

Denmark

The output of educational institutions and the impact of learning

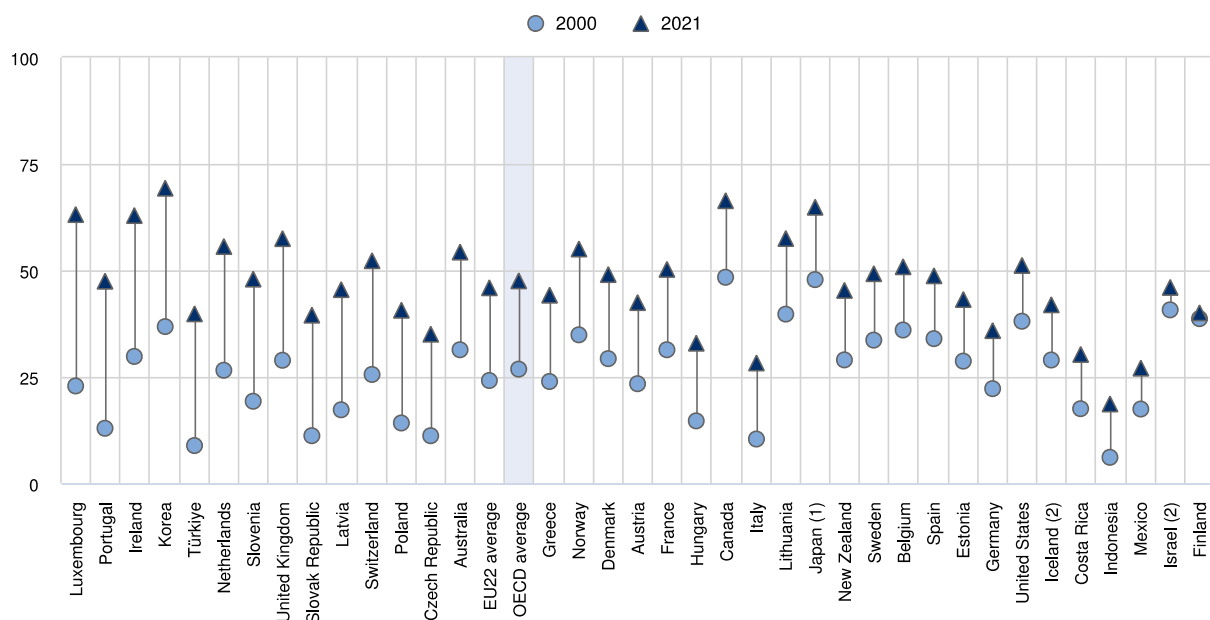
- Educational attainment has been increasing throughout the OECD, in particular at tertiary level. Between 2000 and 2021, the share of 25-34 year-olds with tertiary attainment increased on average by 21 percentage points. In Denmark, the share also increased albeit at a slower pace, by 20 percentage points (from 29% in 2000 to 49% in 2021) (Figure 1). Denmark is one of the 24 OECD countries where tertiary education is the most common highest level of attainment among 25-34 year-olds.
- Upper secondary attainment is often seen as a minimum qualification for successful labour market participation. Although the general increase in educational attainment has seen a parallel decline in the share of 25-34 year-olds without upper secondary attainment, 14% of young adults across the OECD still left school without an upper secondary qualification. In Denmark, the share is 16%, which is higher than the OECD average.
- Higher educational attainment is often associated with better employment prospects and Denmark is no exception. In 2021 the employment rate among 25-34 year-olds with tertiary education in Denmark was 27 percentage points higher than among those with below upper secondary attainment and 6 percentage points higher than among those with upper secondary or post-secondary non-tertiary attainment. On average across OECD countries, the employment rate among 25-34 year-olds with a tertiary qualification was 26 percentage points higher than among those with below upper secondary attainment and 8 percentage points higher than among those with upper secondary or post-secondary non-tertiary attainment. While the positive link between educational attainment and employment rates holds for both men and for women across the OECD, it is particularly strong for women. In Denmark, 45% of women with below upper secondary attainment were employed in 2021, compared to 84% of those with tertiary attainment. In contrast, the figures were 67% and 87% for men.
- Across the OECD, the labour market benefits of tertiary attainment have proved especially strong during economic crises. This was also the case during the COVID-19 pandemic in Denmark. Between 2019 and 2020, unemployment for 25-34 year-old workers with below upper secondary attainment increased by 0.5 percentage points, by 1.3 percentage points for workers with upper secondary attainment and decreased by 0.2 percentage points for workers with tertiary attainment. In 2021, unemployment for workers with below upper secondary attainment fell by 0.9 percentage points, compared to 2020, by 2.4 percentage points for workers with upper secondary attainment and by 0.7 percentage points for workers with tertiary attainment.
- Educational attainment affects not just employment prospects, but also wage levels. On average across the OECD, 25-64 year-old workers with upper secondary or post-secondary non-tertiary attainment earn 29% more than workers with below upper secondary attainment, while those with tertiary attainment earn about twice as much. In Denmark, the earnings advantage of tertiary-educated workers was smaller than the OECD average. In 2020, workers with upper secondary or

