, 2015<sup>[63]</sup>) highlights that while one out of five teachers in schools under the OBEC in Bangkok also have a graduate degree, only one out of 11 teachers have graduate degrees in the Mae Hong Son province, where schools are smaller in size on average. In addition, teachers in Bangkok have more years of experience on average.

As Figure 2.14 shows, principals in rural upper secondary education institutions in Thailand are more likely than those in urban areas to report that a lack of teaching staff hinders the institution's capacity to provide instruction. Likewise, principals in rural education institutions in Thailand are more likely to report issues around inadequately or poorly qualified teaching staff than in urban areas. These challenges are common across VET and general education institutions.

Student-teacher ratios in public VET institutions differ between regions, ranging from 20 VET students per teacher on average in the Southern region to 29 in the Northeast region (see Figure 2.15). In all regions except Bangkok, the student-teacher ratio is higher in VET than in general education (all levels under the OBEC). On average across OECD countries, the student-teacher ratio in upper secondary education equals 13 both for general and vocational programmes (OECD, 2020<sup>[64]</sup>).<sup>5</sup> In about 40% of OECD countries with data, the student-teacher ratio is greater in upper secondary vocational programmes than in general ones. A combination of several factors may influence the variation in student-teacher ratios between vocational and general upper secondary programmes. In some countries, vocational programmes are significantly work-based, so vocational students spend considerable time outside the school resulting in fewer teachers. Countries where more than half of upper secondary vocational students are enrolled in combined school- and work-based programmes tend to have an equal or higher number of students per teacher in vocational than in general programmes. In contrast, in most countries where all upper secondary vocational students are enrolled in school-based programmes, the student-teacher ratio in general programmes tends to be the same or higher than in vocational ones. However, programme type alone does not explain all differences between student-teacher ratio in vocational and general upper secondary education. Other factors, such as field of study, also influence the student-teacher ratio in vocational programmes. Some fields require greater instructor attention and supervision, particularly those where students have access to more sophisticated equipment. This may be particularly the case in technical fields such as engineering, manufacturing and construction, or some specialties in health and welfare. Smaller classes are often seen as beneficial, because they allow teachers to focus more on the needs of individual students and reduce the amount of class time needed to deal with disruptions. Yet, while there is some evidence that smaller classes may benefit specific groups of students, such as those from disadvantaged backgrounds, overall evidence of the effect of class size on student performance is mixed (OECD, 2020<sup>[64]</sup>).

**Figure 2.14. Teacher shortages and quality differ between rural and urban areas**

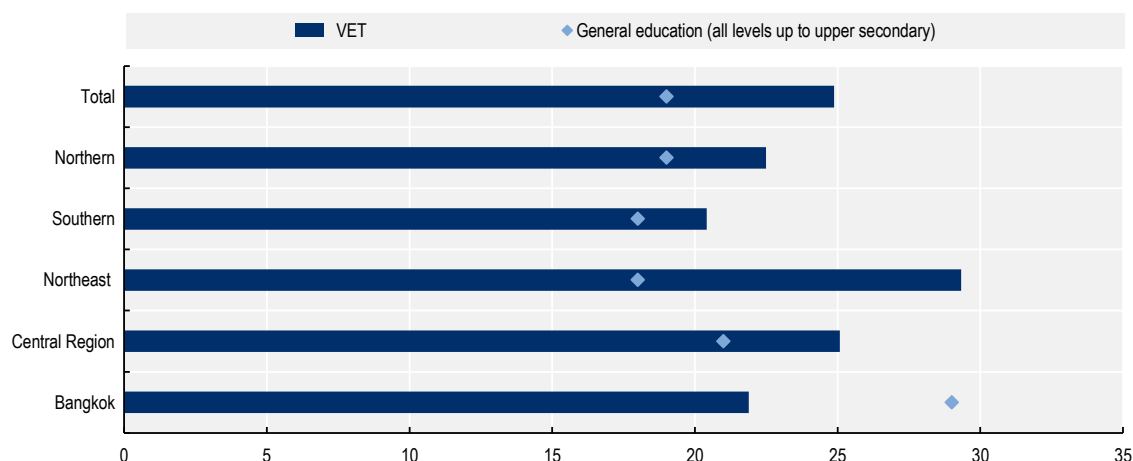


Note: The vertical lines represent 90% confidence intervals.

Source: Authors' elaboration based on PISA (2018<sub>[20]</sub>), PISA 2018 database, <https://www.oecd.org/pisa/data/2018database/>.

**Figure 2.15. Student-teacher ratios in VET differ strongly between regions**

Number of students per teacher in public institutions



Note: Includes only public VET institutions under the responsibility of the OVEC.

Source: Authors' calculations based on Office of the Vocational Education Commission (2019<sup>[22]</sup>), Student data statistics for the year 2019, [http://www.mis.moe.go.th/index.php?option=com\\_content&view=article&id=657:%E0%B8%9B%E0%B8%A3%E0%B8%B0%E0%B8%88%E0%B8%B3%E0%B8%9B%E0%B8%B5-2562&catid=173&Itemid=114](http://www.mis.moe.go.th/index.php?option=com_content&view=article&id=657:%E0%B8%9B%E0%B8%A3%E0%B8%B0%E0%B8%88%E0%B8%B3%E0%B8%9B%E0%B8%B5-2562&catid=173&Itemid=114).

