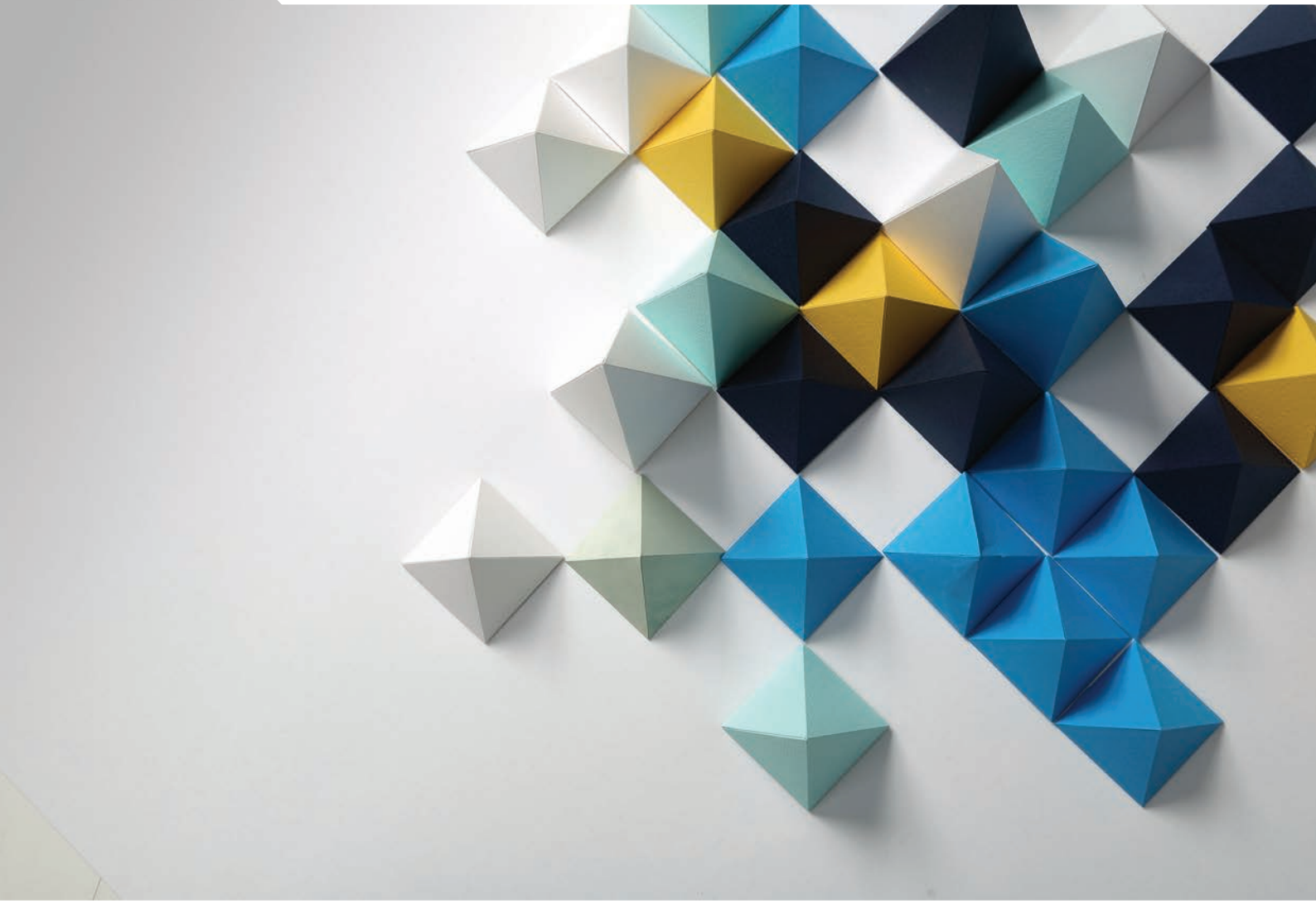
Higher Education in Norway

LABOUR MARKET RELEVANCE AND OUTCOMES



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Higher Education

Higher Education in Norway

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Introduction

One of the main objectives of higher education is to provide its graduates with the skills needed to succeed in the labour market. Skills have become a key driver of individual well-being and economic success in a global economy and a knowledge-based society. Countries rely on the skills of their people to drive innovation, competitiveness and inclusive growth.

Holding a higher education qualification is closely linked to higher earnings, labour market security, and a good working environment. These are also key factors shaping an individual's well-being, as shown by the OECD's Better Life Initiative, the OECD Job Quality Framework, and research in the fields of psychology, economics and sociology. People with higher levels of education have better health, are more likely to be civically engaged and less likely to be involved in criminal activity. Overall, they are more likely to be satisfied with their lives.

To achieve this mission to equip students with the skills they need to succeed in life, higher education systems strive to produce graduates with strong technical, professional and discipline-specific knowledge and skills, whatever their field of study. These skills, as signified by an academic degree, diploma or other qualification, send a signal to employers that a graduate has the competencies, interest and aptitude to work in certain jobs. And for many jobs, a higher education qualification is an essential requirement.

But higher education graduates are also expected to demonstrate a range of additional skills that are more transversal in nature. Transversal skills include key cognitive skills such as literacy, numeracy; problem solving, analytical reasoning and critical thinking; and social and emotional skills such as communication, teamwork, perseverance, initiative, leadership and self-organisation. These skills are often hard to measure, but are essential to the success of individuals and firms. They are needed to perform tasks across a variety of workplace settings. They enable people to adapt to changing demands within a job or move easily from one job or role to another during their careers as the labour market evolves.

On average, higher education graduates in OECD countries have developed skills that allow them to do well in the labour market. This is reflected in graduate earnings premiums and employment rates. However, the distribution of graduate earnings premiums indicates that a significant minority of graduates are not achieving the labour market success that might otherwise be expected of them. In particular, some higher education graduates have trouble transitioning to the labour market, while others are unable to find jobs that correspond to their academic training and qualifications. Higher education graduates are also discovering changing skill demands brought about by broad-based trends like globalisation, technological change and rapid population ageing. This brings into question the relevance and quality of the skills being produced in higher education.

Weaker-than-expected outcomes across the OECD raise multiple concerns. They are a disappointment for individual graduates and their families, who have invested in higher education and expect a good return in the form of well-paying jobs. Weak returns are also

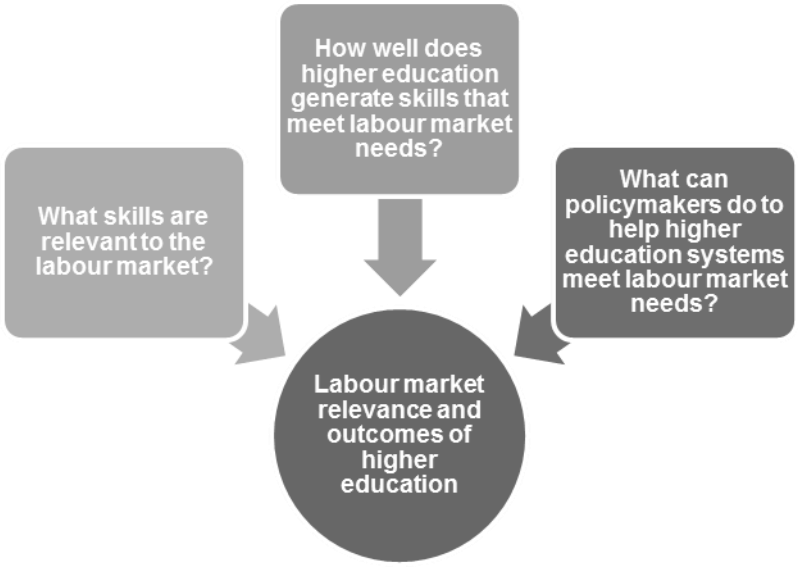
a concern for governments, which play a major role in funding higher education systems. Policymakers expect higher education to produce the skills that will foster productivity and innovation, and raise the overall quality of life of citizens.