post-secondary non-tertiary attainment earned 30% more than those with below upper secondary attainment and those with tertiary attainment earned 66% more.

- National averages provide only an incomplete picture of the situation in any given country. In most OECD countries, there are large differences in educational attainment across subnational regions. This is also the case in Denmark. In 2021, the difference between the region with the highest share of 25-64 year-olds with tertiary attainment (Capital Region, at 54%) and that with the lowest share (Zealand, at 32%) was 22 percentage points. These subnational variations do not only reflect differences in education opportunities. To a large degree, they are due to economic conditions and internal migration patterns.

Figure 1. Trends in the share of tertiary-educated 25-34 year-olds (2000 and 2021)

In per cent



1. Data for tertiary education include upper secondary or post-secondary non-tertiary programmes (less than 5% of adults are in this group).

2. Year of reference differs from 2000: 2002 for Israel and 2003 for Iceland.

Countries are ranked in descending order of the difference in the share of tertiary-educated 25-34 year-olds between 2000 and 2021.

Source: OECD (2022), Education at a Glance Database, <http://stats.oecd.org/>. See Source section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).

Access to education, participation and progress

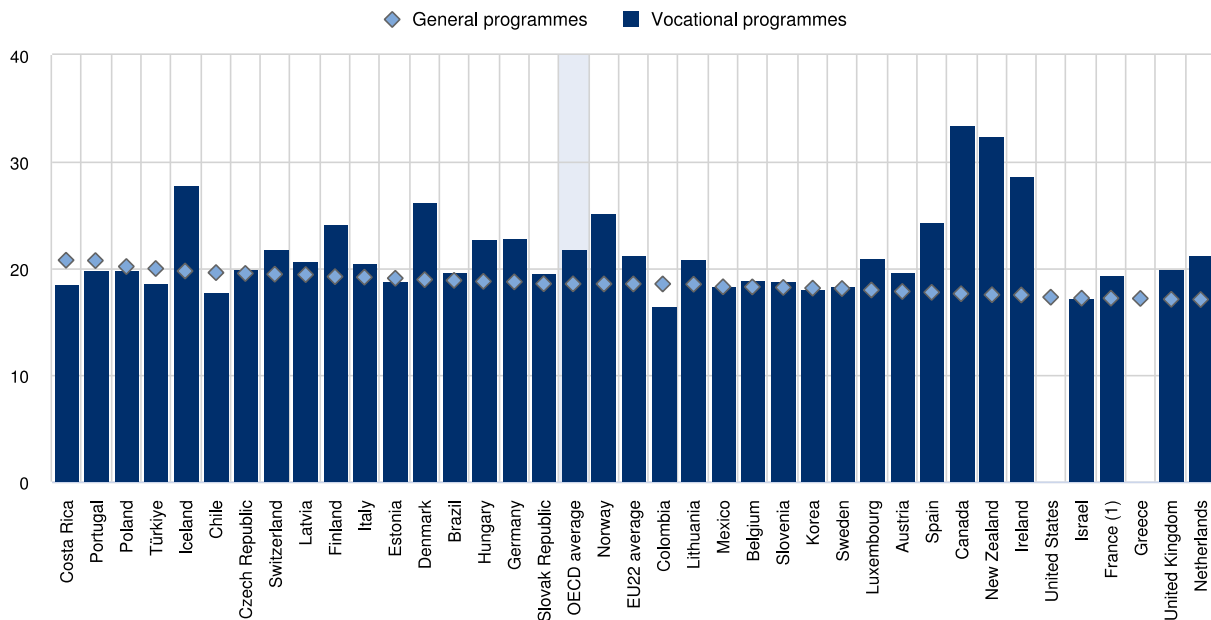
- Compulsory education begins at the age of 6 and ends at the age of 15 in Denmark. The range of ages for which at least 90% of the population are enrolled is longer than the period of compulsory education and goes from the age of 3 to the age of 17. This is similar to most other OECD countries, where more than 90% of the population are also enrolled for longer than the period of compulsory education.
- The age at which children enter early childhood education differs widely across countries. In Denmark, early childhood education starts offering intentional education objectives for children