From a policy perspective, the regional gaps in teacher supply and quality can be addressed by strategically increasing investments and re-structuring the incentives currently in place for teacher placement (OECD, 2020<sup>[53]</sup>). The present teacher management system allows teachers to select their location once they have been in service for over two years, with salaries of teachers in remote areas being lower on average. This is partly driven by the fact that these tend to be younger and less experienced teachers compared to those working in cities. For teachers with official permanent employment, salaries cannot vary between locations. In this context, it is positive that Thailand has been working on improving the incentives in place for younger teachers. At the request of the Ministry of Education, the Ministry of Finance has agreed on providing financial support for rural teachers working in hardship locations, helping them to sustain their daily lives and hoping to encourage them to keep teaching in hard-to-reach locations for more than two years. In Australia, certain states provide targeted incentives and other support measures for teachers to teach in remote areas to experience teacher shortages (see Box 2.12). In VET, one strategy for alleviating teacher shortages is to attract industry professionals, who can bring their industry knowledge and experience to classroom (see Box 2.13 for examples). Partnerships with employers can facilitate the involvement of industry professionals in VET teaching. Such a strategy should be combined with flexible training and qualification programmes in place to allow these industry professionals to also develop the necessary pedagogical skills (OECD, 2021<sup>[65]</sup>).

### Box 2.12. Attracting teachers to remote areas in Australia

#### Queensland

The state of Queensland – which has a population of 4.69 million (2013) and area of 1.85 million km<sup>2</sup> – offers a range of benefits, with a very clear structure for incentives, based on the remoteness of the school. These benefits include subsidised relocation, housing, salary supplements, special leave and induction support.

In addition, the regional government is also concerned about increasing the quality of teachers recruited to remote areas. The state of Queensland runs two schemes targeted at high achieving teacher candidates in the final year of their initial teacher education programme. Rural and Remote – Graduate Teacher Scholarships provide a one-off payment of AUD 15 000 and an offer of permanent employment to 40 high-achieving primary or secondary pre-service teachers, committing to teaching in remote areas. Similar scholarships are offered under the Rural and Remote – STEM Graduate Teacher Scholarship scheme, but targeted at 32 high achieving pre-service teachers with a science, technology, engineering and maths (STEM) specialisation.

#### Northern Territory

In the Northern Territory, the region with the lowest population density, a number of initiatives have been initiated by the government and schools to attract teachers to remote schools. Approaches include:

- Collaborating with universities outside the Northern Territory to offer practicum places to students from other states that have an interest in remote schools and teaching indigenous students.
- Providing opportunities for school leaders and experienced teachers in remote schools to participate in roadshows and other events aimed at recruiting teachers across Australia.
- Offering financial and other incentives to teach in remote schools. For example: furnished housing, and subsidised or free electricity; relocation allowances; free airfares out of isolated locations; increased pay through incentive allowances, and salary progression; extra business days to access services not available in remote locations.
- Providing professional development opportunities through study-leave incentives and online courses. A range of online courses are available, which can be included as evidence in a teacher's portfolio to support their progression to "proficient" and "highly accomplished" and "lead" teacher status, according to the Australian Professional Standards for Teachers. In addition, teachers in remote schools are able to accumulate points for paid study leave on full or half pay.

Source: OECD (2018<sup>[66]</sup>), Promising Practice - Attracting Teachers to Schools in Rural and Remote Areas in Australia, <http://www.oecdteacherready.org/promising-practice/attracting-teachers-to-schools-in-rural-and-remote-areas-in-australia/>.



### Box 2.13. Attracting industry professionals to VET teaching

#### Relaxing entry requirements

##### *United States*

In the United States, relaxed qualification requirements are considered to be a tool to smooth inflows from industry into teaching in VET. For example, 15 states recently passed Career Technical Education (CTE) teacher certification or development policies to address the recruitment and certification, as well as the preparation and professional development, of CTE faculty and staff. Ohio grants alternatively licensed CTE teachers a four year teaching license known as an Alternative Resident Educator license. Missouri created a one-year teaching certificate for visiting scholars from industry who are part of a business-education partnership and have relevant education credentials. A recent law in Michigan allows non-certified, non-endorsed individuals to teach in certain VET programmes<sup>6</sup> as long as they meet certain requirements, such as having acquired 2 years of professional experience in the relevant subject area during the past 10 years. The impact of these measures remains to be seen, but in the context of restrictive and somewhat complicated licensing structures and certification policies (e.g. VET teachers needing to complete state-approved programmes to obtain a teacher certificate), such flexibility can encourage mobility between industry and VET teaching.

##### *Japan*

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.

#### Combining teaching and work in industry

##### *Flanders (Belgium)*

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). The training programme is financed by the government and the European Social Fund. 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.