Many employers report difficulties finding workers with the skills they require, and some claim that new higher education graduates lack the skills they need. On the other hand, some graduates are working in jobs that are not well matched to their qualifications which can lead to lower earnings and job satisfaction for workers, stunted productivity, and reduced economic growth.

These concerns reflect the importance of the labour market relevance and outcomes of higher education systems. Good labour market outcomes for higher education graduates have a positive impact on individuals and society. They support overall well-being; ensure value for public investments; provide private returns to individuals who invest in their education; and build the supply of skills needed for economic success.

The in-depth analysis of the labour market relevance and outcomes of higher education aims to help countries improve the labour market relevance and outcomes of their higher education systems through a better understanding of the links between the knowledge and skills developed in higher education and graduate outcomes; and how policies and practices can stimulate and enhance the development of more labour market-relevant knowledge and skills. The analysis is guided by three key questions to help countries identify what they can do to ensure that higher education graduates develop the skills needed for good labour market outcomes (Figure 0.1).

Figure 0.1. In-depth analysis of the labour market relevance and outcomes of higher education: key questions



The analysis of the labour market relevance and outcomes of Norway's higher education system therefore:

- identifies the knowledge and skills needed in the Norwegian labour market, taking into account other factors that are beyond the realm of the higher education sector (Chapter 2), and the structure and governance of the higher education sector (Chapter 3)
- assesses how well the Norwegian higher education system is developing these labour market relevant skills by looking at graduate skills and labour market outcomes (Chapter 4)

- identifies approaches in higher education in Norway that facilitate or hinder the development of labour market relevant skills (Chapter 5)
- explores the policy levers that Norway's policy makers are using to influence the development of labour market relevant skills in higher education and good labour market outcomes for graduates and assesses their effectiveness (Chapter 6).

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Executive summary

The higher education system in Norway generally produces graduates with good discipline-specific skills and a readiness to learn who enjoy positive labour market outcomes. This success can be attributed to Norway's robust and inclusive labour market and a series of reforms over the past 20 years to improve the quality of higher education. As a result, higher education graduates (aged 25-64) in Norway have one of the best employment rates in the OECD (89%) and one of the lowest unemployment rates (3%) in 2016. They also enjoy average earnings that are 6.7% higher than non-graduates.

However, past success is no guarantee of future success, especially as globalisation and technological change are transforming the Norwegian economy and in turn its skills needs. The pace of economic transformation may pose a challenge to the country's education system, which will need to be increasingly responsive in producing graduates with the right mix of discipline-specific and transversal skills. But higher education institutions and social partners are not completely aligned on what skills are more important for the future economy and society. A strong government role in steering the higher education system towards greater labour market relevance will be paramount.

Norway's higher education institutional practices matter for labour market outcomes

One of the key issues for Norway is that its higher education system is not making full use of practices that have a track-record for supporting labour market relevance and labour market outcomes.

Engagement with the world of work

Norwegian employers can provide higher education institutions with real-time insights about the skills that graduates need to succeed in the labour market. In Norway there is a tradition of collaboration between enterprises and higher education institutions, especially in research and governance matters. However, while the share of enterprises that report collaboration with higher education institutions is above the OECD average, Norway is behind other comparator countries such as Finland, Sweden, and Denmark. In addition, key forms of collaboration are less common. For example, collaboration on programme design, programme offerings, and staff mobility is not as well developed in Norway as other countries.

Work-based learning

Data shows that higher education graduates with work experience as part of their studies have a smoother transition to the labour market. Yet, fewer than half of Norway's master's students report participating in a practice period as part of their studies. In programmes such as the humanities, the provision of work-based learning is particularly low even though the evidence shows that it can improve graduate labour market outcomes significantly.

Innovative learning and teaching

Student-centred and active learning approaches can support the development of good professional skills and the transversal skills that are needed for any job. However, the use of these practices is not widespread and their application is uneven despite efforts to encourage more active learning approaches. While two-thirds of Norwegian academics believe that students are exposed to a variety of teaching approaches, lectures are still the most common form of teaching. The majority of higher education students (55%) are satisfied with the teaching and guidance they receive but most want more feedback from academic staff and better use of digital technology to facilitate learning.

There are no real barriers to the use of these more innovative practices in the Norwegian higher education system. The key factor preventing more widespread use of practices to help students develop labour market relevant skills appears to be the lack of a general consensus within the higher education system on the need to align higher education with labour market needs.

Public policy can steer higher education towards greater labour market relevance

The policy levers deployed in Norway to support the labour market relevance and outcomes of higher education could also be strenghtened and expanded. Norwegian policy makers recognise the importance of aligning higher edcuation to labour market needs, but have not placed an emphasis on steering the higher eduation system towards greater labour market relevance. Given the high degree of trust, dialogue, and autonomy within the Norwegian higher eduation system, the predominant policy approach has been to develop frameworks to encourage stronger labour market relevance and let higher education instiutions develop their own approaches. And while the higher education system has responded to some aspects of this agenda, there is room for policy makers to be more prescriptive to enable practices that support labour market relevance.

Strengthen the mechanism of collaboration between higher education institutions and social partners

Labour market relevance can be strengthened by facilitating the interactions between higher education institutions and social partners, particularly employers. Councils for Co-operation with Working Life (RSA) are the main forum for such collaboration, but these bodies, in general, are not as effective as they could be. Policy makers have the tools to strengthen them by facilitating the dissemination of best practices and by mandating their use at the operational level.

Similarly, there are no policy initiatives underway to encourage work-based learning in higher education. Policy makers can encourage the use of work-based learning through performance agreements between higher education institutions and the Ministry of Education and Research. Government can also lead by example by providing work-based learning opportunities through its role as an employer and by facilitating participation among small and medium-sized enterprises.

Ensure the system offers a broad range of qualifications

The demand for skills is anticipated to continue to rise in Norway's economy. As a result, policy makers should take steps to encourage the attainment of advanced skills at the master's and doctoral level. This could be achieved through the expansion of existing schemes that support doctorate students and attract more international students to Norway's higher education system. Greater use of incentives through the State Educational Loan Fund could encourage students to pursue programmes with high labour

market demand. It will also be important to ensure that the recently merged higher education institutions continue to offer a broad range of programmes.

Redouble efforts to support better outcomes

When graduates have difficulty transitioning to the labour market, it may be linked to their initial choice of higher education programme. A survey of Norwegian students indicates that labour market factors, such as expected earnings and occupation, play a significant role in shaping their choice of field of study. The main source of higher education information linked to labour market outcomes is the government website, www.utdanning.no. The website provides potential higher education students with information on entry requirements and possible labour market outcomes for different fields of study. However, a recent evaluation found that while three-quarters of surveyed students were aware of the site, only half had actually used it. The site could be improved by providing additional information about the labour market outcomes of graduates at the institutional and programme level. It would also be useful if it provided students and institutions with more information on anticipated skills needs.

Further, students' labour market outcomes can also be improved when they complete their studies and earn an academic qualification attesting to the skills that they have developed. Through a series of policy initiatives, Norway has seen incremental improvements in higher education completion rates, but there is room for further improvement by ensuring that students are better prepared for higher education and by providing students with the financial, academic and organisational support that they need to succeed in their studies.

Ensure better co-ordination across agencies and levels of government and use of labour market information

The Norwegian higher education system is complex and has many actors playing complementary roles. Strengthened co-operation across agencies and levels of government in terms of data sharing, career guidance, and labour market issues could lead to better planning and decision making at the individual, institution and system level.

The Norwegian Strategy for Skills Policy 2017-2021 noted that the various data sources developed in Norway are not used, maintained, and disseminated jointly, and they are not easily accessible and useful to students, higher education institutions, employers and policy makers. This information is vital for effective skills assessment and anticipation exercises which generate information about the current and future skills needs of the labour market (skill demand) and the available skill supply.