younger than 1 and 55% of children under 3 are enrolled in early childhood education. Across OECD countries, the average enrolment rate among children below the age of 3 is 27%, but the rates range from less than 1% to 63%. The enrolment rate among 3-5 year-olds increases substantially in all OECD countries. In Denmark, 97% of all children of this age are enrolled in early childhood education, which is above the OECD average.

- The average age of graduation from general upper secondary programmes varies from 17 to 21 years across OECD countries and is 19 years in Denmark. Differences in the average age of graduation from vocational upper secondary education are much larger and vary from 16 to 34 years across the OECD. These differences largely depend on whether vocational upper secondary students usually enrol in these programmes towards the end of their compulsory education or in mid-career. In Denmark, the average age of graduation from vocational upper secondary education is 26 years, which is above the OECD average at 22 years (Figure 2).
- In almost all OECD countries, women make up the majority of those graduating from general upper secondary education. In Denmark, the share is 55% (OECD average 55%). In contrast, men are overrepresented among graduates of vocational upper secondary programmes in most OECD countries, as is the case in Denmark where they make up 54% of all vocational upper secondary graduates, slightly below the OECD average (55%).
- In Denmark, 60% of 18-24 year-olds are still in full- or part-time education or training at either upper secondary or tertiary level (above the OECD average of 54%). A subset of these students (30% of 18-24 year-olds) combine their education or training with some form of employment in Denmark, compared to 17% on average across the OECD.
- One significant difference across countries' education systems is on whether or not vocational upper secondary programmes provide access to tertiary education. In 12 OECD countries and other participants, all vocational upper secondary graduates have direct access to tertiary education. In Denmark 75% of graduates from vocational upper secondary programme have direct access to tertiary education.
- As is the case in all OECD countries, a majority of students enrolled at tertiary level in Denmark are bachelor's students (63%). However, the next commonest enrolment level varies from country to country. In Denmark, master's students make up the second largest group of tertiary students at 22%. This is also the case in 25 other OECD countries, while in the remaining 14 countries with available data, short-cycle tertiary students form the second largest group.
- At 30%, business, administration and law was the most popular field of study among new entrants into tertiary education in Denmark, which is the case in most OECD countries. Despite the growing need for digital skills and the good employment prospects of students with degrees in information and communication technologies (ICT), only a small fraction of entrants into tertiary education choose this field. In Denmark, 87% of 25-64 year-olds with a tertiary ICT qualification are employed, but ICT students make up 6% of new entrants into tertiary education. This is the same level as the OECD average.

Figure 2. Average age of first-time upper secondary graduates, by programme orientation (2020)

In years



1. Average age is based on all graduates instead of first-time graduates.

Countries are ranked in descending order of the average age of first-time upper secondary graduates in general programmes.

Source: OECD/Eurostat/UIS (2022), Tables B3.1 and B3.2. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).

