

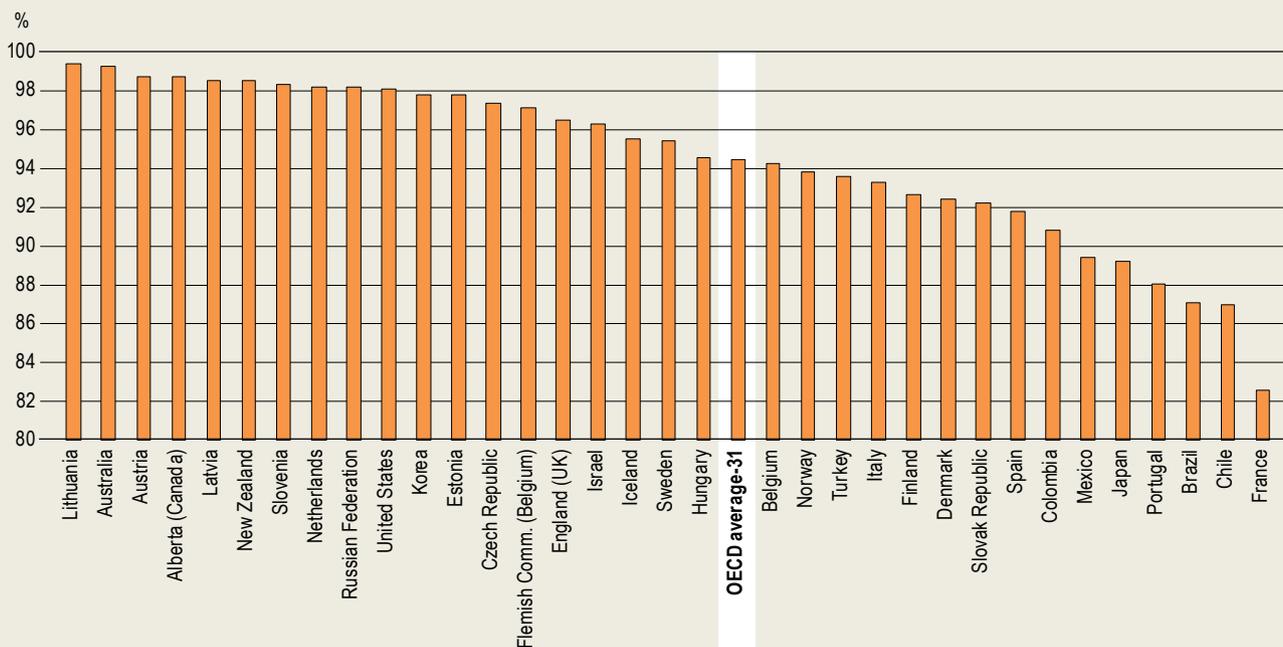
Youth in the Education Sustainable Development Goal

Highlights

- Teaching resources, student outcomes, educational attainment and access to the labour market are all emphasised in the agenda for the fourth Sustainable Development Goal on Education (SDG 4), which aims to ensure access, quality and equity in education.
- On average across OECD countries, lower secondary teachers (aged 25-64) in general programmes earn 89% of the actual salaries of other tertiary-educated workers. There is, however, significant variation between countries and by gender (Indicator D3, used as a proxy for SDG Indicator 4.c.5).
- In over half of the countries with available data, at least 95% of lower secondary teachers report having participated in professional development activities over the past year (SDG Indicator 4.c.7). The format and content of continuous professional development activities for teachers vary significantly across countries, however.

Figure 1. Percentage of lower secondary teachers who participated in professional development activities (2018)

SDG Indicator 4.c.7



Note: Refers to professional development activities in which teachers participated in the 12 months prior to the survey. Professional development activities include "Courses/seminars attended in person", "Online courses/seminars", "Education conferences where teachers and/or researchers present their research or discuss educational issues", "Formal qualification programme (e.g. degree programme)", "Observation visits to other schools", "Observation visits to business premises, public organisations or non-governmental organisations", "Peer and/or self-observation and coaching as part of a formal school arrangement", "Participation in a network of teachers formed specifically for the professional development of teachers", "Reading professional literature" or any other activity ("Other").