Chapter 1. Assessment and recommendations

This chapter outlines recommendations for enhancing the labour market relevance and outcomes of the higher education system in Norway. Each recommendation is accompanied by a policy rationale, a summary of key issues, and contextual information about Norway's labour market, economy, skills levels, and/or higher education system. The recommendations, developed for the Norwegian Ministry of Education and Research, are structured under three headings: aligning higher education with the changing needs of the labour market; ensuring students have the information needed to make informed choices; and co-ordinating across government to enhance labour market relevance and outcomes.

Advances in technology, enhanced global competition, and the changing structure of work are rapidly shifting the demand towards higher-level skills. There is also evidence that employers increasingly value strong transversal skills, such as the ability to communicate, work in teams, lead, solve problems and self-organise, and digital skills (OECD, 2017a). The pace of change poses a challenge for higher education as it aims, among other objectives, to meet the needs of the labour market by:

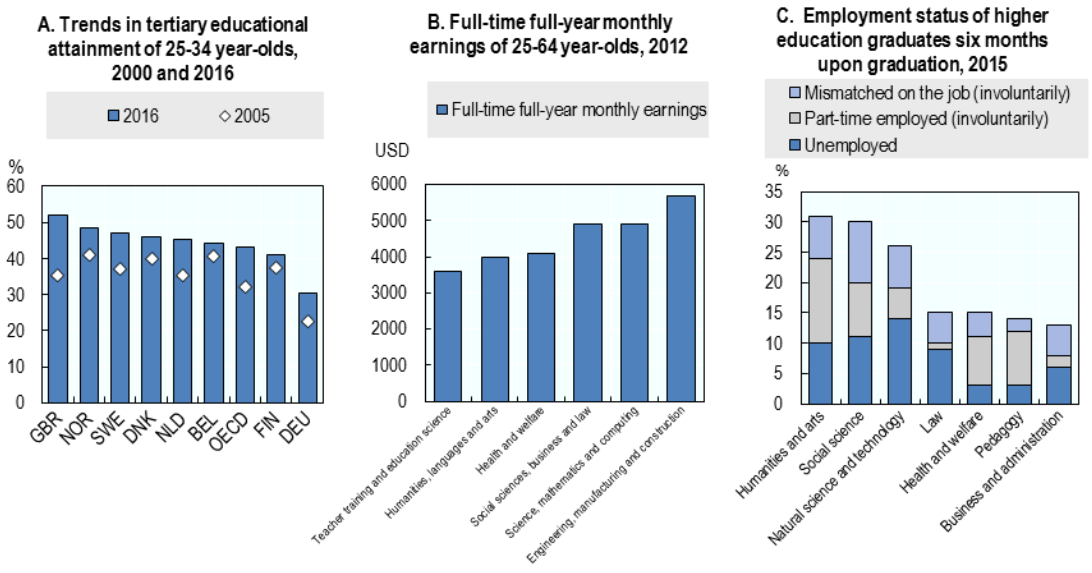
- Helping students develop the skills they need to transition and succeed in the labour market and society.
- Providing employers with a pool of highly skilled graduates from a range of different discipline areas so that they have the mix of skills they need to grow and prosper.
- Fostering productivity and innovation in the economy.

This challenge is especially pertinent in Norway, which aims to shift from a resource-based economy to one that is more knowledge based, all the while sustaining a high standard of living and competitiveness as a high-income, high-cost economy. This report analyses how well Norway's higher education system is responding to current labour market needs and preparing its graduates for the future world of work.

Norway's higher education graduates generally enjoy positive labour market outcomes. They have one of the highest employment rates among OECD countries, and some of the lowest risk of job loss. They enjoy some of the highest earnings and best working environments, as measured by the nature and content of the work performed, working-time arrangements and workplace relationships.

Graduate skills are relatively well aligned with current labour market needs. The increase in the proportion of adults in Norway with a tertiary education qualification over the last decade (Figure 1.1, Panel A) reflects the increasing demand for higher skills in the labour market and the labour market relevance of Norway's higher education. Employers report being largely satisfied with the discipline-specific knowledge and skills of graduates and the broad range of qualifications provided by the higher education system. However, earnings and initial employment rates vary across fields of study, and some recent graduates, especially those in the arts and humanities, take longer to get jobs aligned with their skills and qualifications (Figure 1.1, Panels B and C).

Figure 1.1. Higher education attainment and labour market outcomes, by field of study



Source: OECD (2017b), *Education at a Glance 2017: OECD Indicators*, http://dx.doi.org/10.1787/eag-2017-en; Survey of Adult Skills (PIAAC) (2012, 2015); and Støren, L.A. et al. (2016), *Kandidatundersøkelsen 2015: I hvor stor grad er nyutdannede mastere berørt av nedgangskonjunkturen?*, https://brage.bibsys.no/xmlui/handle/11250/2393490.

StatLink http://dx.doi.org/10.1787/888933725943

A well-funded higher education system and a range of policy initiatives to improve the quality of higher education, including performance-based funding and performance agreements with the higher education institutions and the establishment of centres of excellence in learning and teaching, have been generating relatively strong discipline-specific knowledge and skills and some transversal skills. In particular, the percentage of higher education graduates with strong problem solving skills in technology-rich environments is among the highest across OECD countries participating in the Survey of Adult Skills.

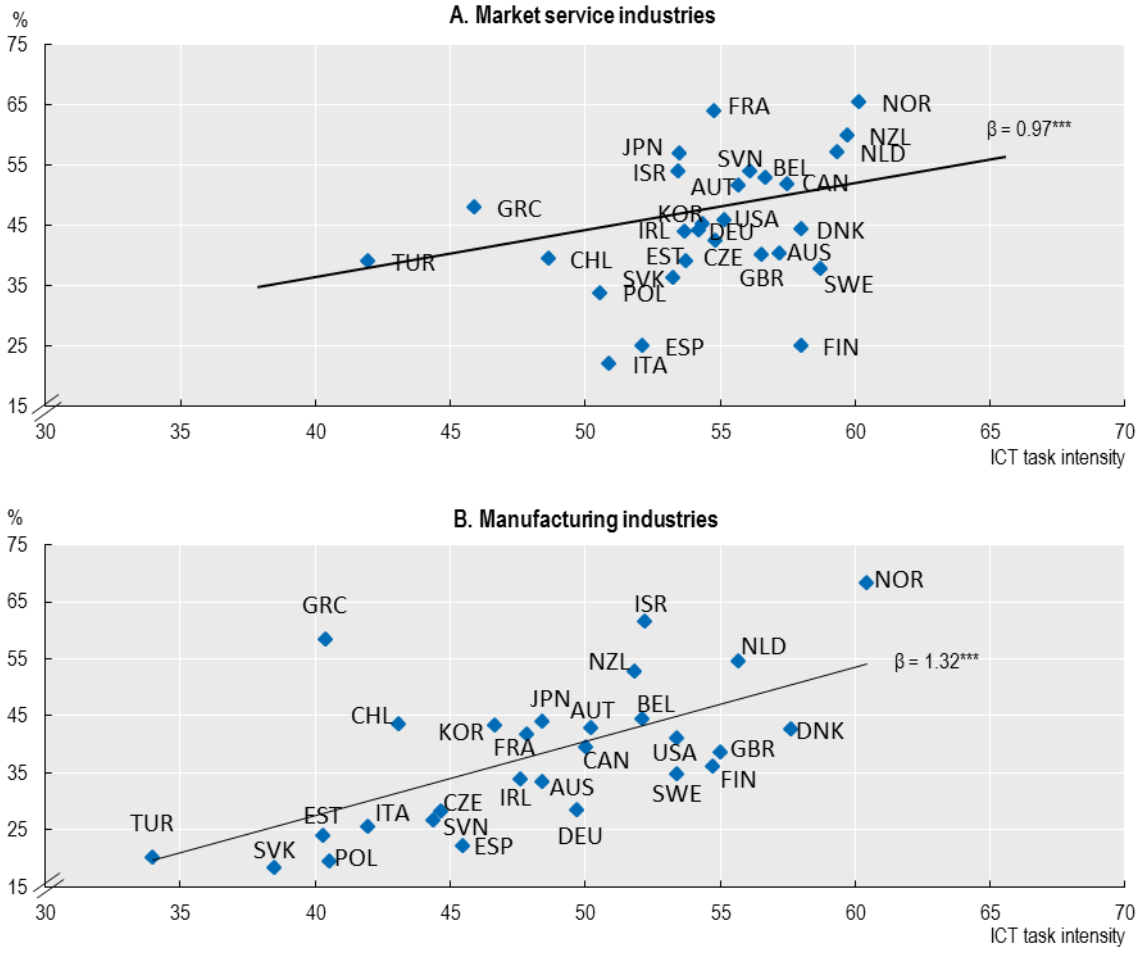
Favourable labour market conditions in Norway, propelled by business dynamism and sound management of the wealth generated by natural resources, have historically enabled the smooth transition from education to the world of work for higher education graduates. High rates of labour force participation and employment are a core feature of Norway's "Nordic model" ensuring inclusiveness and low inequality. Most notably, Norway's employment rate among women, at a little below 75%, is nearly 15 percentage points above the OECD average, and just a few percentage points below that of men (OECD, 2018). Norway also exhibits the highest levels of information and communication technology (ICT) task intensity and non-routine employment in the business sector among OECD countries (Figure 1.2).