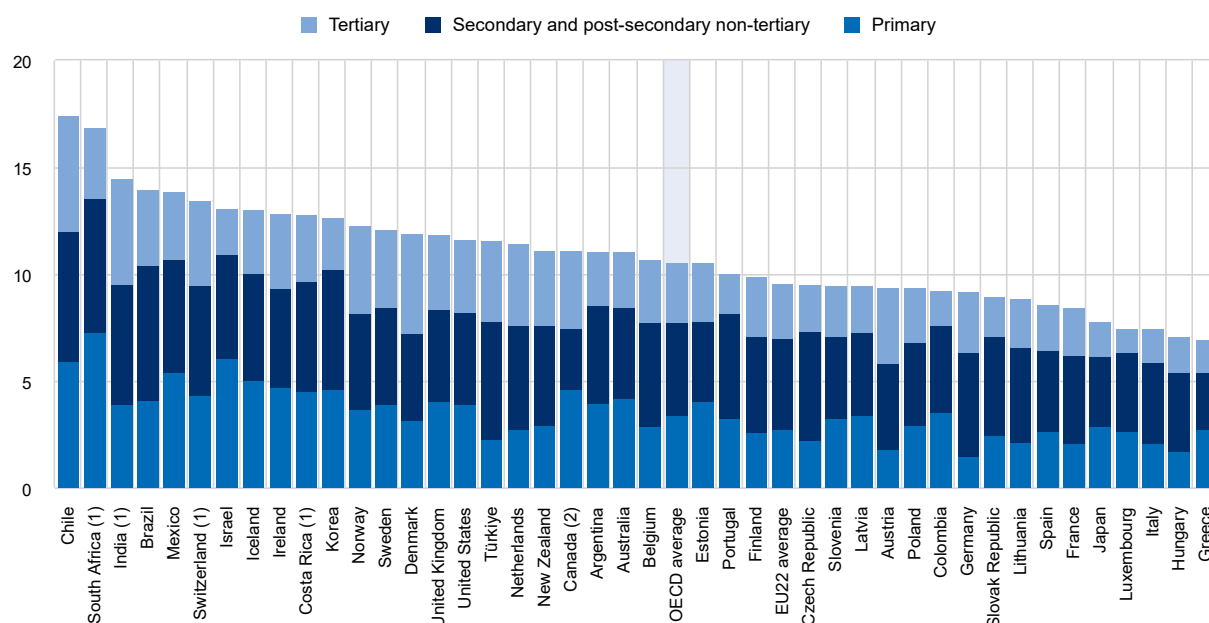
Financial resources invested in education

- All OECD countries devote a substantial share of national output to educational institutions. In 2019, OECD countries spent on average 4.9% of their gross domestic product (GDP) on primary to tertiary educational institutions. In Denmark, the corresponding share was 5.4%. Between 2008 and 2019, funding for educational institutions from all sources in Denmark. However, over the same period of time, the increase in GDP was higher with 14%. As a consequence, expenditure on educational institutions as a share of GDP fell by 0.4 percentage points over the same time period.
- Public spending on primary to tertiary education was 11.9% of total government expenditure in Denmark (Figure 3), higher than the OECD average (10.6%). Also, relative to GDP, public spending on primary to tertiary education (5.9%) is higher than the OECD average (4.4%).
- Spending on educational institutions as share of GDP or public budgets are important measures of the importance that countries place on education in their budgeting decisions. However, they do not show the total amount of funding per student because GDP levels, public budgets and student numbers vary from country to country. Across primary to tertiary education, OECD countries spend an average of USD 11 990 per student (in equivalent USD converted using PPPs for GDP) on educational institutions each year. In comparison, Denmark spent USD 14 547 per student in 2019. Its cumulative expenditure on educating a student from the age of 6 to 15 was USD 130 685, which was significantly above the OECD average of USD 105 502.

- Across OECD countries, the provision of education at primary and secondary levels in terms of curricula, teaching styles and organisational management leads, on average, to similar patterns of expenditure per student from primary to post-secondary non-tertiary levels. OECD countries as a whole spend on average around USD 9 923 per student at primary and USD 11 400 per student at secondary level. In Denmark, the values are USD 12 273 at primary and USD 12 594 per student at secondary level.

Figure 3. Composition of total public expenditure on education as a percentage of total government expenditure (2019)

Primary to tertiary education (including R&D), in per cent



1. Year of reference differs from 2019. Refer to the source table for more details.

2. Primary education includes pre-primary programmes.

Countries are ranked in descending order of total public expenditure on education as a percentage of total government expenditure.