##### *United States*

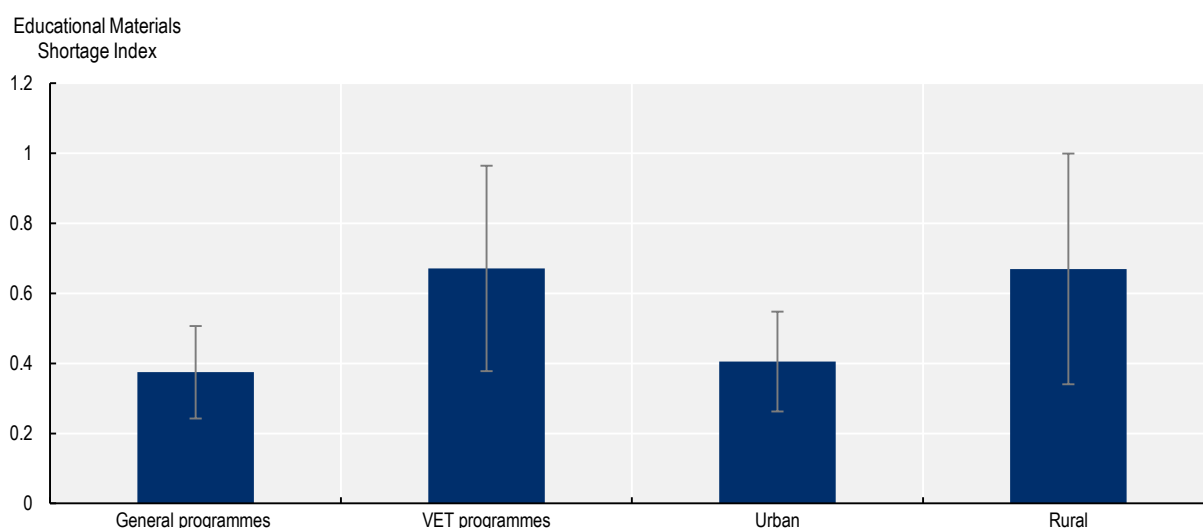
Community colleges in the United States increasingly hire part-time adjunct faculty to teach in VET courses. For example, in California, the expansion of VET programmes has increased the demand for highly specialised faculty who teach part time while remaining professionally active in their field. These teachers can have up to 67% of the paid workload of their full-time counterparts. Similarly, in Colorado community colleges have increased their hiring of part-time adjunct instructors by 44% between 2007 and 2015 (compared to 17% for full-time faculty), in part due to increasing delivery of VET courses. This follows national trends in college and university instructional employment over the past decades, driven by declining financial support. Adjunct faculty earn about USD 68 a week (or USD 21 288 annually), compared to an average of USD 188 a week (or USD 53 000-57 000 annually) for full-time faculty.

Source: Adapted from OECD (2021<sup>[65]</sup>), *Teachers and Leaders in Vocational Education and Training, OECD Reviews of Vocational Education and Training*, <https://doi.org/10.1787/59d4fbb1-en>.

Beyond differences in teacher quality between urban and rural sectors, there are other disparities that are visible along geographical divisions, such as insufficient material resources and physical infrastructure. Figure 2.16 shows that according to PISA data, material shortages are more intensive in VET programmes in Thailand than in general programmes, and in rural areas than in urban areas.<sup>7</sup>

As gaps in physical infrastructure and learning material contribute to low the quality of teaching instruction, future increases in public education expenditure should be oriented towards reducing these gaps as well. In VET, a strong work-based learning system reduces the need for expensive equipment, as students learn a large proportion of the curriculum in the workplace. As discussed in chapter 3, for work-based learning to be effective, workplace trainers need to have a good understanding of what skills they need to develop in their students and also have the right skills to support the learning of the students. Other forms of collaboration between VET and employers can also alleviate the need for expensive equipment in schools, such as for example the establishment of employer-led training centres (see Box 2.14). As discussed above, technology can also play a role, as the economies of scale associated to VR, AR and simulators imply that these technologies can be used in a large number of VET schools and in different fields-of-study, which reduces the need for schools to invest in expensive equipment. Moreover, these technology solutions can be updated regularly following the latest developments in industry, reducing costs related to investment in expensive equipment.

**Figure 2.16. VET institutions in upper secondary education show bigger material resource shortages than general schools, and shortages are larger in rural than in urban areas**



Note: The vertical lines represent 90% confidence intervals.

Source: Authors' elaboration based on PISA (2018<sub>[20]</sub>), PISA 2018 database, <https://www.oecd.org/pisa/data/2018database/>.

## Box 2.14. Industry-led training centres

### Malaysia

The Penang Skills Development Centre (PSDC) was established in 1989 and is the first tripartite (i.e. employers, government and academia), industry-led skills training and education centre in Malaysia. Since its inception, the PSDC has grown to become one of the learning institutions in the country, dedicated to meet the immediate human resource needs of the business community and to support and strengthen business requirements. The Centre has 224 members, of which 21 are founding members. Over a period of 29 years, the centre has trained over 200 000 participants through more than 10 000 courses. One of its current programmes is the German dual vocational programme, which trains apprentices through a two-pronged approach, where training is conducted at both workplace and PSDC in actual work conditions under the guidance of competent coaches and classroom trainers. Likewise, the Malaysian meister programme –built on the German meister or master craftsman programmes- takes a dual approach to upskill graduates and reskill the existing Mechatronic Engineering and Precision Machining workforce.

### Bangladesh

The Centre of Excellence for Leather Sector Skills (COEL) was established in 2009 in Bangladesh by the Leather Industry Skills Council (ISC) and was registered as not-for-profit organisation under the Company Act. It is a good example of employer-led initiative that leads to qualifications recognised in the public education and training system. The ISC leather manages this initiative. It is a dual apprenticeship model with classroom training in the COEL's training Centre for three months and workplace training in the factory for nine months. The training centre of COEL is situated outside the capital town at Chandra, Gazipur, which serves as the hub of COEL's Leather Skill Training Programs and has the capacity to train 300 trainees at a time. The main objective of COEL is to increase and improve the overall skill level of the workforce of the leather sector to meet the sector's immediate and long-term skills needs. The COEL are targeting unemployed youth from low socio-economic backgrounds, including women from low-income families who are willing to be engaged in work and increase their earnings and livelihoods.