But oil prices are significantly lower than their peak in 2014, which has had a negative effect on the Norwegian economy, where the oil sector is a key driver of economic growth and a key contributor to employment. Labour productivity and cost competitiveness have been slowing down, as in many other OECD advanced countries. Norway remains among the least specialised advanced economies in technologically advanced manufacturing industries and complex business services, despite a slight increase since the 2000s (Figure 1.3). The unemployment rate for recent higher education

graduates has also increased at a faster pace than the overall unemployment rates for all higher education graduates and the entire population.

Figure 1.2. Share of non-routine employment and ICT task intensity

2012 or 2015



Note: The "routine intensity of jobs" captures the degree of independence workers have to plan and organise their activities and time, as well as their freedom to decide what to do on the job and in what sequence. The "ICT task intensity of jobs" reflects the extent to which workers perform tasks ranging from simple use of the Internet to the use of Word or Excel software or a programming language. Data for Belgium refers to Flanders and for the United Kingdom to England and Northern Ireland.
Source: OECD (2017c), *OECD Science, Technology and Industry Scoreboard 2017: The digital transformation*, http://dx.doi.org/10.1787/9789264268821-en.

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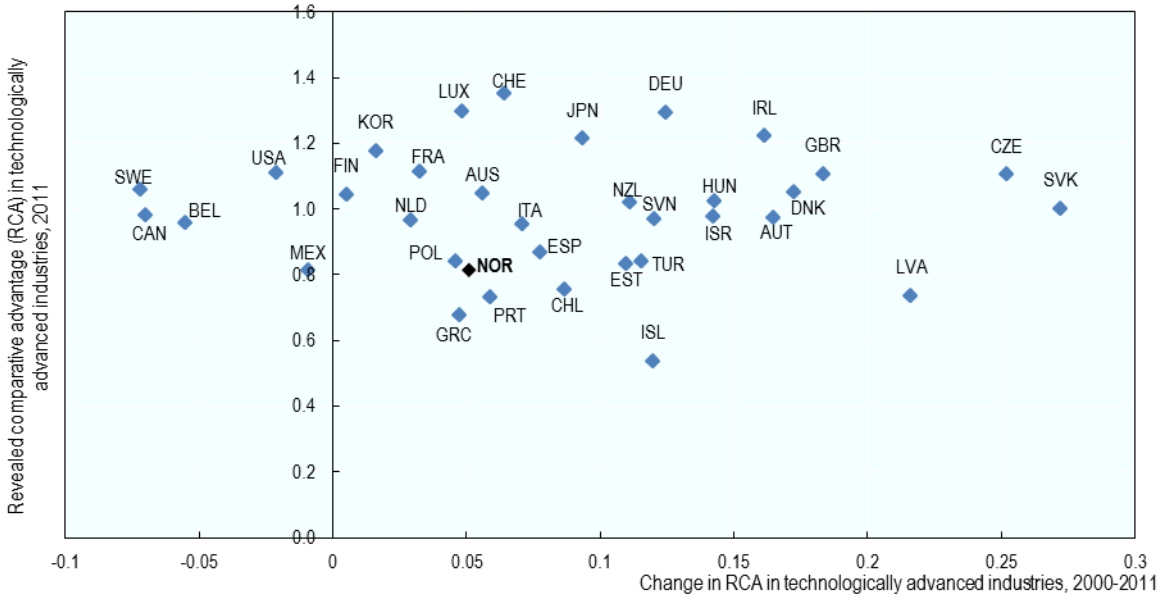
Ensuring solid skills across the entire population is becoming increasingly important; however, Norway's performance in international tests of learning and skills is average on the whole. Norway's scores in science and mathematics in the Programme for International Student Assessment (PISA) have remained around average, with some increases between 2012 and 2015. However, Norway has shown sustained progress in reading performance, and the mean score for 15-year-olds in Norway is one of the highest among PISA-participating countries and economies. According to the Survey of Adult Skills, adults are performing generally above average (Figure 1.4, Panel A), but certain groups have only middle-ranking or low performance. In particular, Norway's youth are

below average in literacy and only average in numeracy (Figure 1.4, Panel B), as compared with their peers in other countries. In Norway, the gap in literacy proficiency between workers in elementary occupations, such as labourers and production workers, and workers in skilled occupations, such as professionals and technicians, is among the largest observed across OECD countries (Figure 1.4, Panel C). Norway's rankings are particularly concerning given that public spending on education is comparatively high and the importance of skills in transforming Norway's economy and sustaining strong economic and social outcomes.

The higher education system has an important role to play in the transformation process. It needs to produce graduates with a strong mix of skills who can adapt their knowledge and skills to new working requirements and transform the nature of their work. Higher education institutions across the system need to deliver a broad range of qualifications, support all students so that they complete their higher education programme and transition smoothly to the labour market, and maintain multiple pathways for individuals to enter higher education and continue to develop new and solid skills throughout life.

Figure 1.3. Trend in specialisation in technologically advanced industries

2000-2011

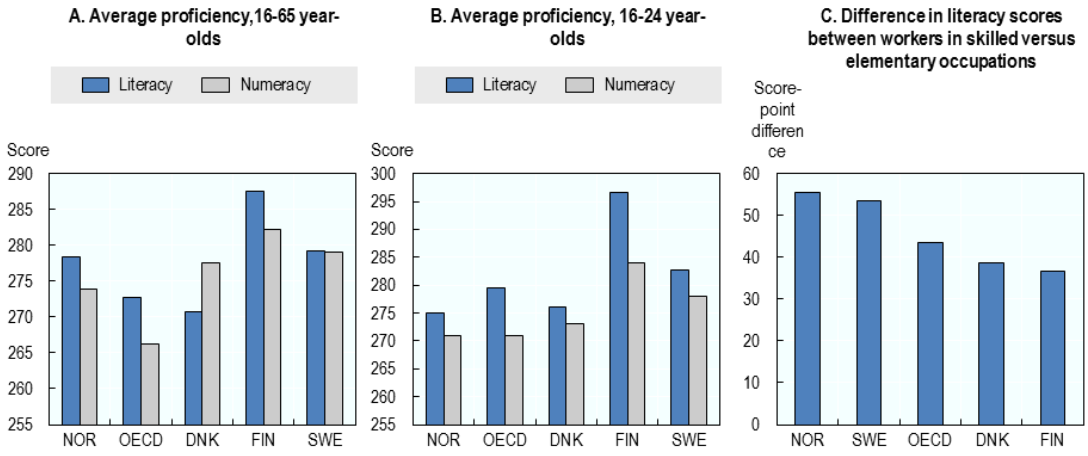


Notes: Technologically advanced industries include three high-tech manufacturing industries – Chemicals and chemical products, Computer, electronic and optical, and Other transport equipment, and five business services industries – Finance and insurance, Real estate activities, Renting of machinery, equipment, Computer and related activities, and Research and development and other services.
Source: OECD (2017d), *OECD Skills Outlook 2017: Skills and Global Value Chains*, http://dx.doi.org/10.1787/9789264273351-en.