Countries and economies are ranked in descending order of the percentage of teachers who participated in professional development activities in the 12 months prior to the survey.

Source: OECD, TALIS 2018 Database, Table I.5.1. See *Source* section for more information (<https://doi.org/10.1787/69096873-en>).

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Context

In 2015, at the United Nations General Assembly, member states renewed their commitment to global development by adopting the 2030 Agenda for Sustainable Development. The Agenda is divided into 17 Sustainable Development Goals (SDGs), and constitutes a universal call for action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity. The fourth Sustainable Development Goal (SDG 4) is dedicated to education and aims to “ensure inclusive and equitable quality education and promote lifelong learning opportunities” by 2030 (UNESCO, 2016^[1]).

Unlike previous global targets, like the Millennium Development Goals, SDG 4 places a focus on the *quality* of education, with indicators related to teacher training and student outcomes, alongside more traditional measures of *quantity*, such as access and participation. It also emphasises the importance of learning at all stages of life, by investigating education at all levels (from early childhood education and care to tertiary education) and adult learning. For this edition of *Education at a Glance*, the SDG chapter will focus on secondary education, which is considered a crucial step for continuing to further education and for successful entry in the labour market (see Indicators A3 and A4). This chapter builds on a selection of SDG 4 indicators to investigate the quality of and participation in secondary education, looking at aspects such as teaching resources in lower secondary education, student outcomes, and the link between upper secondary attainment and access to the labour market.

Other findings

- Student performance in reading varies significantly across countries. For instance, while over 85% of students in Canada, Estonia, Finland and Ireland who took part in the Programme for International Student Assessment (PISA) attained Level 2 or above, only half of the students in Brazil and Colombia attained this level (SDG Indicator 4.1.1.c).
- In all countries and economies that participated in PISA 2018, girls scored significantly higher than boys in reading, a gap of 30 points on average across OECD countries (SDG Indicator 4.1.1.c).
- On average across OECD countries, less than 3% of youth are out of school in primary and lower secondary education, but this share rises to 8% at upper secondary level (SDG Indicator 4.1.5).
- On average across OECD countries, 17% of 15-24 year-olds are enrolled in vocational education (at the secondary, post-secondary non-tertiary and short-cycle tertiary levels combined). Most of them are enrolled at secondary level (SDG Indicator 4.3.3).

Analysis

SDG 4 and its associated targets set an ambitious agenda that encompasses access, participation, quality and equity in education, at all levels of education. The analysis below focuses on secondary education, and builds on selected SDG 4 indicators to investigate teaching resources in lower secondary education, student outcomes, and the relationship between upper secondary attainment and access to the labour market.

Teaching resources in lower secondary education

Teachers are often at the centre of initiatives to improve the quality of education, as their work can shape the quality of instruction and student learning outcomes (Darling-Hammond, 2017^[2]) (OECD, 2018^[3]). The SDG agenda dedicates an entire target (SDG 4.c) to teachers, with indicators that help monitor issues such as the attractiveness of the teaching profession, the supply of qualified and trained teachers, and teachers' professional development.

How attractive are teacher salaries?

Together with the intrinsic benefits of teaching, working conditions (such as working hours or salaries), can be crucial to attracting and retaining effective teachers. One way the SDG agenda investigates the attractiveness of the teaching profession is through SDG Indicator 4.c.5, which is defined as the average teacher salary relative to other professions requiring a comparable level of qualification. Due to the lack of an internationally agreed methodology, this indicator has not yet been approved for monitoring. Nonetheless, Indicator D3, which investigates the same question, helps shed light on teachers' relative salaries.