Source: OECD/UIS/Eurostat (2022), Table C4.1. See Source section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf).

- In contrast to lower levels of education, spending on tertiary education varies widely across OECD countries. Expenditure per student at tertiary level in Denmark is higher than at other levels of education, as is the case in almost all other OECD countries. The average expenditure per student in Denmark is USD 21 658 per year, which is about USD 9 400 higher than that of the primary level and USD 9 100 higher than that of the secondary level. It is among the highest across OECD countries. The average expenditure at tertiary level (USD 17 559) is driven up by high values in a few countries, including in Denmark. At 55%, the share of research and development (R&D) expenditure makes up a larger fraction of expenditure on tertiary education in Denmark than on average across OECD countries (29%).
- Public funding dominates non-tertiary education (primary, secondary and post-secondary non-tertiary) in all OECD countries, even after transfers to the private sector. On average across the OECD, private funding accounts for 10% of expenditure at primary, secondary and post-secondary

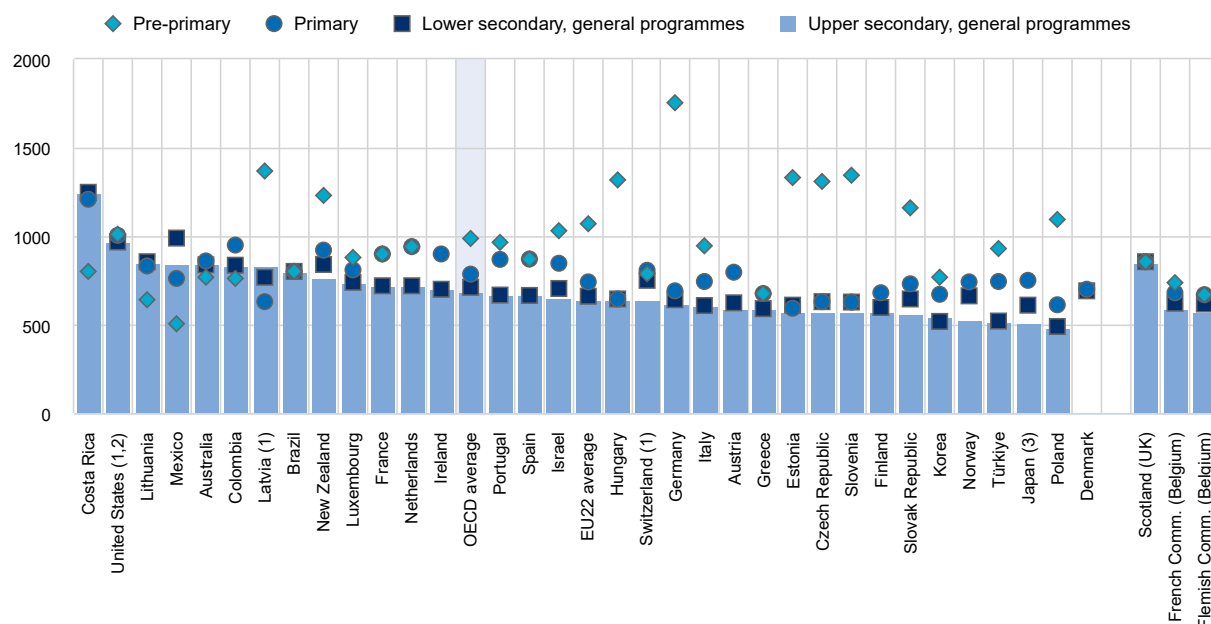
non-tertiary levels, while this share was 6% in Denmark in 2019. In contrast, private expenditure at tertiary level was higher in all OECD countries. In Denmark, the share of private expenditure at tertiary level reached 11%, which was significantly below the OECD average of 31%.