StatLink http://dx.doi.org/10.1787/888933725981

Figure 1.4. Skills of Norway's adults

2012



Source: OECD calculations based on the Survey of Adult Skills (2012, 2015) Database.

StatLink http://dx.doi.org/10.1787/888933726000

Aligning higher education with the changing needs of the labour market

Ensuring students develop the high-quality skills needed in the labour market

Rationale

One of higher education's core missions is to produce graduates with the right professional and discipline-specific knowledge and transversal skills to succeed in the labour market. The ability of higher education to develop these skills as the economy of Norway continues to diversify and transform is a significant challenge. As noted in the White Paper on Quality Culture in Higher Education (Meld. St. 16), the majority of occupations in 2020 will require skills and expertise that are significantly different from the skills needed today (Norwegian Ministry of Education and Research, 2017a).

To ensure that higher education is keeping pace with the changing skills needs of today and in the future, Norway's higher education system needs to be more engaged in effective practices that will enhance its labour market relevance and outcomes. This means more widespread and effective use of student-centred, active learning approaches that put students at the heart of the curriculum. It also means a greater focus on teaching key transversal skills alongside subject-specific knowledge. These transversal skills, such as creativity, problem solving, resilience, teamwork, and critical thinking, are skills that are highly valuable across the labour market. These skills are best developed through learning and teaching methods that put transversal skills into practice rather than through the traditional lecture format where a knowledgeable professor simply delivers information to a captive audience.

In addition to learning and teaching inside the classroom, higher education can encourage learning that takes place in the workplace. Work-based learning is usually developed in collaboration with employers who provide placements for students and enables them to develop work-relevant technical and professional skills, as well as transversal skills. Some of these transversal skills, such as organisational savvy, interpersonal sensitivity,

and professionalism, are more easily developed in the workplace than in the classroom (Shoenfelt, Stone and Kottke, 2013).

Collaboration between higher education institutions and social partners on curriculum design and delivery and inter-sectoral mobility of staff, among others, can also support the labour market relevance of higher education. Structured and binding arrangements between higher education institutions and the labour market can facilitate the use of these practices and make them more effective.

Key issues

Both the 2003 Quality Reforms in Higher Education and the 2017 White Paper on the Quality Culture in Higher Education place an emphasis on innovative teaching and learning approaches. Higher education institutions have redeveloped their approach to learning and teaching significantly over the last 15 years. The Norwegian government introduced the Centres for Excellence in Education Initiative (SFU-ordningen) in 2010 to further improve the quality of learning and teaching. The Centres for Excellence aim to develop good learning and teaching practices in specific fields of study, and innovative approaches, such as the use of online tools, flipped classrooms, problem-based learning, seminars, and group work.

The eight Centres of Excellence have successfully aligned programmes with broader higher education strategies, supported relevant research in their areas of teaching, and led to better and more collaboration among academic staff (Carlsten and Vabø, 2015). However, the work of the centres has not been integrated enough into higher education institutions. Establishing a Centre for Excellence dedicated specifically to learning and teaching in higher education could raise the importance of developing good learning and teaching practices across the higher education system. This would complement the discipline-specific centres and ensure that all fields of study have access to information and good practices on how to improve learning and teaching.

In its response to the White Paper of Quality Culture, the government requires higher education institutions to develop pedagogical merit systems to encourage more teaching initiatives and reward high-quality teaching based on documented results. This approach is in its infancy, but all institutions are aiming towards implementation in the coming years. This could go some way to raising the profile of learning and teaching in higher education, where performance in research takes precedence. However, the government should ensure that this initiative is evaluated to assess its effectiveness.

Surveying students on their engagement with the study process can provide greater incentives to implement innovative practices at institutions that aim to raise the quality of learning and teaching. The student satisfaction survey, *Studiebarometeret*, conducted by the Norwegian Agency for Quality Assurance in Education (NOKUT) gathers information and views from students on a range of quality issues that capture some key elements of engagement on a periodic basis, such as participation in work-based learning, prevalence of certain teaching approaches and exposure to internationalisation.

However, the survey does not include questions that focus on teaching or how much students engage with different practices that could help them develop labour market relevant skills on a regular basis or in any great depth. This additional information would provide greater help for students in their choice of study. It could also be a useful measure of the quality of learning and teaching in institutions, and could be included in the performance agreements.

The provision of work-based learning in Norway's higher education system is rather low and not evenly distributed across fields of study. In 2015, only 43% of master's graduates

reported to have had practice periods (voluntary or mandatory) during their studies (Støren et al., 2016). Some programmes, such as health, education, and engineering, have a long tradition of collaboration with employers by integrating practice periods into the curriculum. In contrast, work-based learning is particularly low in the humanities fields of study (Thune and Støren, 2015). However, evidence shows that participation in work-based learning helps students transition effectively to the labour market and obtain good labour market outcomes, particularly in this field of study (Thune and Støren, 2015). The government could use performance agreements to encourage higher education institutions to embed work-based learning periods into their programmes.

With the exception of the health and education sectors, the broad public sector, including the national and regional government administration, government agencies, and other organisations that are fully or partly financed by public funding, do not provide work-based learning to students, despite employing almost 50% of all higher education graduates (Næss, 2011). This is a missed opportunity for students to gain work experience in an important sector.

Norway's private sector, particularly large companies, are keen to offer training and internship places to higher education students as trainees may be future recruits. However, the majority of Norway's employers in the private sector consist of small and medium-sized enterprises (SMEs), and they find it difficult to offer work-based learning because of lack of resources. This could be addressed by encouraging greater co-operation between SMEs so that they can share administrative expenses and be in a better position to reach out to higher education institutions with offers of internships, research projects and other work-based learning opportunities for students. This would help SMEs build networks and relationships with higher education institutions, which could lead to greater involvement in applied research and other projects.

The main venue to encourage collaboration between individual higher education institutions and social partners in Norway are the Councils for Co-operation with Working Life (RSA). The RSAs were created by the Norwegian government in 2011 to facilitate a more structured and binding collaboration between higher education and the world of work in order to strengthen the labour market relevance of degree programmes and continuing education and share information. All state-owned higher education institutions are required to have an RSA.

RSAs have played a generally positive role in bringing social partners and higher education institutions together to share information, promote strategies for collaboration, and inform programme content and development at a strategic level. However, there is wide variation in the quality of RSAs, and the collaboration has not been as deep or effective as envisioned. There appear to be few avenues for sharing good practice and peer learning across the higher education system (Tellmann et al., 2017). Another key issue, with a few notable exceptions, is that RSAs have little influence over the programme level, where social partners could play a role to inform programme design and delivery.

Box 1.1. Policy recommendations: Ensuring students develop the high-quality skills needed in the labour market

1. **Quality of learning and teaching**
   a) Establish a centre of excellence focused on learning and teaching in higher education more broadly as part of the Centres for Excellence in Education Initiative (SFU-ordningen).
   b) Monitor implementation of the pedagogical merit system for high-quality teaching and ensure it is evaluated to assess its effectiveness.
   c) Expand the *Studiebarometeret* survey to include additional questions on student engagement, the quality of learning and teaching, and use of effective practices. The survey should be administered regularly at an institutional level to provide students with information by field of study and institution, as well as aggregate data.
2. **Work-based learning**
   a) Use performance agreements to encourage higher education institutions to embed work-based learning periods into more of their programmes.
   b) Establish more work-based learning opportunities in the broader public sector, including the ministries of the national government.
   c) Encourage co-operation between SMEs to reduce administrative costs and be in a better position to offer work-based learning opportunities for students.
3. **Councils of Co-operation with Working Life**
   a) Develop a mechanism for RSA committees to share experiences and best practices that can be replicated across the system.
   b) Require higher education institutions to establish RSA sub-committees at the operational level to better support their design and delivery.