On average across OECD countries, lower secondary teachers (aged 25-64) in general programmes only earn 89% of the actual salaries of other tertiary-educated workers. Relative salaries vary significantly across countries, however. For instance, while teachers earn around 65% of the actual salaries of other tertiary-educated workers in the Czech Republic and the United States, they earn at least 30% more in Costa Rica, Lithuania and Portugal. To try and capture relative salaries, it is also important to investigate gender differences, which tend to be significant in most countries. On average across OECD countries, while lower secondary male teachers earn 77% of the salaries of other tertiary-educated full-time male workers, female teachers earn slightly more than their counterparts in other professions. This higher earnings ratio among female teachers may make the teaching profession more attractive to women, but it also reflects the persistent gender wage gap in favour of men in the labour market.

How many teachers are available?

One way to monitor the supply of teachers is through the ratio of students to teaching staff. The SDG agenda attempts to capture this issue with an emphasis on teaching quality, by dedicating an indicator (SDG Indicator 4.c.2) to the ratio of students to trained teachers. In the SDG context, trained teachers are defined as teachers who have received at least the minimum organised pre-service and in-service pedagogical teacher training required for teaching at the relevant level in a given country. In the absence of a common standard for teacher training, Indicator D2 (which takes all teachers into account), can help shed light on teacher supply. On average across OECD countries, there are 13 students per teacher in lower secondary education. This ratio varies significantly across countries, however, ranging from 8 students per teacher in Austria, Greece and Lithuania to 33 students per teacher in Mexico.

What share of teachers participate in professional development activities?

While initial teacher education provides the foundations, continuous professional development provides a means to improve the quality of the teaching workforce and to retain effective staff over time. The SDG agenda investigates teachers' professional development through SDG Indicator 4.c.7, which measures the percentage of teachers who received in-service training in the last 12 months by type of training. Data from the OECD Teaching and Learning International Survey (TALIS) 2018 can help monitor this measure. As shown in Figure 1, in over half of the countries and economies with available data, at least 95% of lower secondary teachers declared they had participated in professional development activities over the past year. Although there is variation across countries – with values ranging from 83% in France to 99% in Alberta (Canada), Australia, Austria, Latvia and Lithuania – these results show that professional development has become a crucial part of teachers' career paths (OECD, 2019^[4]). Participation in teacher training, however, does not always mean the same thing.

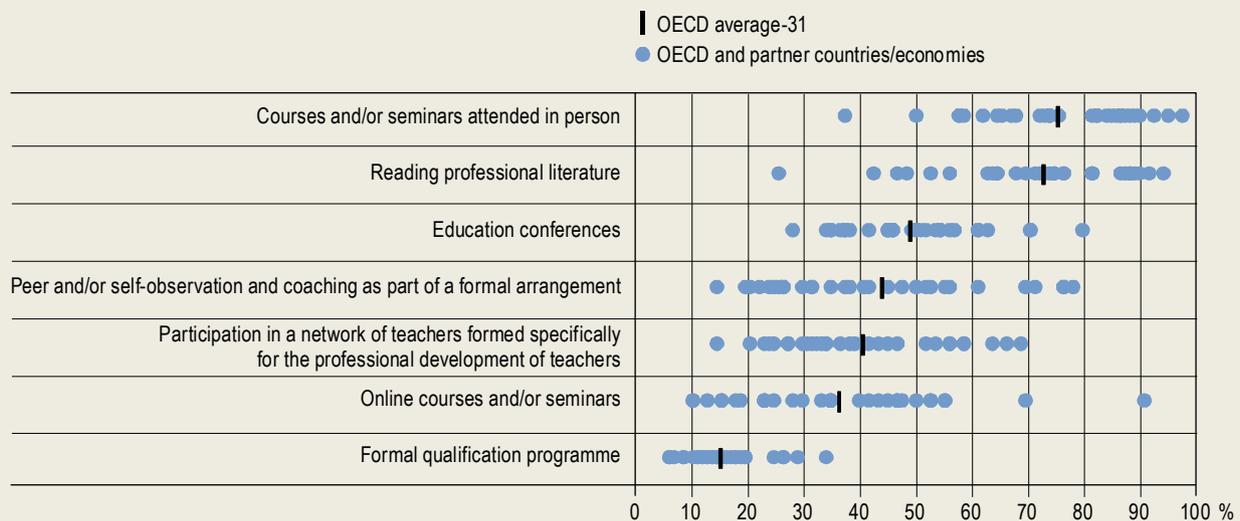
Box 1 discusses some of the differences in the format and content of lower secondary teachers' training within TALIS-participating countries.