### France

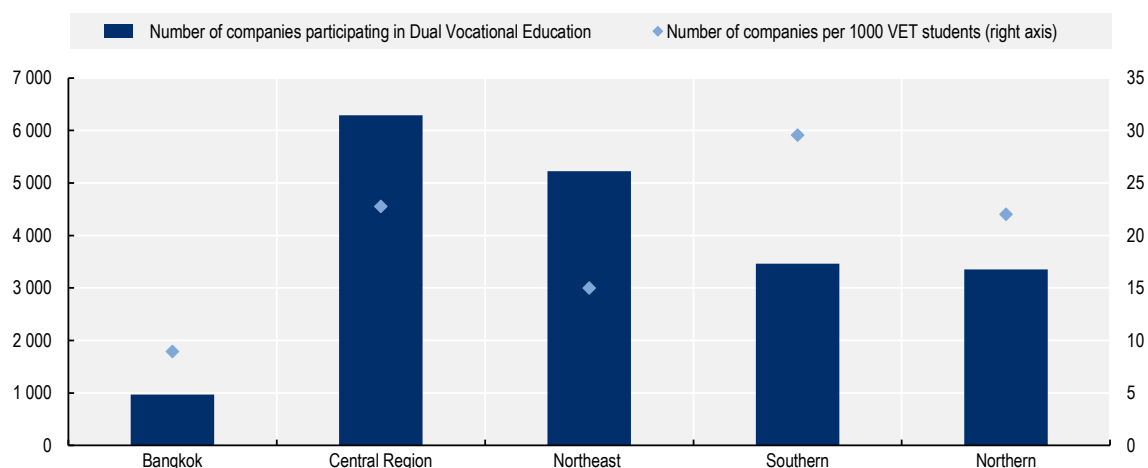
In France, the 2018 *loi Avenir Professionnel* (Professional Future law) opens up the possibility of establishing and operating apprenticeship training centres (CFA) to employers. The CFA determines the organisation of the training together with the enterprise providing the work-based learning opportunity and with the student. The training needs to respect the principal of apprenticeship training (i.e. alternating between classroom-based and work-based training) and the qualification frameworks. These CFAs can benefit from public funding, but only if they have received a quality certificate. Since the creation of this system in 2019, numerous –mostly large- firms have taken the opportunity to open their own apprenticeship training centre(s), often as a way to tackle skill shortages. By the end of 2020, around 30 CFAs led by employers were operational, and a further 20-30 were in the process of being set up.

Source: Penang Skills Development Centre (2019<sup>[67]</sup>), *Annual Report 2019*, <https://www.psd.org.my/documents/2019-PSDC-annual-report.pdf> ; Ministère du Travail (2019<sup>[68]</sup>), *Ouvrir votre propre CFA*, [https://travail-emploi.gouv.fr/IMG/pdf/ouvrir\\_son\\_cfa-print.pdf](https://travail-emploi.gouv.fr/IMG/pdf/ouvrir_son_cfa-print.pdf) ; Management de la Formation (2020<sup>[69]</sup>), *Le CFA d'entreprise: Qui a osé de franchir le pas? (2/2)*, <https://www.managementdelaformation.fr/reforme-formation-professionnelle/2020/11/17/le-cfa-d-entreprise-qui-a-ose-franchir-le-pas-2-2/> ; OECD/ILO (2017<sup>[61]</sup>), *Engaging Employers in Apprenticeship Opportunities: Making It Happen Locally*, <https://doi.org/10.1787/9789264266681-en>.

Finally, another dimension of quality in regard to regional differences is access to work-based learning opportunities. As discussed in Chapter 3, work-based learning is integrated in school-based VET programmes and those programmes can also be delivered as dual programmes, taking place for a large part in the workplace. But the roll-out of the dual system seems to differ between regions, see Figure 2.17. While data on student participation in dual programmes by region are not available, data on the number of companies participating in the system show some interesting regional differences. The number of employers in the dual system ranges from around 1 000 in Bangkok to around 6 300 in the central region. When expressing this relative to the total number of students enrolled in vocational programmes (certificate and diploma, irrespective of whether they are part of the dual system or not), substantial differences remain: the Southern region has around 30 participating companies per 1 000 VET students, the Central and Northern region between 25 and 30, the Northeast region around 15, and the Bangkok region only just under 10.

While the availability of work-based learning (WBL) opportunities depends strongly on the economic realities of the region, it is important to ensure that companies from different sizes and sectors participate. This will also make the provision better aligned with the needs of all the different sectors of the economy, as further discussed in Chapter 3.

**Figure 2.17. The roll-out of dual system differs between regions**



Note: The number of VET students include all students in vocational certificate or diploma programmes under the OVEC.

Source: Dual Vocational Education Center (2020<sup>[70]</sup>), Report on the Number of Companies participating in Dual Vocational Education, <https://dve.vec.go.th/index.php?app/report/ajax&m>.

## Conclusion

In order to achieve the Thai government's objective of expanding the size of the VET sector, and to overcome reported skill shortages, VET programmes and institutions should become more attractive. This will require actions on different fronts. First, vocational students need to be able to move easily into further learning opportunities, both vocational and general education ones. This is essential to increase the status of VET, and also to meet the needs of the labour market. Such transitions are not very common in Thailand: less than 10% of students in tertiary education come from a VET background. Second, the VET system needs to be easy to navigate. The Thai system consists of a large variety of institutions, reflecting a multiplicity of stakeholders, including different ministries and agencies, and parallel governance arrangements. This may support diversity and innovation, but it also creates confusion for students and employers. A simpler system would be easier to co-ordinate, and more efficient financially. Third, higher

quality programmes with strong labour market outcomes will automatically make the VET system more attractive to students. However, out-of-date curricula, lack of resources and equipment are mentioned by different stakeholders as key issues for the Thai VET system. Quality issues may be especially present in private and small institutions. High quality of VET programmes, based on sound quality assurance mechanisms, is a precondition for the growth of the sector and the development of pathways.