Ensuring the system offers a broad range of qualifications

Rationale

Technology and global competition are driving the transformation of Norway's economy away from the oil sector towards a more diverse and knowledge-based economy. To exploit opportunities arising from these developments in a high-cost labour market and to ensure that nobody is left behind, Norway's higher education system will need to develop a broad range of skills for the labour market, including skills at the most advanced levels of higher education. Norway could also supplement its domestic talent by attracting international talent to its higher education system in order to meet the demand for skills.

Key issues

Higher education graduates are currently being absorbed and rewarded in the labour market, despite a significant increase in the number of people participating in higher education (Støren and Wiers-Jenssen, 2016). However, the share of the population with a master's qualification is below the OECD average, and with a doctoral qualification at the OECD average. Furthermore, the graduation rate of youth below the age of 35 with these qualifications is lower than the rates of Norway's neighbouring economies (OECD, 2017b). Students may need to be more aware of the importance of these higher qualifications to meet future labour market needs in Norway.

The relatively high age for first-degree graduates from higher education, a recent decline in the number of doctoral places funded by Research Council of Norway (RNC), and the comparatively low financial returns to advanced studies in Norway may be discouraging students from undertaking or completing advanced degrees. In 2015, the earnings for master's and doctoral graduates were only 57% higher than the earnings of upper secondary education graduates in Norway, compared to an OECD average of 98% (OECD, 2017b).

Norway encourages completion at the doctoral level through performance-based funding, and a 2012 evaluation of doctoral degree programmes in Norway shows that they are consistently regarded as high-quality programmes with good work and learning conditions for doctoral candidates. While the number of doctorate degree holders has increased since 2005, the graduation rate at this level remains relatively low, particularly if international and foreign students are excluded from the calculations (OECD, 2017b).

To encourage people already in the labour market to upgrade their skills through advanced studies, the RNC developed the Public Sector PhD scheme in 2014 to complement the existing Industrial PhD scheme in the private sector. These programmes provide financial support to public sector institutions and companies engaged in market-oriented activities, which allow their employees to take a doctoral degree relevant to their area of responsibilities. The Industrial PhD scheme in particular is designed to support long-term, industry-oriented research that has the same level of scientific merit as the general doctoral degree education.

Many of Norway's international students are enrolled in advanced programmes in quantitative-intensive fields of study that are in demand in the labour market and, as a result, they could help meet some of the demand for quantitative and entrepreneurial skills in Norway. However, Norway has relatively few international students at its higher education institutions. This challenge is exacerbated by social exclusion: a survey of international students at the master's and doctoral level found that a third rarely or never socialised with Norwegian students (Norwegian Centre for International Cooperation in Education, 2016).

Norway could follow the example of another non-English speaking country, the Netherlands, to attract international talent, particularly at more advanced higher education levels (OECD, 2017b). The Netherlands has developed a comprehensive plan, known as "Make it in the Netherlands", which supports the acquisition of the Dutch language, deeper integration into the social life and culture of the Netherlands, and flexible visa and hiring procedures.

The Norwegian government has encouraged the merger of universities and university colleges throughout Norway as a way of enhancing competition for resources and students, achieving efficiency, and strengthening performance. It has been shown that mergers in various higher education systems have resulted in larger and more comprehensive institutions that provide stronger academic programmes and better support services, more choice for students, and a greater capacity for organisational flexibility (Harman and Harman, 2003). However, there is also a risk that this approach could reduce the diversity of the higher education system. The absorption of smaller university colleges that provide a range of largely professional and vocational programmes into larger, comprehensive, multi-campus universities could result in a smaller range of educational programmes on offer in the future. The performance agreements could be used to ensure that the mergers maintain the broad range of qualifications currently on offer. It will be important to monitor and evaluate the effectiveness of the performance agreements in achieving this goal.

Many countries use price mechanisms in the form of tuition fees and differentiated financial support through student financial assistance programmes to steer students towards certain fields of study and ensure higher education institutions continue to offer a broad range of programmes. Norway's open and accessible education system is free, and the government uses student financial assistance incentives sparingly. However, Norway has used student financial assistance to steer students towards certain fields of study and occupations in the labour market in some instances. A current programme includes student loan debt relief measures for all graduates working in certain areas of northern Norway, medical practitioners in certain underserviced regions, and teachers with some specialisations. In addition, starting in 2025, graduates who work as primary teachers will be provided debt relief.

Box 1.2. Policy recommendations: Ensuring the system offers a broad range of qualifications

4. Attainment of advanced degrees

a) Build awareness of the importance of advanced qualifications to meet Norway's current and future skills needs and attract more students into advanced programmes.

b) Expand the public sector and industrial PhD schemes to attract more individuals to undertake doctoral studies in market-oriented fields of study.

c) Develop a strategy to recruit and better integrate high-performing international students to Norway.

5. Diversity of programmes offered in higher education

a) Continue to use performance agreements to ensure Norway maintains a diverse higher education system and evaluate the effectiveness of these agreements in achieving this goal across the system.

6. Student financial assistance incentives to address skills needs

a) Monitor and evaluate the effectiveness of financial incentives through the State Educational Loan Fund that reward graduates to work in certain professions or regions. Consider expanding the scheme to other areas of skills shortages if proven effective.

Helping students succeed in higher education and the labour market

Ensuring students have the information needed to make informed choices

Rationale

Timely and reliable information about the labour market, including information about jobs that are currently in demand, jobs that are projected to be in demand in the future, earnings associated with different occupations, and the professional, technical and transversal skills that jobs require, can play an important role in shaping a student's decisions about what field of study to pursue.

To be effective, labour market information needs to be complemented and contextualised through career guidance. The Norwegian Strategy for Skills Policy 2017-2021 stressed the importance of career guidance in meeting Norway's skills needs. Career guidance services need to provide coherent advice that draws on knowledge of the labour market and current and future labour market skills needs. In addition, this information needs to be presented to people who are making choices about education and employment in a

simple and useful way (Norwegian Ministry of Education and Research, 2017b). The Skills Norwegian Strategy for Skills Policy also noted the importance of career guidance early in the educational pathway to prevent and reduce dropout rates and poor choices in secondary education and later studies, as well as counteract traditional gender choices. (Norwegian Ministry of Education and Research, 2017b).

Key Issues

A survey of Norwegian students indicates that labour market factors, such as expected earnings and occupation, play a significant role in shaping their choice of field of study (Damen et al., 2016).

The main source of higher education information linked to labour market outcomes is the government website, www.utdanning.no. The website provides potential higher education students with interactive information about the average scores required to enter a certain field of study at different higher education institutions. The website also lists the types of jobs in which graduates from a certain field of study typically work, the number of people working in those occupations, the anticipated number of jobs in the future (based solely on projections of Statistics Norway), and the median earnings for a given occupation. However, the site does not provide any labour market outcome information at the institution level, nor does it provide information on anticipated skills needs. This would make the website a much more effective tool to inform student choice. In addition, the website needs to be easily accessible to users. An evaluation of the site in 2013 found that while three-quarters of surveyed students were aware of the site, only half had actually used the site (IPSOS MMI, 2013).

The White Paper on Quality Culture in Higher Education (Meld. St. 16) noted that Norway's prospective students needed better labour market information to make informed choices about programmes in higher education (Norwegian Ministry of Education and Research, 2017a). In response, the government is planning to develop a single web portal to bring all the data sources together to make it easier for users to find information. It will be important to ensure that the portal is user-friendly for students, and that they are aware of the site and how it can be used to inform their study choices.

In Norway, the Education Act guarantees that all students within the secondary school system have access to career guidance to get advice on their choice of education and vocation, information about educational pathways in Norway and abroad, and knowledge about the labour market (Euroguidance, n.d.). Individual schools have discretion to set up their career guidance offering as they see fit, but regulations require guidance staff to be up to date on educational options and labour market needs. However, no specific background or qualification is required for guidance counsellors.