Teachers, the learning environment and the organisation of schools

- The salaries of teachers and school heads are an important determinant of the attractiveness of the teaching profession, but they also represent the single largest expenditure item in formal education. In most OECD countries, the statutory salaries of teachers (and school heads) in public educational institutions increase with the level of education they teach, and also with experience. Actual salaries also increase with the level of education. On average across OECD countries, actual salaries range from USD 41 941 at the pre-primary level to USD 53 682 at the upper secondary level. In Denmark, actual salaries average USD 52 494 at pre-primary level and USD 74 745 at upper secondary level.
- Between 2015 and 2021, on average across OECD countries, the statutory salaries of teachers at lower secondary level (general programmes) with 15 years of experience and the most prevalent qualifications increased by 6% in real terms. In Denmark, real wages of teachers at lower secondary level declined by 2%.
- Teachers' average actual salaries remain lower than earnings of tertiary-educated workers in almost all OECD countries, and at almost all levels of education. This is also the case in Denmark. Lower secondary (general programme) teachers in Denmark earn 21% less than other tertiary-educated workers. School head actual salaries in Denmark are only slightly higher than the earnings of other tertiary educated workers. This is different from most OECD countries, where school heads tend to earn well above the average earnings of tertiary educated workers.
- The average number of teaching hours per year required from a typical teacher in public educational institutions in OECD countries tends to decrease as the level of education increases. This is also the case in Denmark.
- The duration of initial teacher education for primary and lower secondary teachers ranges from 2.5 years to 6.5 years across OECD countries. In Denmark, initial teacher education typically lasts 4 years for prospective lower secondary teachers (general programmes). It is the same length for prospective primary teachers. As is the case in almost all OECD countries, a tertiary degree is awarded to prospective teachers of all levels of education upon completion of their initial teacher training.
- Continuing professional development is compulsory for all teachers of general programmes in most countries with data, but Denmark is an exception. At secondary level, professional development activities are not compulsory.

Figure 4. Teaching time of teachers, by level of education (2021)

Net statutory teaching time in hours per year, in public institutions



1. Actual teaching time (in Latvia except for pre-primary level).

2. Reference year differs from 2021. Refer to the source table for details.

3. Average planned teaching time in each school at the beginning of the school year.

Countries and other participants are ranked in descending order of the number of teaching hours per year in general upper secondary education.

Source: OECD (2022), Table D4.1. See Source section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-D.pdf).

Focus on tertiary education

- Among 25-64 year-olds in Denmark, bachelor's degrees are the most common tertiary attainment at 21% of the population followed by master's degrees with 15% and short-cycle tertiary qualifications with 5%. This is similar to the OECD average, where bachelor's degrees are most common (19%), followed by master's degrees (14%) and short cycle tertiary qualifications (7%). As in all OECD countries and other participants, only a small fraction of the population holds a doctoral degree: the share is 1% in Denmark.
- On average, tertiary attainment generates a wide range of labour-market benefits, including high employment rates. Yet, there are significant differences depending on the field of study. In 2021, employment rates in Denmark were highest among tertiary-educated individuals who studied law with 92% and lowest among those who studied arts at 77%. Among 25-64 year-olds with tertiary attainment in the field with the lowest employment rate, this was 4.9 percentage points lower than among those with upper secondary attainment (all fields combined).
- Wages also differ according to the field of study. In Denmark, tertiary attainment in business, administration and law generates the highest earnings. Full-time full-year workers aged 25-64 with a tertiary degree in this field earn on average 48% more than workers with upper secondary attainment (all fields combined). In contrast, tertiary attainment in the field of education as well as

health and welfare leads to the lowest wages. Workers with this educational background earn on average 5% more than the wage of workers with upper secondary attainment (all fields combined).

- In most OECD countries including in Denmark, tertiary-educated adults have higher rates of participation in non-formal education and training than those with a lower level of educational attainment. In 2021, 23% of 25-64 year-olds with tertiary attainment in Denmark had participated in non-formal education and training in the four weeks prior to being surveyed, compared to 10% of their peers with below upper secondary attainment.
- Entering tertiary education often means costs for students and their families, in terms of tuition fees, foregone earnings and living expenses, although they may also receive financial support to help them afford it. However, public policies on tuition fees and financial support for students differ greatly across countries. In Denmark, no tuition fees are combined with high levels of financial support for students. Public institutions do not charge tuition fees for national students.
- OECD countries have different approaches to providing financial support to students enrolled in tertiary education, but in general countries with the highest level of public transfers to the private sector are those that also tend to have the highest tuition fees. In six OECD countries and other participants, including Denmark, at least 80% of national students receive public financial support in the form of student loans, scholarships or grants. In another six countries and other participants, less than 25% of students receive financial support. In these countries, public financial support is targeted on selected groups of students, such as those from socio-economically disadvantaged families.
- Enabling students to enrol on a part-time basis is an important way to facilitate access to tertiary education. Many part-time students would not be able to study full time, for example because they have child-care responsibilities or have to work to fund their studies. The share of part-time students at the tertiary level in Denmark is 12%, below the OECD average (22%). Compared to 2013, it has remained constant.
- Staff at tertiary level tend to start their careers relatively late due to the length of the education they need to qualify. In Denmark, 19% of academic staff are aged under 30, above the OECD average (8%). In contrast, the share of academic staff aged 50 or over is 34%, which is below the OECD average by 6 percentage points.