Box 1. Teacher professional development, by type of training and content

Teacher professional development can take different forms, from informal activities (e.g. networking, within-school peer collaboration and reading professional literature) to formal activities (e.g. workshops, conferences and formal qualification programmes). On average across OECD countries, as many as 76% of lower secondary teachers declared they had attended courses or seminars in person over the past year, 72% had read professional literature, and 49% had participated in education conferences where teachers, principals and/or researchers present their research or discuss educational issues (Figure 2).

The forms teachers' professional development take vary significantly across countries. For instance, while at least 90% of teachers participate in courses/seminars in person in Australia, Austria, Latvia, Lithuania and Slovenia, only 50% or less do so in France and Japan. Similarly, at least 70% of teachers in Alberta (Canada), Latvia and the Russian Federation attend education conferences, compared to less than 30% of teachers in the Czech Republic and the Slovak Republic (Figure 2).

Figure 2. Percentage of lower secondary teachers who participated in the following types of professional development (2018)



Note: The following countries/economies are included: Alberta (Canada), Australia, Austria, Belgium, the Flemish Community of Belgium, Brazil, Chile, Colombia, the Czech Republic, Denmark, England (United Kingdom), Estonia, Finland, France, Hungary, Iceland, Israel, Italy, Japan, Korea, Latvia, Lithuania, Mexico, the Netherlands, New Zealand, Norway, Portugal, the Russian Federation, the Slovak Republic, Slovenia, Spain, Sweden, Turkey and the United States.

Data for additional types of professional development are available in the TALIS 2018 Database, Table I.5.7.

The types of professional development programmes are ranked from highest to lowest according to the share of lower secondary teachers participating in them, on average across OECD countries participating in TALIS.

Source: OECD, TALIS 2018 Database, Table I.5.7. See Source section for more information (<https://doi.org/10.1787/69096873-en>).

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In terms of content, on average across OECD countries, a large share of teachers report participating in professional development activities related to the “knowledge and understanding of my subject field(s)” (76%) and the “pedagogical competencies in teaching my subject field(s)” (73%). This may reflect the fact that teacher training is often linked with large-scale educational reforms leading to changes in subject and pedagogical content (Little, 1993^[5]; Kennedy, 2014^[6]; Avalos, 2011^[7]). In contrast, teachers were less likely (around 20%) to participate in training activities about “school management and administration”, “teaching in a multicultural or multilingual setting” and “communicating with people from

different cultures or countries". As with the forms of teacher training, there is also variation across countries in the content of training. For instance, while less than 60% of teachers participated in training related to the "knowledge and understanding of my subject field(s)" in France and Sweden, this proportion exceeds 90% in Korea and Latvia (Figure 3). This cross-country variation may reflect, in part, the type of initial training received by teachers. For instance, in France, teachers' initial training strongly emphasises field-specific knowledge, and a below-average share of lower secondary teachers report needing training in this area (OECD, 2019^[4]).

Figure 3. Percentage of lower secondary teachers who participated in professional development in the following areas (2018)



Note: The following countries/economies are included: Alberta (Canada), Australia, Austria, Belgium, the Flemish Community of Belgium, Brazil, Chile, Colombia, the Czech Republic, Denmark, England (United Kingdom), Estonia, Finland, France, Hungary, Iceland, Israel, Italy, Japan, Korea, Latvia, Lithuania, Mexico, the Netherlands, New Zealand, Norway, Portugal, the Russian Federation, the Slovak Republic, Slovenia, Spain, Sweden, Turkey and the United States. Data for additional types of professional development are available in the TALIS 2018 Database, Table I.5.18.

Areas of professional development are ranked from highest to lowest according to the share of lower secondary teachers participating in them, on average across OECD countries participating in TALIS.

Source: OECD, TALIS 2018 Database, Tables I.5.18. See *Source* section for more information (<https://doi.org/10.1787/69096873-en>).