Career guidance at schools is supported by the follow-up service *Oppfølgingstjenesten*), which provides youth aged 16-21 who are not in education with career guidance, job opportunities, and advanced and basic skills training. Adults have access to career guidance through regional career guidance centres run by local authorities. These regional career guidance offices provide information and offer peer support to their colleagues at the school level (Norwegian Ministry of Education and Research, 2016). However, despite the career guidance services being available to youth prior to taking up their studies, only one in three students in higher education state that they are aware of the labour market opportunities available (Kantardjiev & Haakstad, 2017).

To improve career guidance in Norway, Skills Norway has been tasked with establishing a national e-guidance centre. The centre will be staffed by professional career guidance counsellors who will deliver advice by online chat or by phone to anyone who wants to use the service (Skills Norway, 2017).

In addition, the committee, appointed by the government in 2015 to develop a comprehensive system of career guidance, recommended that staff who act as career counsellors in schools need to have appropriate training and qualifications in career counselling (Norwegian Ministry of Education and Research, 2016).

Box 1.3. Policy recommendations: Ensuring students have the information needed to make informed choices

7. Online labour market and education information for prospective students

a) Develop and publicise a web portal with indicators on the quality of learning and teaching in higher education and labour market outcomes, as proposed in the White Paper on Quality Culture. Alternatively, consider expanding and promoting the existing www.utdanning.no website as an integrated source of information. The integrated web portal should include:

i. Information on the quality of learning and teaching, including the expanded student satisfaction survey (*Studiebarometeret*) (Recommendation 1c).
ii. Data on employment rates by field of study from the biennial graduate survey (*Kandidatundersøkelsen*) of the Nordic Institute for Studies of Innovation, Research and Education.
iii. Information about the skills that employers are seeking from employer surveys and the NAV business survey (*Bedriftsundersøkelse*).
iv. Detailed labour market outcome data disaggregated by programme and higher education institution.
v. Media campaigns undertaken by the ministry to promote enrolment in a given field of study.
vi. Reports from the Official Norwegian Committee on Skills Needs.
vii. Labour market forecasts by Statistics Norway and other sources.

8. Career guidance

a) Require guidance counsellors at schools to have appropriate qualifications.

Ensuring students complete their study programmes

Rationale

The time-to-completion rates in higher education represent a pertinent labour market issue in Norway as the Nordic economic model is predicated on high labour force participation in order to support the social welfare system. In light of demographic change, technological progress, slowing labour productivity growth and possible labour market shortages, it may become increasingly important for Norwegians to gain qualifications within shorter timeframes in order to ensure timely entry into the labour market and therefore provide employers with greater access to the skills they need to support innovation and enhance competitiveness.

Timely completion also allows individuals to generate additional earnings that contribute to their own economic well-being and support government revenues, which in turn supports the Nordic social model and plays a role in Norway's high standard of living.

Even more serious in the context of an economy in the process of upskilling is non-completion. If students do not complete their programmes and develop key skills they may find themselves disadvantaged in the labour market. Non-completion also raises efficiency concerns as it can represent a waste of financial and human resources. This is a particular concern in the context of the significant investment in higher education made by the Norwegian government (e.g. high public investment in higher education institutions and student financial assistance) and the relatively low share of investment made by households and individuals.

Key issues

Several factors explain why Norwegian students do not complete their studies in the prescribed period. Some students may not have the skills to succeed in the chosen programme, or may not receive enough support from higher education institutions to help them develop the skills needed to succeed. As a result, they may advance through their study programme at a slower rate. Optional aptitude tests at the application stage and more institutional autonomy around admission standards could help incoming students to be more aware of the skills needed to succeed in a particular programme.

A significant number of students change programmes and institutions throughout their studies, which can delay the completion of their programme. Half the students surveyed in 2009 stated that they had transferred from one higher education institution to another (Hovdhaugen and Aamodt, 2009). Most students indicated that they switched institutions to start a new programme. This suggests that better information and career guidance from the outset could have helped students identify the programme that was right for them at an earlier stage.

The relatively low financial cost of participation in higher education in Norway, and the ability to earn some income without an equal reduction in their student loan allocation, means that students do not necessarily have a strong incentive to complete higher education as soon as possible and seek full-time employment. There are no tuition fees in Norway; higher education students receive loans and grants for costs associated with study; and there is a long period of eligibility for student financial assistance. In addition, the flexibility of the system enables students to combine study and part-time work without jeopardising their access to student financial support (OECD, 2016). However, significant rental costs in some metropolitan areas, particularly Oslo, could negate these factors (Statistics Norway, 2017a).

To address timely completion, the government provides financial incentives for those who complete their programmes within the prescribed times through the student loan scheme. Higher education institutions are also required to enter into study contracts with students to monitor their progress and ensure that they are aware of issues that need to be addressed. A recent evaluation of the study contracts found that many higher education staff and students did not recognise that the key purpose of the contracts was to help students complete their studies within the prescribed period of time. Institutions were not checking student progress more than once a year and they often let students fall far behind in their studies before they intervened. The evaluation found that the lack of common guidelines regarding the use of study contracts and the consequences for various regulations and practices was problematic. In addition, the different uses of study contracts across institutions, as well as different reporting procedures, made it difficult to monitor their effectiveness. The evaluation panel made a series of recommendations to address these issues (Nordhagen, Dahle and Skjervheim, 2016).

Even more problematic is the 20% of bachelor degree students who leave higher education without acquiring a qualification (Statistics Norway, 2017b). The main reasons

for leaving higher education without a degree are finding a job, falling behind in study progression, and lack of interest in studies (Hovdhaugen and Aamodt, 2009).

Leaving because they have fallen behind in their studies may suggest a lack of preparation on the part of students. As a record number of students participate in the system, the range of skills and motivation that they possess will vary significantly. The higher education system may not be adequately equipped to support this sort of diversity in the student population.

Leaving higher education for a job is not a critical issue for students in the current context, as many are able to obtain jobs in Norway's robust labour market without a higher education qualification. These non-completers may also be aware that Norway's flexible higher education system and lifelong learning culture provide good opportunities to return to higher education later in life. In fact, some measures of non-completion that rely on self-reported data show lower non-completion rates in Norway because many adults do not consider themselves to be non-completers as they plan to return to higher education at some point in the future (European Commission, 2015).

However, while Norwegians are currently able to find a job relatively easily in Norway without a higher education qualification, this may be changing. As advanced skills are becoming increasingly important to competitiveness and economic prosperity, the lack of qualifications may severely impede Norwegians from obtaining good economic outcomes both in Norway and abroad.

And while non-completion may be the product of a strong labour market, it could also be a signal of quality issues in learning and teaching. Norway's students may not be getting the academic support they need to succeed and persevere in their programmes. In particular, students whose parents have acquired only upper secondary education or below have more than twice as high non-completion rates as their peers whose parents hold a higher education qualification.

Box 1.4. Policy recommendations: Ensuring students complete their study programmes

9. Student preparedness for higher education

a) Consider the adoption of optional aptitude tests for prospective higher education students to help applicants and first-year students assess whether they have the necessary skills to undertake and succeed in a given higher education programme.

b) Provide higher education institutions with greater flexibility and autonomy to set entry requirements at the bachelor's level to ensure that students are well prepared to succeed and complete their higher education programmes.

10. Support for completion

a) Implement the recommendations of the panel examining the use of study contracts in Norwegian higher education institutions.

b) Encourage higher education institutions to provide greater academic counselling, mentoring and peer support to help students complete their studies.

c) Ensure that student financial assistance is aligned with expenses, so that students from socially disadvantaged backgrounds or in regions with higher costs of living have the resources they need to complete higher education.