Expanding the VET system should happen in an inclusive way, creating opportunities for all. Increasing opportunities for groups who are currently underrepresented in VET, including women and adults, will make the system more equitable and can contribute to tackling skill shortages in the Thai labour market. Career guidance can help break gender stereotypes and help students make informed choices and navigate the currently complex VET landscape. VET could play an important role in up-skilling and re-skilling of adults in a changing world of work, but additional flexibility and support is needed to help overcome barriers that adults often face when it comes to training participation. Finally, regional disparities in the quality of VET, in terms of the availability of qualified teachers and of adequate teaching resources, are substantial, and these have to be better monitored and tackled.

## Key recommendations

### Improving access to VET

#### *Building effective pathways and fostering transparency*

- Collect more and better data to analyse to which extent VET graduates successfully continue into further education, including graduate tracer surveys.
- Build a dialogue with higher education institutions, to promote the access for VET graduates to relevant programmes and offer bridging programmes that provide remediation in foundation skills and general education subjects.
- Ensure that when students move from postsecondary VET programmes (diploma) to other tertiary programmes that they receive recognition for the coursework they have already completed.
- Develop and implement systematic arrangements, including articulation frameworks, to improve articulation between VET and postsecondary institutions.
- Ensure that all students are aware of the different routes to postsecondary VET and general education programmes, through career guidance. Such guidance activities should make ample use of information on labour market prospects, and provide the opportunity to VET students to interact with labour market actors.
- Put in place effective measures of co-ordination between the different VET stakeholders, and clarify roles and responsibilities to make the system more transparent and to avoid duplications.

#### *Strengthening quality*

- Reduce fragmentation and consolidate small programmes and institutions by merging institutions -when feasible. Such consolidations may need to be accompanied by other interventions to minimise the negative effects on students (e.g. when they increase transportation time and costs).
- Strengthen quality assurance mechanisms, especially for private providers. These quality assurance mechanisms need to be transparent for the VET providers, and the outcomes of quality evaluations need to be communicated transparently.

- Avoid cutting funding for the VET system in the ongoing COVID-19 crisis, and even consider raising the funding in VET, with both effectiveness and equity in mind, at least to similar levels as general education.

### **Reducing inequality in access and quality**

#### ***Making VET work for all***

- Make sure that all disadvantaged students have access to adequate financial support when needed, including in postsecondary VET.
- Use career guidance to make girls aware of the opportunities in VET, broadening the occupation choices they consider. Strong career guidance is built on high quality information and data on pathways and outcomes.
- Adapt the system to the needs of adults, providing programmes that are flexible and developing part-time and modular modes of study.
- Allow for course exemptions when adults already have relevant skills and/or work experiences, and certify skills through RPL mechanisms that are easily accessible and not too burdensome. Build incentives for VET institutions to engage in RPL.

#### ***Tackling regional inequalities in VET quality***

- Encourage qualified VET teachers to work in rural schools through the use of targeted financial and non-financial incentives.
- Enable industry professionals to teach in VET institutions as a way to overcome shortages but also to bring up-to-date industry knowledge and experience to the VET classroom. Facilitate and encourage this especially in regions and/or fields that are facing VET teacher shortages.
- Strengthen ties between VET institutions and local employers to encourage employers to provide work-based learning opportunities and/or set up joint training centres. This is particularly important in areas with small or under-resourced schools that have a limited offer of VET programmes to support students in accessing a wider set of opportunities and relevant equipment and technology.
- Explore the potential of new technologies in increasing access for students to a broad set of VET courses and practical experiences. Carefully weigh the benefits of new technologies against their costs in terms of equipment and infrastructure investment and teacher training expenses.

## **References**

- Advance CTE (2020), *CTE Distance Learning in Rural Communities*, [62]  
[https://cte.careertech.org/sites/default/files/documents/fact-sheets/CTE Distance Learning Rural Fact Sheet 2020.pdf](https://cte.careertech.org/sites/default/files/documents/fact-sheets/CTE%20Distance%20Learning%20Rural%20Fact%20Sheet%202020.pdf).
- Alonso Soto, D. (2020), "Technology and the future of work in emerging economies: What is different", *OECD Social, Employment and Migration Working Papers*, No. 236, OECD Publishing, Paris, <https://dx.doi.org/10.1787/55354f8f-en>. [47]

