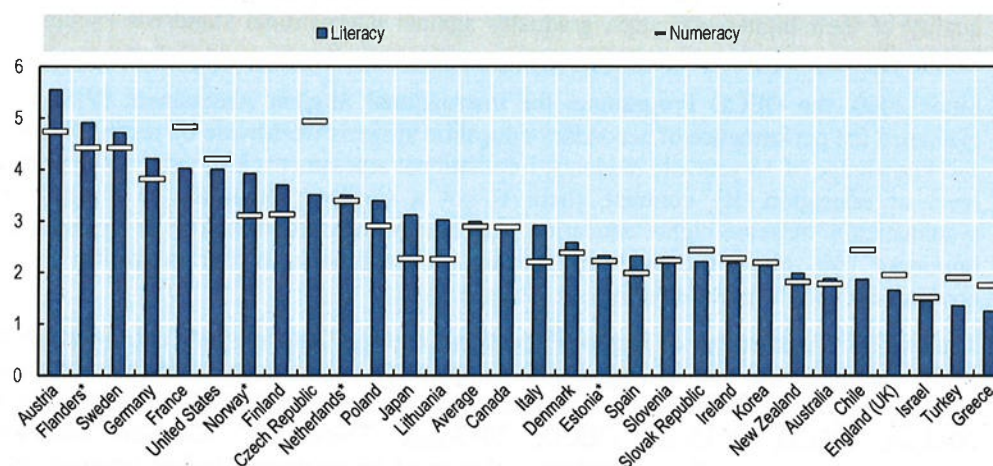


language immigrants tend to perform at a considerably lower level than other adults in Flanders, the Netherlands and Norway (OECD, 2013_[102]; OECD, 2013_[103]; OECD, 2013_[104]). In addition, the relative performance of Norway's young adults in literacy and numeracy is not as good as that of older adults. The Survey of Adult Skills also revealed that the Estonian labour market is not short of information-processing skills, although these skills are not equally distributed across the adult population. Older adults, those with a home language other than Estonian and those living in certain regions tend to be less proficient than the national average (Estonian Ministry of Education and Research, 2015_[105]).

Figure 5.15 shows the odds of reaching level 3 in the literacy and numeracy proficiency scores for adults younger than 35 with a higher education degree, compared to people of the same age with only an upper secondary education qualification. The odds ratios presented are calculated controlling for age, gender, immigrant and language background, and parents' educational attainment. Odds ratios reflect the relative likelihood of an event occurring for a group of interest relative to a comparison group. An odds ratio greater than 1 represents greater chances of an event (reaching proficiency level 3) occurring for the group of interest (individuals with higher education) vis-à-vis the comparison group (individuals with upper secondary education).

Figure 5.15. Adjusted odds ratio of reaching proficiency level 3, higher education graduates compared to upper secondary education graduates, 16-34 year-olds (2012 or 2015)

16-34 year-olds, by proficiency domain



Note: *Participating in the Benchmarking Higher Education System Performance exercise 2017/2018.

The adjusted odds ratios are computed through a logistic regression model and take account of differences associated with other factors: age, gender, immigrant and language background, and parents' educational attainment. The score differences are significantly different from 1 for all countries in both proficiency domains, except for literacy proficiency in Greece and Turkey.

Countries are ranked in descending order of the literacy proficiency difference.

Source: Adapted from OECD (2016_[101]), *OECD Survey of Adult Skills*, www.oecd.org/skills/piaac/data/.

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On average across OECD countries and economies, adults younger than 35 with higher education have about three times the odds of reaching proficiency level 3 compared to

people of the same age with only an upper secondary education degree, both in numeracy and literacy. The odds ratio for literacy proficiency is about 5, or larger, in Austria and Flanders. This means that, in these two countries, there is a large difference in the probability to reach level 3 between young adults with higher education and with upper secondary education attainment, even when accounting for basic socio-economic factors. In contrast, the odds ratio for literacy proficiency is lower than 1.5 in Greece, Israel and Turkey.