COVID-19: The second year of the pandemic

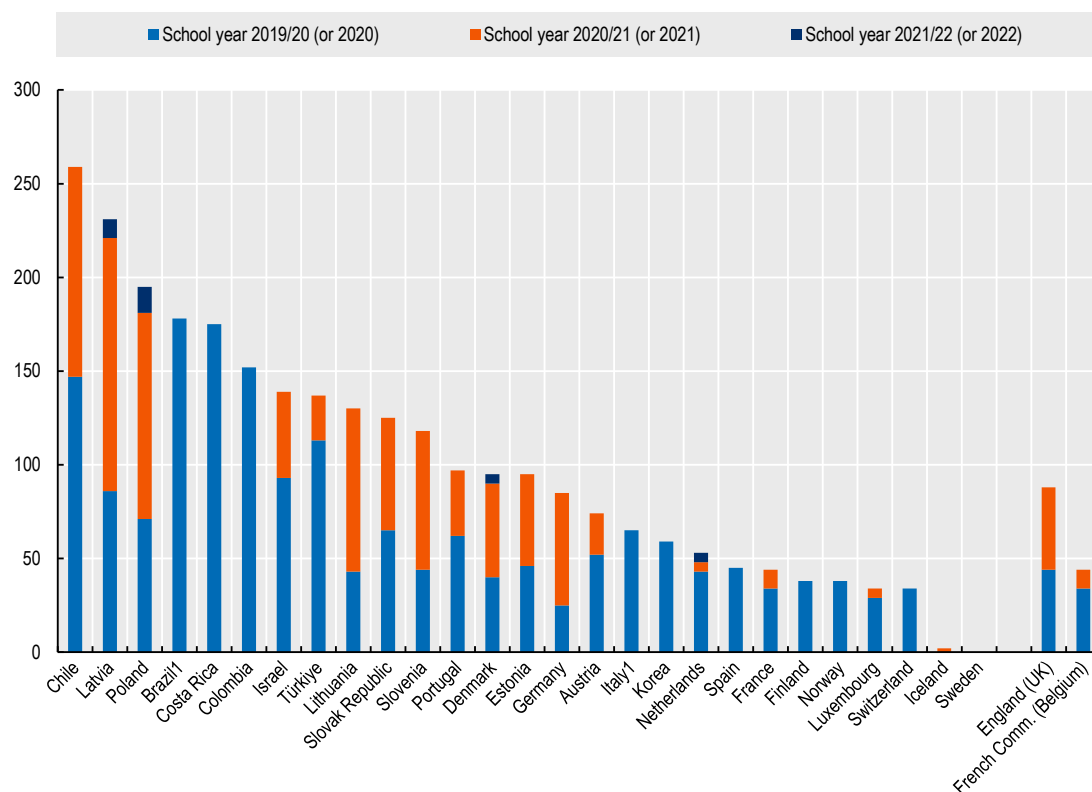
- The COVID-19 pandemic disrupted traditional schooling in 2020 and the first half of 2021, leading to school closures across all OECD countries. While most shut down their premises entirely in the wake of the pandemic in 2020, by 2021 the situation had improved and returned to normal in most countries in 2022. In Denmark, lower secondary schools were entirely closed for 40 days during the school year 2019/20 and 50 days in 2020/21 and 5 days in 2021/22 (Figure 5). The number of days are indicative for students at lower upper secondary level (7th-9th grade) and there were local diversions to schools closures in addition to the centrally recommended or mandated response to tackle Covid-19 virus. Furthermore, the number of days with fully closed schools varied depending on the ISCED-level.
- National examinations have also been affected by the pandemic. At general upper secondary level, 18 OECD countries postponed their national examinations during the school year 2019/20, while 10 countries even cancelled them entirely. In 2020/21, national examinations were postponed in 9 countries and cancelled in 6 countries. Denmark cancelled its national examinations in the period between 21 December 2020 and 31 of January 2021.
- The COVID-19 pandemic had a significant impact on adult learning in most OECD countries. In 2020, the share of adults who participated in a formal or non-formal education and training activity