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Student learning outcomes at age 15

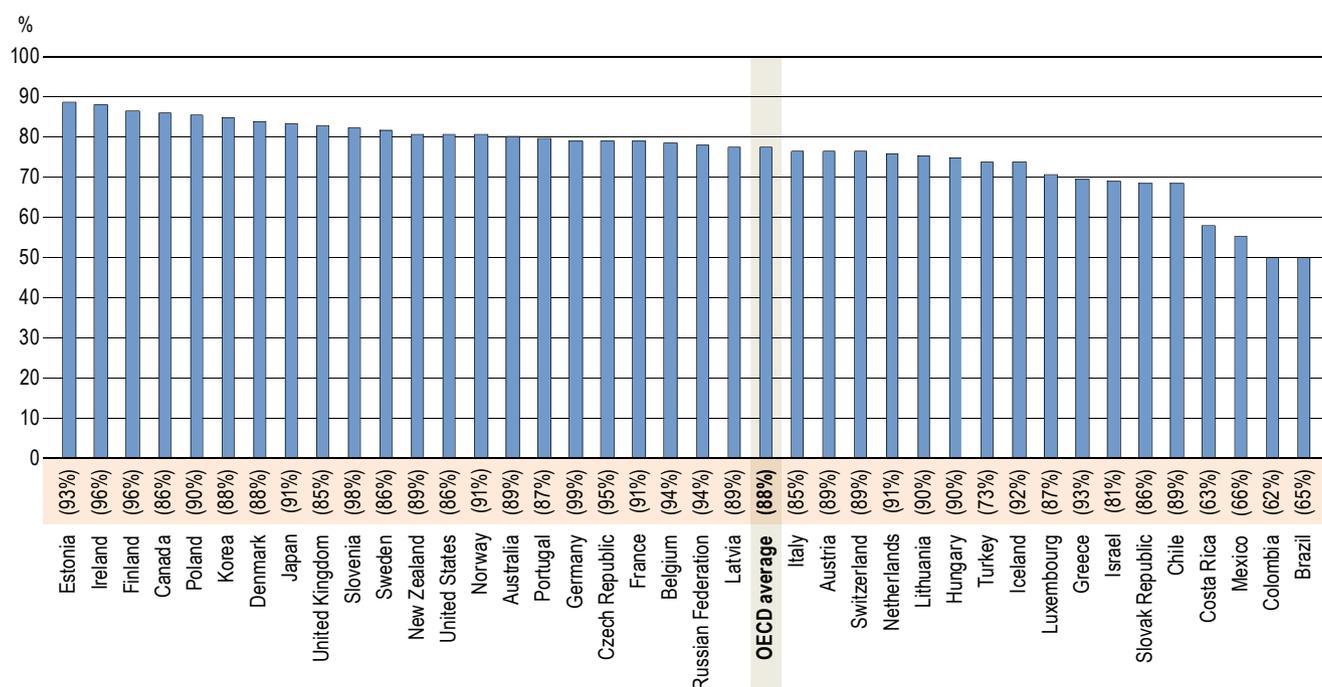
The way teaching is organised and delivered, together with other factors such as class sizes or the human and financial resources available in schools, can have a strong impact on student learning outcomes. The Programme for International

Student Assessment (PISA) measures the performance of 15-year-olds, who are enrolled in either lower secondary or upper secondary education. As such, it helps monitor SDG Indicator 4.1.1.c, which measures the proportion of youth at the end of lower secondary education who achieve at least a minimum proficiency level (i.e. Level 2 or above in the PISA context) in reading and mathematics.

As shown in Figure 4, student performance in reading varies significantly across countries. For instance, the vast majority of students (over 85%) attained Level 2 or above in Canada, Estonia, Finland and Ireland, while only half of the students attained this level in Brazil and Colombia. It is important, however, to look beyond national averages and examine results by gender. In all countries and economies that participated in PISA 2018, girls scored significantly higher than boys in reading, by 30 points more on average across OECD countries. Finland had the widest gender gap (over 50 points), while the narrowest gaps (under 20 points) were in Chile, Colombia and Mexico. These gender disparities in achievement raise concerns, as they may have long-term consequences for boys' and girls' academic and professional lives (OECD, 2019^[8]).