A large odds ratio of reaching proficiency level 3 for higher education graduates in a country may be an indication of the ability of the higher education system to increase the skills of its students, or at least of those who graduate. However, this result may also be driven by other factors, including selection into higher education. This arises if individuals with a higher proficiency level are more likely to enrol in higher education, and to graduate once they enrol. In this case, higher education graduates can perform at relatively high levels of proficiency independently of their higher education learning experience. Another factor driving the difference in proficiency may be the accumulation of skills outside education. In particular, since individuals are not surveyed immediately upon graduation, different work and life trajectories between higher education graduates and other individuals may be responsible for at least part of the observed proficiency differences.

5.8.2. Assessment of learning outcomes

Comparative measures of graduate learning outcomes could greatly enhance the ability to assess the effectiveness of higher education systems and help governments benchmark the quality of their higher education graduates against international standards (Schleicher, 2015^[106]).

Since 2000, the OECD Programme for International Student Assessment (PISA) has evaluated the performance of secondary education systems worldwide by testing the skills and knowledge of 15 year-old students; international assessments also exist at the primary level of education. By contrast, there is not a similar programme to directly and systematically measure higher education student learning outcomes. This is a particularly important gap, given the amount invested per student in higher education by the government and the private sector (see Chapter 3).

The OECD's Assessment of Higher Education Learning Outcomes (AHELO) feasibility study demonstrated that a large-scale comparative assessment of higher education learning outcomes is conceptually valid and for the most part technically feasible (OECD, 2012^[107]; OECD, 2013^[108]; OECD, 2013^[109]). There are, however, additional measurement and operational challenges that must be overcome before internationally comparable data on learning outcomes in higher education could be produced and used systemically. Despite the added complexity, there is growing interest across countries in measuring the learning outcomes of higher education (Box 5.7).

Box 5.7. Assessing higher education learning outcomes in OECD countries

Several countries and organisations are developing models to assess the learning outcomes and learning gain of higher education programmes and institutions, either as permanent or experimental initiatives (Van Damme, 2015^[100]; Goff et al., 2015^[110]; OECD, 2017^[2]; Goff et al., 2015^[110]; OECD, 2017^[2]; Zlatkin-Troitschanskaia et al., 2017^[111]):

- In the US, the Council for Aid to Education (CAE) developed the Collegiate Learning Assessment (CLA) and its more recent variant, CLA+, for colleges to measure critical thinking skills. More recently, CAE has partnered with the OECD on CLA+ International to assess learning outcomes in higher education globally. CLA+ will provide participating countries with data at the national, international, institutional and student levels. Countries can also choose to participate in international benchmarking.
- The Higher Education Quality Council of Ontario (HEQCO) is conducting a pilot project to test incoming students on their literacy, numeracy and problem-solving skills, and test them again when they leave as graduates. The test will be based on the OECD's Education and Skills Online assessment tool.
- The UK is funding a learning gain programme through the Office for Students to look at how to measure improvements in knowledge, skills, and personal development acquired during higher education. This will allow higher education institutions to better understand the effect of different learning and teaching practices, and thereby improve their support for students. The programme includes 13 pilot collaborative projects in over 70 higher education institutions to test and evaluate a range of approaches for measuring learning gain. Other activities include the National Mixed Methodology Learning Gain (NMMLG) project that uses various pre-trialled tools and survey instruments to track the learning gain of a group of more than 31 000 undergraduate students in ten higher education institutions. The project was launched in 2016, however, it is to be finished in the academic year 2019-2020 due to issues with the data collection process and a low response rate for the longitudinal sample. The Higher Education Learning Gain Analysis (HELGA) is another programme using existing data on the student experience to evaluate what the data indicate about learning gain. The data include continuation rates, student attainment, the National Student Survey (NSS) and the Destinations of Leavers from Higher Education Survey (DLHE) (HEFCE, 2018^[112]; Cook and Hewitt, 2017^[113]).
- The European Union has funded the Measuring and Comparing Achievements of Learning Outcomes in Higher Education in Europe (CALOHEE) study, which defined the programme learning outcomes of bachelor's and master's programmes in five subject areas: engineering (civil engineering), health care (nursing), humanities (history), natural sciences (physics) and social sciences (education). The methodology to be developed should also be applicable to other fields of study. The study builds on the Tuning Project, which developed threshold-level learning outcomes and competences for a range of disciplines.
- In Japan, as a spin-off project of the OECD AHELO Feasibility Study, the National Institute of Education Research developed a test item bank in order to