in the four weeks prior to being surveyed decreased by 2 percentage points on average across OECD countries compared with 2019. However, in 2021, participation in non-formal education and training returned to pre-pandemic levels in most countries. In Denmark, a different pattern emerged. From 2019 to 2020, the share of adults participating in a formal or non-formal education and training activity fell by 5 percentage points. From 2020 to 2021, it increased by 2 percentage points and has thus remained below pre-pandemic levels.

- Young adults who are not in employment, education or training (NEET) for prolonged periods are at risk of adverse economic and social outcomes in both the short and the long term. After decreasing during the COVID-19 pandemic in 2020, the share of 18-24 year-olds who are NEET in Denmark declined also in 2021. The share of NEET among young adults was 11% in 2021, below pre-COVID levels.

Figure 5. School closures due to COVID-19 (2020, 2021 and the first quarter of 2022)

Number of instruction days of full closure of lower secondary schools excluding school holidays, public holidays and weekends



Note: The data underlying this report were produced through the Survey on Joint National Responses to COVID 19, a collaborative effort conducted by the United Nations Educational, Scientific and Cultural Organization (UNESCO), the United Nations Children's Fund (UNICEF), the World Bank (WB), and the Organisation for Economic Co-operation and Development (OECD). Data for other levels of education are available at <https://www.oecd.org/education/Results-4th-wave-COVID-Survey-OECD-database.xlsx>. Denmark submitted their data late and was therefore manually added to the figure above.

1. Data for 2021 and 2022 are missing.

Countries and other participants are ranked in descending order of the total number of days lower secondary schools were fully closed during the school years 2019/20 (2020), 2020/21 (2021) and 2021/22 (2022).

Source: OECD/UIS/UNESCO/UNICEF/WB (2022).

References

OECD (2022), *Education at a Glance 2022: OECD Indicators*, OECD Publishing, Paris, <https://dx.doi.org/10.1787/69096873-en>.


OECD (2022), "Regional education", *OECD Regional Statistics (database)*, <https://dx.doi.org/10.1787/213e806c-en>.

More information

For more information on Education at a Glance 2022 and to access the full set of Indicators, see: <https://doi.org/10.1787/3197152b-en>

For more information on the methodology used during the data collection for each indicator, the references to the sources and the specific notes for each country, See Annex 3 (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3.pdf).

For general information on the methodology, please refer to the OECD Handbook for Internationally Comparative Education Statistics: Concepts, Standards, Definitions and Classifications (<https://doi.org/10.1787/9789264304444-en>).

Updated data can be found on line at <http://dx.doi.org/10.1787/eag-data-en> and by following the StatLinks  under the tables and charts in the publication.

Data on subnational regions for selected indicators are available in the *OECD Regional Statistics* (database) (OECD, 2022). When interpreting the results on subnational entities, readers should take into account that the population size of subnational entities can vary widely within countries. For example, regional variation in enrolment may be influenced by students attending school in a different region from their area of residence, particularly at higher levels of education. Also, regional disparities tend to be higher when more subnational entities are used in the analysis.

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<https://gpseducation.oecd.org/>

The data on educational responses during COVID-19 were collected and processed by the OECD based on the Joint Survey on National Responses to COVID-19 School Closures, a collaborative effort conducted by the United Nations Educational, Scientific and Cultural Organization (UNESCO); the UNESCO Institute for Statistics (UIS); the United Nations Children's Fund (UNICEF); the World Bank; and the OECD.

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