Figure 4. Percentage of 15-year-old students at Level 2 or above in the PISA reading assessment (2018)

SDG Indicator 4.1.1



Note: The percentage in parentheses refers to the proportion of 15-year-olds in each country/economy who were covered by the PISA sample (Coverage Index 3). The OECD average does not include Costa Rica.

Countries are ranked in descending order of the percentage of 15-year-old students who performed at or above Level 2.

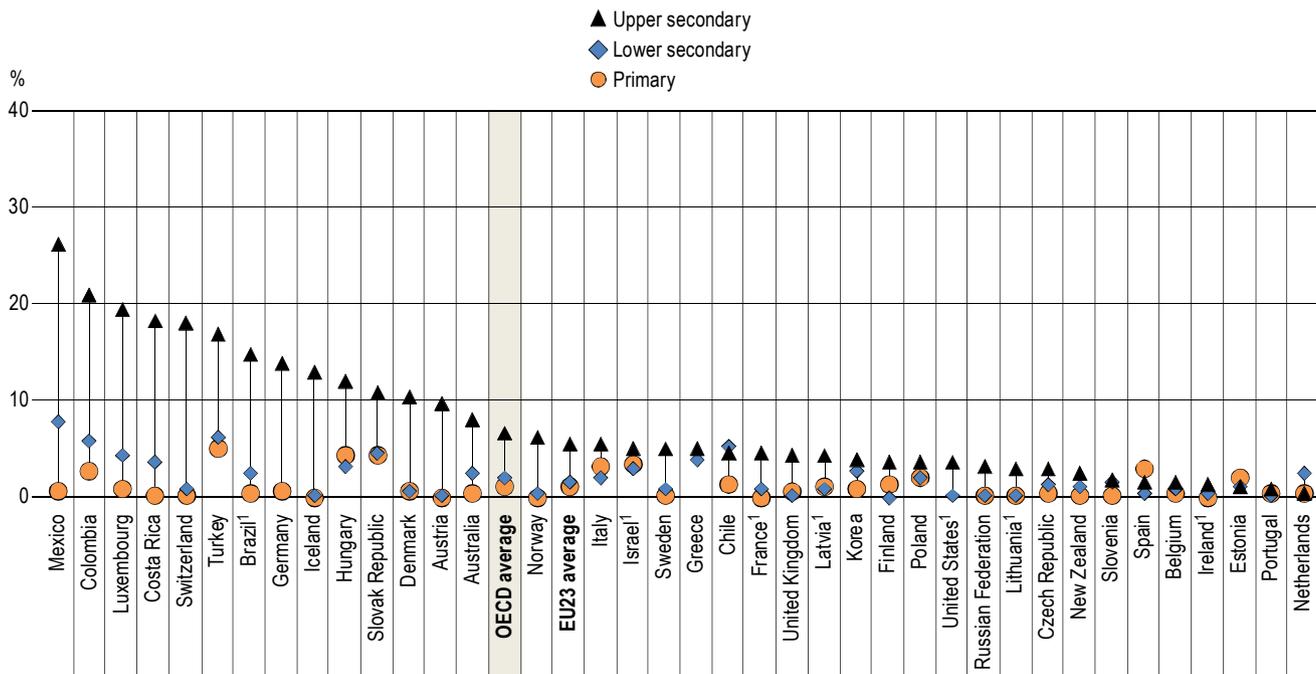
Source: OECD, PISA 2018 Database, Tables I.B1.1 and I.A2.1. See Source section for more information (<https://doi.org/10.1787/69096873-en>).

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Participation in upper secondary education and potential impact on labour-market outcomes

Ensuring that all young people have the opportunity to succeed at school is key, as poor outcomes may translate into difficulties in accessing further education and the labour market (OECD, 2019^[8]). One way to capture access to education is by measuring the out-of-school rate, which is defined as the percentage of children in the official age range for a given level of education who are not enrolled in school (SDG Indicator 4.1.5). On average across OECD countries, less than 3% of youth are out of school in primary and lower secondary education, but this share rises to 8% at the upper secondary level. This increase is particularly striking in Colombia and Mexico, where over 20% of youth are out of upper secondary education, compared to less than 3% at primary level (Figure 5).