measure the learning outcomes of engineering students. The test was conducted in 2016 with 348 first semester master's students in nine Japanese institutions. In addition, the same test item bank was used in Indonesia, measuring learning outcomes of 37 fourth-year undergraduate students at the Bandung Institute of Technology (Cross et al., 2017^[114]).

A number of countries have also funded research into measuring graduate learning outcomes. The Australian Government funded the Assessing and Assuring Graduate Learning Outcomes (AAGLO) project in 2010 to examine what types of assessment tasks could be used to measure learning outcomes and the quality assurance processes needed. The project also developed a set of principles for those interested in designing new assessments or making strategic decisions about which assessments are important for measuring graduate learning outcomes (Barrie et al., 2012^[115]). The Federal Government in Germany is funding a research project over 2015 to 2019 to gather evidence on appropriate models and assessment tasks for measuring higher education learning outcomes (the Modelling and Measuring Competencies in Higher Education, KoKoHs) (Zlatkin-Troitschanskaia et al., 2017^[111]).

5.9. Labour market outcomes

One of the main expectations of students is that higher education will provide them with the skills needed to succeed in the labour market (OECD, 2017^[86]). Accordingly, a crucial dimension of the effectiveness of higher education is how well graduates fare in the labour market. The labour market outcomes of graduates are related to the quality of their higher education and their learning outcomes. However, the indicators that measure labour market outcomes may also reflect differences between graduates and other individuals that are independent from the higher education system. For example, they may reflect differences in personal characteristics, employment experience and skill levels that are independent of higher education. In addition, labour market outcomes are also a function of the labour market conditions of an economy, a variable higher education systems cannot control.

This chapter will explore labour market outcomes through measures of labour force status, earnings and, to some extent, the types of tasks performed by graduates. The age group has been restricted to focus on young individuals, who must have graduated relatively recently. Ideally, it would be more accurate to compute the indicators for recent graduates (i.e. those that graduated a certain number of years before the reference year) than for young graduates. However, this data are not available in sufficient quality or for a sufficient number of countries.⁹

Various factors influence the labour market outcomes of higher education graduates. Some of these are outside the higher education system, for instance, economic factors and the characteristics of the students themselves. However, there are a number of things governments, higher education institutions, social partners and students can do to help enhance the labour market outcomes of graduates (OECD, 2017^[86]). The participating jurisdictions use a range of information and regulatory policy levers to help enhance the labour market relevance of higher education and improve graduate labour market outcomes, which will be also explored in this chapter.

All jurisdictions have in place mechanisms to systematically collect information on the labour market needs and the employability of graduates (for example, graduate surveys or

forecasting models). In addition, in each jurisdiction, there are measures to encourage or mandate the establishment of structured relationships between higher education institutions (or at least, a part of them) and the world of work. Examples can be the inclusion of representatives of the world of work in executive or consulting boards, or the requirement for higher education institutions to demonstrate the labour market relevance of their programmes within the accreditation process. These structured relationships make it easier for employers or labour representatives to give feedback to higher education institutions and to participate in curriculum design, and could be among the reasons underlying the relatively good employment outcomes in the participating jurisdictions.

In addition, professional HEIs in Estonia, the Flemish Community and the Netherlands are required to include a work-based learning component in their programmes. Work-based learning can take many forms (e.g. apprenticeships, work placements and internships), and consists of an attempt to integrate the workplace in the learning environment. Work-based learning makes it easier to acquire practical and labour-market relevant skills for students, while also offering an effective recruitment tool to employers. To be effective, work-based learning must be systematic and integrated within the study programme (OECD, 2014^[116]), which requires the types of structured relationships between employers and institutions mentioned above. The systematic embedding of work-based learning in the curriculum could also be related to the relatively good employment outcomes of professional HEI graduates in Estonia, the Flemish Community and the Netherlands.