- Bergseng, B. (2019), *Vocational Education and Training in Bulgaria: Governance and Funding*, OECD Reviews of Vocational Education and Training, OECD Publishing, Paris, <https://dx.doi.org/10.1787/25bad018-en>. [29]
- Burapharat, C. and S. Chupradit (2009), *Vocational and cooperative education in Thailand: A Presentation*, Research Institute on Contemporary Southeast Asia. [25]
- Center for Reproductive Rights (2005), *Women of the world: laws and policies affecting their reproductive lives East and Southeast Asia*, The Center for Reproductive Rights, New York, <https://reproductiverights.org/women-of-the-world-laws-and-policies-affecting-their-reproductive-lives-east-and-southeast-asia/>. [31]
- Chalapati, N. and S. Chalapati (2020), "Building a skilled workforce: Public discourses on vocational education in Thailand", *International Journal for Research in Vocational Education and Training*, Vol. 7/1, pp. 67-90, <http://dx.doi.org/10.13152/ijrvet.7.1.4>. [3]
- Chandoevrit, W. (2006), *Risk and Vulnerability in Thailand: A Quantitative and Qualitative Assessment*, <http://tdri.or.th/wp-content/uploads/2013/04/Risk-and-Vulnerability-in-Thailand-July-2007.pdf>. [32]
- Chantapong, S. and K. Lertpienthum (2018), "Skills Mismatch: A Challenge for Education 4.0", *Bank of Thailand Monetary Policy Group (MPG) Economic Review*, [https://www.bot.or.th/Thai/ResearchAndPublications/articles/Pages/Article\\_24Jul2018.aspx](https://www.bot.or.th/Thai/ResearchAndPublications/articles/Pages/Article_24Jul2018.aspx). [2]
- Dual Vocational Education Center (2020), *Report on the Number of Companies participating in Dual Vocational Education*, <https://dve.vec.go.th/index.php?app/report/ajax&m>. [70]
- Equitable Education Fund (2018), *Equitable Education Fund brochure*, [https://www.eef.or.th/wp-content/uploads/2019/07/eef\\_brochureEng.pdf](https://www.eef.or.th/wp-content/uploads/2019/07/eef_brochureEng.pdf). [34]
- Fazekas, M. (2012), "School Funding Formulas: Review of Main Characteristics and Impacts", *OECD Education Working Papers*, No. 74, OECD Publishing, Paris, <https://dx.doi.org/10.1787/5k993xw27cd3-en>. [28]
- Field, S. et al. (2012), *A Skills beyond School Review of Denmark*, OECD Reviews of Vocational Education and Training, OECD Publishing, Paris, <https://dx.doi.org/10.1787/9789264173668-en>. [56]
- Goncalves, C. (2019), *Financing TVET: A Comparative Analysis in Six Asian Countries*, Agence Française de Développement, <https://www.afd.fr/en/ressources/financing-tvet-comparative-analysis-six-asian-countries>. [7]
- Heiniger, M. and C. Imdorf (2018), "The role of vocational education in the transmission of gender segregation from education to employment: Switzerland and Bulgaria compared", *Journal for Labour Market Research*, Vol. 52/1, <http://dx.doi.org/10.1186/s12651-018-0248-6>. [36]
- Hughes, D. et al. (2016), *Careers education : international literature review*, Education Endowment Foundation, <https://www.educationandemployers.org/research/careers-education-international-literature-review/>. [43]
- Jantrakool, R. (2016), *An Analysis of the Student Numbers' right to the Private Vocational Schools in Thailand*, [https://www.academia.edu/29578796/An\\_Analysis\\_of\\_the\\_Student\\_Numbers\\_right\\_to\\_the\\_Private\\_Vocational\\_Schools\\_in\\_THAILAND](https://www.academia.edu/29578796/An_Analysis_of_the_Student_Numbers_right_to_the_Private_Vocational_Schools_in_THAILAND). [21]



- Kis, V. and H. Windisch (2018), “Making skills transparent: Recognising vocational skills acquired through workbased learning”, *OECD Education Working Papers*, No. 180, OECD Publishing, Paris, <https://dx.doi.org/10.1787/5830c400-en>. [54]
- Kuczera, M. and S. Jeon (2019), *Vocational Education and Training in Sweden*, OECD Reviews of Vocational Education and Training, OECD Publishing, Paris, <https://dx.doi.org/10.1787/g2q9fac5-en>. [23]
- Lathapipat, D. (2015), *Thailand - Wanted : A Quality Education for All*, <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/941121468113685895/thailand-wanted-a-quality-education-for-all>. [63]
- Makarova, E., B. Aeschlimann and W. Herzog (2019), “The Gender Gap in STEM Fields: The Impact of the Gender Stereotype of Math and Science on Secondary Students’ Career Aspirations”, *Frontiers in Education*, Vol. 4, <http://dx.doi.org/10.3389/feduc.2019.00060>. [40]
- Management de la Formation (2020), *Le CFA d’entreprise: Qui a osé de franchir le pas? (2/2)*, <https://www.managementdelaformation.fr/reforme-formation-professionnelle/2020/11/17/le-cfa-d-entreprise-qui-a-ose-franchir-le-pas-2-2/>. [69]
- McCarthy, M. and P. Musset (2016), *A Skills beyond School Review of Peru*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264265400-en>. [35]
- Ministère du Travail (2019), *Ouvrir votre propre CFA*, [https://travail-emploi.gouv.fr/IMG/pdf/ouvrir\\_son\\_cfa-print.pdf](https://travail-emploi.gouv.fr/IMG/pdf/ouvrir_son_cfa-print.pdf). [68]
- Ministry of Education (2013), *MOE provides policy to drive vocational education*, <http://www.vec.go.th/ข่าว/บริหารจัดการข่าว/รายละเอียดข่าว/tabid/103/ArticleId/1568/language/TH-TH/-50-50.aspx>. [1]
- Ministry of Higher Education (2021), *TVET Collaboration Hub*, <https://sea-vet.net/news/860-malaysia-sets-up-national-tvet-council-to-enhance-tvet-ecosystem>. [17]
- Ministry of Labour (2020), *Answers to the OECD questionnaire “VET in Thailand”*, OECD Reviews of Vocational Education and Training. [19]
- Musset, P. et al. (2019), *Vocational Education and Training in Estonia*, OECD Publishing, Paris, <https://doi.org/10.1787/g2q9fac9-en>. [13]
- Musset, P. and L. Mytna Kurekova (2018), “Working it out: Career Guidance and Employer Engagement”, *OECD Education Working Papers*, No. 175, OECD Publishing, Paris, <https://dx.doi.org/10.1787/51c9d18d-en>. [42]
- National Institute of Educational Testing Service (2021), *Updates*, <https://www.niets.or.th/en/>. [26]
- National Statistical Office (2021), *Skills Development Survey 2019*, <http://www.nso.go.th/sites/2014en/Pages/survey/Social/Labour/The-Skill-Development-Survey.aspx>. [52]
- National Statistical Office, Ministry of Digital Economy and Society (2015), *The Informal Employment Survey 2015*, <http://www.nso.go.th/sites/2014en/Survey/social/labour/informal/2015/6.Full%20Report.pdf>. [37]