Figure 5. Out-of-school rate, by level of education (2018)
SDG Indicator 4.1.5



1. The source for population data is the UOE data collection for demographic data (Eurostat/DEM) instead of the United Nations Population Division (UNPD).

Countries are ranked in descending order of the out-of-school rate in upper secondary education.

Source: OECD (2020). The official data sources for this indicator are the UOE data collection for enrolment data and the United Nations Population Division (UNPD) for population data. See *Source* section for more information and Annex 3 for notes (<https://doi.org/10.1787/69096873-en>).

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One of the ways governments have attempted to increase upper secondary completion and facilitate young people's entry into the labour market is through the development of vocational programmes. The SDG agenda monitors vocational education through Indicator 4.3.3, which measures the participation rate in technical and vocational programmes among 15-24 year-olds in formal education, work-based or in other settings. As shown in Figure 6, on average across OECD countries, 17% of 15-24 year-olds are enrolled in vocational education at the secondary, post-secondary non-tertiary and short-cycle tertiary levels combined. In almost all countries, the majority of students in vocational programmes are enrolled at the secondary level. The exceptions include countries such as Chile, Korea and the Russian Federation, where most students in vocational programmes are enrolled in short-cycle tertiary programmes. When analysing SDG Indicator 4.3.3, it is important to note that the broad age range (15 to 24) may lead to an underestimation of vocational enrolments in countries where vocational programmes are mainly attended by students from narrow age groups.

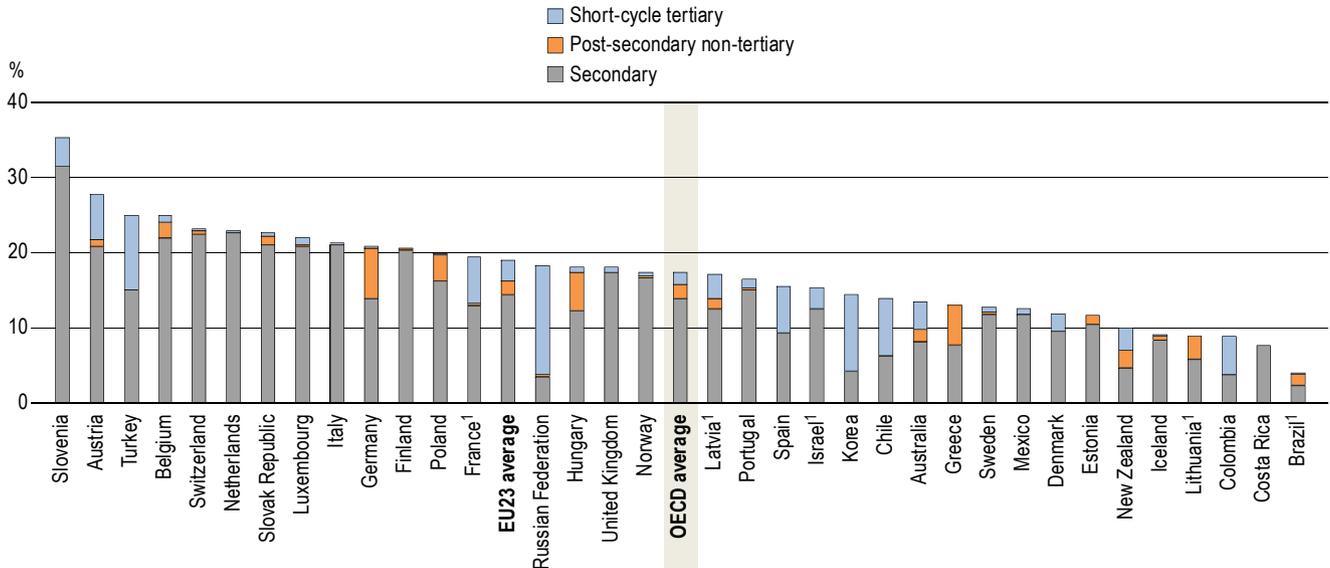
Increasing upper secondary attainment requires ensuring students can both access programmes and complete them. On average across countries with available true cohort data¹, 72% of students who entered upper secondary education graduated within the theoretical duration of the programme in which they were enrolled. However, completion of upper secondary education can be particularly challenging for students in vocational programmes. On average across countries with true cohort data, the completion rate for vocational programmes within the theoretical duration is 62%, compared to 76% for general programmes (Indicator B3). This gap raises equity concerns, as disadvantaged students are almost three times more likely to be enrolled in a vocational track than advantaged students (OECD, 2016^[9]).