5.9.1. *Employment, unemployment and inactivity*

Graduate employment and unemployment rates are important measures of success in the labour market. The employment rate refers to the number of persons in employment as a percentage of the population in a given age group. The unemployment rate refers to the number of persons who are without work and actively seeking employment, as a percentage of the sum of persons who are employed or actively looking for employment (OECD, 2017^[6]). The inactivity rate measures the percentage of persons who are not employed and not actively looking for work within a given age group. Higher education attainment is associated with a higher employment rate and a lower unemployment and inactivity rate, on average across OECD countries (Box 5.8 and Figure 5.16).

In terms of the employment and inactivity rate, the largest difference between 25-34 year-old higher education graduates and individuals of the same age with upper secondary or post-secondary, non-tertiary education (about 15 percentage points in absolute value) is observed in Chile and Israel. In terms of the unemployment rate, in France (7 percentage points).

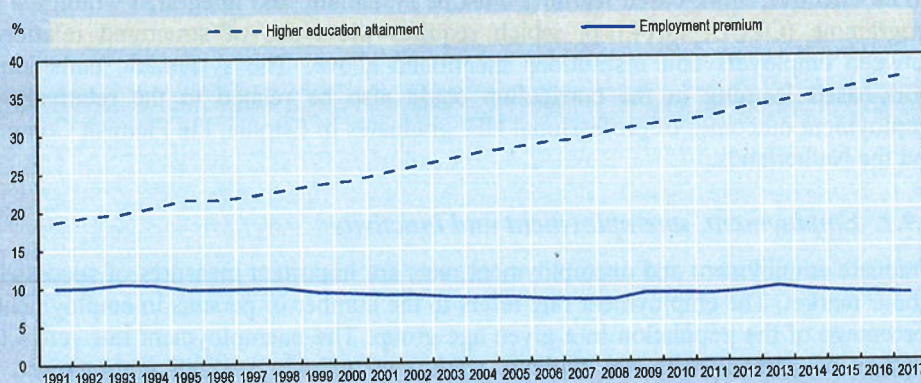
In the Netherlands and Norway, the inactivity rate of young individuals with higher education is 6 to 7 percentage points lower than for those with post-secondary, non-tertiary education, while in Estonia and Flanders, the inactivity rate is similar for these two groups. In terms of the unemployment rate, the gap is larger (over 3 percentage points) in Estonia and Flanders, and less large in the Netherlands and Norway.

Box 5.8. Trends in the employment premium of higher education graduates

The difference in the employment rates of 25-64 year-olds with higher education and with only upper secondary or post-secondary education – the higher education employment premium – remained remarkably stable between 1990 and 2016 (Figure 5.a). It passed from 10 to 9 percentage points between 1991 and 2017, on average across 13 countries with available data, and was not substantially affected by major economic events happening during this time period, such as the economic crisis hitting these countries in 2008.

Figure 5.a. Higher education attainment and the employment premium (1991 to 2017)

Trend in the 13-country average proportion of young adults with higher education and average difference between the employment rates of young adults with higher education and with upper secondary or post-secondary non-tertiary education (age group: 25-64 year-olds)



Note: The average has been computed for the 13 countries with no missing data for more than two consecutive years. These are Australia, Canada, Denmark, France, Germany, Greece, Italy, the Netherlands, Spain, Sweden, Switzerland, Turkey, and the United States. Around 7% of the data points have been imputed by a linear interpolation based on the two closest available data points.

Source: Adapted from OECD (2018^[3]), *OECD Education Statistics*, <http://dx.doi.org/10.1787/edu-data-en>.

StatLink  <https://doi.org/10.1787/888933941158>

The stability of the trend in the higher education employment premium is striking when compared with the growth in higher education attainment, which doubled in the same time period among 25-64 year-olds. This evidence suggests that a sharp increase in higher education attainment does not necessarily result in a fall of the employment advantage conferred by higher education. The stability over time of the labour market premium enjoyed by higher education graduates is confirmed by the available evidence on graduate earnings (OECD, 2018^[117]).