- National Statistics Office Thailand (2021), *Thai Labour Force Survey*, [8]  
<http://www.nso.go.th/sites/2014en/Pages/Statistical%20Themes/Population-Society/Labour/Labour-Force.aspx>.
- OECD (2021), *Teachers and Leaders in Vocational Education and Training*, OECD Reviews of Vocational Education and Training, OECD Publishing, Paris, [65]  
<https://dx.doi.org/10.1787/59d4fbb1-en>.
- OECD (2020), *Education at a Glance - Brazil country note*, [11]  
[https://gpseducation.oecd.org/Content/EAGCountryNotes/EAG2020\\_CN\\_BRA.pdf](https://gpseducation.oecd.org/Content/EAGCountryNotes/EAG2020_CN_BRA.pdf).
- OECD (2020), *Education at a Glance 2020: OECD Indicators*, OECD Publishing, Paris, [64]  
<https://dx.doi.org/10.1787/69096873-en>.
- OECD (2020), *OECD Economic Surveys: Thailand 2020: Economic Assessment*, OECD Publishing, Paris, [53]  
<https://dx.doi.org/10.1787/ad2e50fa-en>.
- OECD (2020), *Strengthening Skills in Scotland: OECD Review of the Apprenticeship System in Scotland*, OECD, Paris, [57]  
[https://www.oecd.org/skills/centre-for-skills/Strengthening\\_Skills\\_in\\_Scotland.pdf](https://www.oecd.org/skills/centre-for-skills/Strengthening_Skills_in_Scotland.pdf).
- OECD (2020), *Student performance (PISA 2018)*, [33]  
<https://gpseducation.oecd.org/CountryProfile?primaryCountry=THA&treshold=10&topic=PI>.
- OECD (2019), *Getting Skills Right: Creating Responsive Adult Learning Systems*, OECD Paris, [50]  
<https://www.oecd.org/els/emp/adult-learning-systems-2019.pdf>.
- OECD (2019), *Multi-dimensional Review of Thailand (Volume 2): In-depth Analysis and Recommendations*, OECD Development Pathways, OECD Publishing, Paris, [58]  
<https://dx.doi.org/10.1787/9789264307674-en>.
- OECD (2019), *OECD Economic Surveys: Malaysia 2019*, OECD Publishing, Paris, [16]  
<https://dx.doi.org/10.1787/eaaa4190-en>.
- OECD (2018), *Promising Practice - Attracting Teachers to Schools in Rural and Remote Areas in Australia*, [66]  
<http://www.oecdteacherready.org/promising-practice/attracting-teachers-to-schools-in-rural-and-remote-areas-in-australia/>.
- OECD (2018), *Seven Questions about Apprenticeships: Answers from International Experience*, [24]  
 OECD Reviews of Vocational Education and Training, OECD Publishing, Paris,  
<https://dx.doi.org/10.1787/9789264306486-en>.
- OECD (2016), *Education in Latvia*, Reviews of National Policies for Education, OECD Publishing, Paris, [10]  
<https://dx.doi.org/10.1787/9789264250628-en>.
- OECD (2015), *The ABC of Gender Equality in Education: Aptitude, Behaviour, Confidence*, [39]  
 PISA, OECD Publishing, Paris, <https://dx.doi.org/10.1787/9789264229945-en>.
- OECD (2014), *Skills beyond School: Synthesis Report*, OECD Reviews of Vocational Education and Training, OECD Publishing, Paris, [9]  
<https://dx.doi.org/10.1787/9789264214682-en>.
- OECD (2010), *Learning for Jobs*, OECD Reviews of Vocational Education and Training, OECD Publishing, Paris, [6]  
<https://dx.doi.org/10.1787/9789264087460-en>.

- OECD/ILO (2017), *Engaging Employers in Apprenticeship Opportunities: Making It Happen Locally*, OECD Publishing, Paris, <https://dx.doi.org/10.1787/9789264266681-en>. [61]
- Office of Education Council (2017), *National Scheme of Education B.E. 2560-2579*, <http://planipolis.iiep.unesco.org/es/node/6635>. [30]
- Office of the Education Council (2021), *Enhancing TVET quality in Thailand*, <http://dx.doi.org/www.onec.go.th>. [5]
- Office of the Education Council (2017), *Education in Thailand*, <http://www.onec.go.th/index.php/book/BookView/1532>. [41]
- Office of the Vocational Education Commission (2020), *Background and context of Vocational Education and Training in Thailand*. [55]
- Office of the Vocational Education Commission (2019), *Information on government-private education institutions*, <http://techno.vec.go.th/ประชาสัมพันธ์/รายละเอียดข่าว/tabid/766/ArticleId/5977/language/th-TH/.aspx>. [59]
- Office of the Vocational Education Commission (2019), *Student data statistics for the year 2019*, [http://www.mis.moe.go.th/index.php?option=com\\_content&view=article&id=657:~:E0%B8%9B%E0%B8%A3%E0%B8%B0%E0%B8%88%E0%B8%B3%E0%B8%9B%E0%B8%B5-2562&catid=173&Itemid=114](http://www.mis.moe.go.th/index.php?option=com_content&view=article&id=657:~:E0%B8%9B%E0%B8%A3%E0%B8%B0%E0%B8%88%E0%B8%B3%E0%B8%9B%E0%B8%B5-2562&catid=173&Itemid=114). [22]
- Office of the Vocational Education Commission (2016), *Educational statistics data for the year 2016*, <http://techno.vec.go.th/ประชาสัมพันธ์/รายละเอียดข่าว/tabid/766/ArticleId/5977/language/th-TH/.aspx>. [48]
- Osgood, J., B. Francis and L. Archer (2006), “Gendered identities and work placement: why don’t boys care?”, *Journal of Education Policy*, Vol. 21/3, pp. 305-321, <http://dx.doi.org/10.1080/02680930600600424>. [44]
- Penang Skills Development Centre (2019), *Annual Report 2019*, <https://www.psdcc.my/documents/2019-PSDC-annual-report.pdf>. [67]
- PISA (2018), *PISA 2018 Database*, <https://www.oecd.org/pisa/data/2018database/>. [20]
- Reisel, L., K. Hegna and C. Imdorf (2015), “Gender Segregation in Vocational Education: Introduction”, in *Gender Segregation in Vocational Education, Comparative Social Research*, Emerald Group Publishing Limited, <http://dx.doi.org/10.1108/s0195-631020150000031023>. [38]
- Ritchie, B. (2010), *Systematic Vulnerability and Sustainable Economic Growth: Skills and Upgrading in Southeast Asia*, Edward Elgar (EE), Cheltenham, United Kingdom. [46]
- Thailand Development Research Institute (2021), *Covid-19 emphasizes the need to bridge the digital divide and reduce online educational inequality*, <https://tdri.or.th/en/2020/05/covid-19-emphasizes-the-need-to-bridge-the-digital-divide-and-reduce-online-educational-inequality/>. [60]
- Thailand Development Research Institute (2019), *How vocational education can “build the nation”*, <https://tdri.or.th/en/2019/03/how-vocational-education-can-build-the-nation/>. [4]
- TPQI (2021), *Presentation to OECD*, <https://e-training.tpqi.go.th>. [51]