Young people who leave school before completing upper secondary education tend to face challenges in the labour market, including worse employment prospects. For instance, those who have not attained upper secondary education are more likely to be neither employed nor in education or training (NEET). On average across OECD countries, as many as 39% of 25-29 year-olds without upper secondary education are NEET, compared to 17% for those with an upper secondary or post-secondary non-tertiary qualification. In spite of differences in scope, these results can help shed light on SDG Indicator 8.6.1,

¹ The true cohort method requires following an entry cohort through a specific time frame. For more information, see Indicator B3.

which is defined as the proportion of youth (aged 15-24) who are not participating in any form of education (formal or non-formal) nor in employment or training.

Figure 6. Participation of 15-24 year-olds in vocational education and training, by level of education (2018)
SDG Indicator 4.3.3



1. The source for population data is the UOE data collection for demographic data (Eurostat/DEM) instead of the United Nations Population Division (UNPD). Countries are ranked in descending order of enrolment rate of 15-24 year-olds in vocational education and training in secondary, post-secondary and short-cycle tertiary combined.

Source: OECD (2020). The official data sources for this indicator are the UOE data collection for enrolment data and the United Nations Population Division (UNPD) for population data. See *Source* section for more information and Annex 3 for notes (<https://doi.org/10.1787/69096873-en>).

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Definitions

Technical and vocational education and training (TVET) is a comprehensive term commonly used by the UNESCO Institute for Statistics to refer to education, training and skills development in a wide range of occupational fields, production, services and livelihoods. Vocational education may have work-based components (e.g. apprenticeships, dual-system education programmes). Successful completion of such programmes leads to labour market-relevant, vocational qualifications acknowledged as occupationally oriented by the relevant national authorities and/or the labour market.

SDG Indicator	Definition
4.1.1.c	Proportion of youth at the end of lower secondary education who achieve at least a minimum proficiency level in reading and mathematics
4.c.2	Student-to-trained-teacher ratios
4.c.5	Average teacher salary relative to other professions requiring a comparable level of qualification
4.c.7	Percentage of teachers who received in-service training in the last 12 months by type of training
4.1.5	Upper secondary out-of-school rate
4.3.3	Participation rate in technical and vocational programmes (15- to 24-year-olds), by sex
8.6.1	Proportion of youth (aged 15-24 years) not in education, employment or training

Methodology

All indicators presented in this chapter follow the agreed SDG methodology, including for recommended data sources, and may differ in some cases from other indicators presented in *Education at a Glance*. Please see Annex 3 for country-specific notes (<https://doi.org/10.1787/69096873-en>).

Source

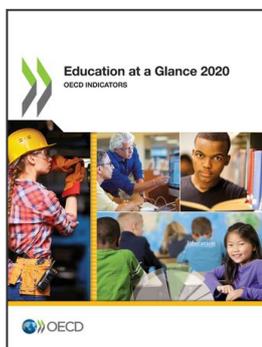
Indicator	Source
4.1.5	UOE 2018 data collection and UNPD (unless otherwise specified)
4.3.3	UOE 2018 data collection and UNPD (unless otherwise specified)

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Cut-off date for the data: 19 July 2020. Any updates on data can be found on line at <http://dx.doi.org/10.1787/eaq-data-en>. More breakdowns can also be found at <http://stats.oecd.org/>, Education at a Glance Database.

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