- U. K. Equal Opportunities Commission (2005), *Gender Equality in Work Experience Placements for Young*, <https://www.educationandemployers.org/wp-content/uploads/2014/06/gender-equality-in-work-experience-placements-lmu.pdf>. [45]
- UNESCO (2018), *Pathways of Progression: Between Technical and Vocational Education and Training and Further and Higher Education*, <http://www.unesco.org/new/fileadmin/MULTIMEDIA/FIELD/Beirut/images/Education/LinkingTVETHED.pdf>. [14]
- UNESCO-UNEVOC (2015), *World TVET Database Thailand*, [https://unevoc.unesco.org/wtdb/worldtvetdatabase\\_tha\\_en.pdf](https://unevoc.unesco.org/wtdb/worldtvetdatabase_tha_en.pdf). [15]
- UNESCO-UNEVOC (2013), *Experts meeting on TVET Teacher Education in Southeast Asia and Nepal - Synthesis report*, [https://unevoc.unesco.org/fileadmin/user\\_upload/docs/Synthesis\\_report\\_SEAMEO\\_VOCTECH.pdf](https://unevoc.unesco.org/fileadmin/user_upload/docs/Synthesis_report_SEAMEO_VOCTECH.pdf). [18]
- Vandeweyer, M. and A. Verhagen (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://dx.doi.org/10.1787/503bcecb-en>. [12]
- World Bank (2021), *Enterprise Surveys*, <http://www.enterprisesurveys.org>. [49]
- World Bank (2019), *World Development Indicators*, <https://databank.worldbank.org/source/world-development-indicators>. [27]

## Notes

<sup>1</sup> The EEC development framework estimates the plan will need 173 705 people with vocational qualifications. But the country is still 55 642 (or 32%) short of that number (Thailand Development Research Institute, 2019<sup>[4]</sup>).

<sup>2</sup> Training institutions achieving a good performance during the previous year are allocated THB 500 000–2 000 000 (USD 14 000–56 000), depending on the public budget available.

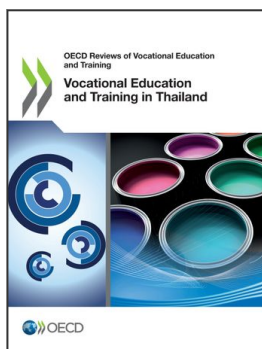
<sup>3</sup> Dropout rate is computed by dividing total number of dropouts in the relevant level (Cert. or Dip.) by total enrolments in that level (using the same academic year figures).

<sup>4</sup> Workers in the informal economy can acquire foundation skills, professional and personal skills, core work skills and technical and vocational skills both before they start working in the informal economy, and once they start working. Many of those working in the informal economy will have experienced periods of formal education and training, some type of schooling, perhaps technical or vocational training (or tertiary education). Some people will also bring into the informal economy skills they have acquired in a previous (or concurrent) formal sector job.

<sup>5</sup> The student-teacher ratio in primary and lower-secondary equals 15 and 13, respectively, on average across OECD countries.

<sup>6</sup> State (Perkins) approved and elective VET programmes and industrial technology programmes.

<sup>7</sup> Because of small sample sizes, these results need to be interpreted with caution.



From:

## Vocational Education and Training in Thailand

Access the complete publication at:

<https://doi.org/10.1787/cc20bf6d-en>

### Please cite this chapter as:

OECD (2021), “Improving access and quality of vocational education and training in Thailand”, in *Vocational Education and Training in Thailand*, OECD Publishing, Paris.

DOI: <https://doi.org/10.1787/da2a3f57-en>

This work is published under the responsibility of the Secretary-General of the OECD. The opinions expressed and arguments employed herein do not necessarily reflect the official views of OECD member countries.

This document, as well as any data and map included herein, are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area. Extracts from publications may be subject to additional disclaimers, which are set out in the complete version of the publication, available at the link provided.

The use of this work, whether digital or print, is governed by the Terms and Conditions to be found at <http://www.oecd.org/termsandconditions>.