Co-ordinating across government to enhance labour market relevance and outcomes

Ensuring better co-ordination and use of labour market information

Rationale

As noted in Section 1.2.1, labour market information is an important tool to help guide student choice of study programme. This information can be used effectively by all actors within the higher education system to better align higher education to the labour market. In particular:

- The government can use labour market information to make decisions about resource allocation within the higher education system and use it to underpin strategies to address critical skills gaps.
- Academic staff can use labour market information to guide curriculum development and design, gain a better sense of how programmes contribute to the economy, and identify the skills that should be developed through their programmes in order to give graduates the best chance to succeed in the labour market.
- Higher education administrators can use labour market information to obtain a better view of the structure and needs of the labour market and to adjust the mix of programmes they offer.
- Employers can use labour market information to identify where they need to play a more active role in developing skills through partnerships with higher education institutions or through employer-provided training programmes in order to fill job vacancies, improve productivity and enhance firm profitability.
- Newcomers to Norway can use labour market information to understand the types of economic opportunities available to them and the skills needed to succeed in the labour market.

In Norway, these actors can draw on data from multiple sources. To be most effective, data about learning and teaching in higher education, and the labour market outcomes of graduates needs to be contextualised and co-ordinated to avoid confusion and facilitate informed decision making.

Key issues

The lack of co-ordination among the different agencies and bodies on the collection and dissemination of labour market relevant information in Norway is particularly pertinent. The Norwegian Strategy for Skills Policy 2017-2021 noted that the various data sources are not used, maintained, and disseminated jointly, and are not easily accessible and useful to policy makers, employers, individuals, and higher education institutions (Norwegian Ministry of Education and Research, 2017b).

Higher education institutions need to be encouraged to use labour market information to inform their decisions about which programmes to offer and develop. There is little evidence that higher education institutions in Norway use this type of information to shift programme provision, especially in regard to terminating programmes with poor labour market outcomes (Productivity Commission, 2015). However, much of the labour market data, including graduate outcomes and employer satisfaction, is not available at the institutional and study programme level in Norway.

Better and easily accessible data, particularly at the programme and institutional level, should also help RSAs achieve their key tasks, including the development of a strategy to improve the labour market relevance and outcomes of higher education programmes.

As noted in Section 1.2.1, the government has committed to developing a higher education web portal which will provide field of study-level indicators, using data from a number of different sources. This will go some way to addressing the fragmentation of information available to the higher education system (Norwegian Ministry of Education and Research, 2017a).

Box 1.5. Policy recommendations: Ensuring better co-ordination and use of labour market information

11. Collection and dissemination of labour market information for the higher education system

a) Establish a body to oversee and co-ordinate all relevant higher education and labour market data to ensure that information is robust, relevant, and easily accessible to all users.

b) Monitor the use of data on the quality of learning and teaching in higher education and the labour market by higher education institutions, the RSAs and career guidance centres through dialogue and other mechanisms, and evaluate its effectiveness in informing decisions about which programmes to develop and offer and supporting student transitions to the labour market.

12. Labour market data at the programme and institutional level

a) Encourage all higher education institutions to track and publish information about the labour market outcomes of their graduates, and integrate this information on the web portal to come so that it is easily accessible to all.

Ensuring better co-ordination across levels of government

Rationale

In Norway, policy making responsibility is shared among the three different levels of government and their associated agencies. This vertical governance structure can have significant advantages, but also requires significant co-ordination between policy makers to ensure that all levels of government are working effectively and efficiently towards complementary goals. Collaboration between governments will take on new importance in Norway as local governments are increasingly empowered to take greater responsibility for skills policy (Norwegian Ministry of Local Government and Modernisation, 2017).

Key Issues

The Ministry of Education and Research has a collaborative and well-established relationship with higher education institutions and social partners, which helps to advance policy making. However, the OECD National Skills Strategy identified a number of challenges relating to the need for greater co-operation across agencies and levels of government in Norway, including the lack of a whole-of-government approach, strong sectoral government ministries with conflicting goals that undermine policy coherence, and limited co-operation between the education system, public services, business and industry. The Skills Strategy also identified challenges associated with the different levels of government that hinder flexibility and development (OECD, 2014).

Devolving authority for school policy from the national government to regional and municipal governments has brought the responsibility for the provision of school education closer to its constituents, but it requires co-ordination between the levels of government to ensure consistent implementation, quality and equity across all regions and municipalities. However, issues around co-ordination and which level of government has responsibility for related issues may be contributing to poorer outcomes in school.

A major concern is the potential misalignment between the skills developed in upper secondary school and the skills needed to succeed in higher education. Past action by the national government to support the development of strong skills and completion of upper secondary education has not necessarily reflected local needs and considerations, and as a result has not achieved the intended outcomes.

The national government also has an important role to play in regional and local policy due to its responsibilities for higher education. Higher education makes a considerable direct economic contribution to regional and local economies. Higher education institutions employ people in the regions and are customers and suppliers of local goods and services. Their staff and student expenditure have a direct effect on income and employment in the cities and regions. They not only educate people in the area, but also contribute to the development of knowledge-intensive jobs, which enable graduates to find local employment and remain in their communities. Through research activities they create and apply knowledge, often with their local and regional communities. They engage in partnerships with local industries, communities and stakeholders.

Increasing engagement with higher education institutions by regional governments may cause, however, co-ordination issues with the national government, which has its own agenda and approach to higher education. The future roles of national and regional governments and higher education in the regions may change under ongoing reforms that aim to assign new powers and responsibilities to regional governments.

Box 1.6. Policy recommendations: Ensuring better co-ordination across levels of government

13. Strengthen co-operation across agencies and levels of government

a) Continue to support the Norwegian Strategy for Skills Policy and ensure it effectively addresses issues relating to higher education and the labour market.

b) Strengthen co-operation with the Ministry of Local Government and Modernisation, regional and local governments to better align higher education and the labour market at the regional and local levels.

c) Strengthen the link between regional career guidance offices and school career guidance counsellors to ensure the consistent provision of information and advice to prospective students.

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Chapter 2. The economy and labour market

This chapter examines the economic context in Norway and what it means for the labour market relevance of higher education. The main message of the chapter is that Norway's economy is one of the most skilled, prosperous, and inclusive in the world, but Norway cannot take its current success for granted. As explored in this chapter, Norway is susceptible to the same global forces as other OECD countries such as technological change, demographic shifts, increasing economic competition, and faces its own unique domestic challenges, including the cyclical nature of the resources sector and the need to develop a more diversified economy. This chapter concludes with a discussion about how higher education can develop the right mix of labour market relevant skills to ensure current and future economic success.

Political context

Norway is a constitutional monarchy. The reigning monarch is the head of state with mainly a representative and ceremonial role (Royal House of Norway, 2016). The Norwegian constitution empowers the monarch (currently King Harald V) to appoint the Council of State (the executive of the central government), however, in practice the government is formed by the political party or parties that have elected a majority, or strong plurality, of the members in the legislature (Storting) and thus can demonstrate the ability to form an effective and representative government. Members of the Storting are elected through a proportional party-list based electoral system to four-year terms. All Norwegians who have reached the age of 18 are entitled to vote in elections (Norwegian Ministry of Local Government and Modernisation, 2014).

The national government in Norway has jurisdiction over both higher education and labour market policy. In addition to the national government, there are two additional levels of government: regional authorities (until recently known as counties) and municipal governments. Each level of government plays a role in broader labour market policy and the skills development system. Regional governments are responsible for regional development and upper secondary education (Norwegian Ministry of Local Government and Modernisation, 2014) and municipal governments are responsible for local economic planning, primary and lower secondary education, nurseries and kindergartens. However, the national government is responsible for the development of curriculum for school-level education and has the overriding authority and supervision of both the municipal and regional administrations (Norwegian Ministry of Local Government and Modernisation, 2014).

The Nordic model

Underlying the Norwegian approach to government, economy, labour market, and skills is the Nordic model – a set of social and economic principles generally shared among Nordic countries (Sweden, Finland, Denmark, Iceland and Norway). The Nordic model places an emphasis on labour market institutions and policies that provide low employment security, but high unemployment protection coupled with high income-support benefits; active labour market policies and a high degree of centralised wage co-ordination; comprehensive social benefits and publicly provided social services including

health, welfare and education programmes financed by high taxes; and an openness to trade and competitive product markets (Nordic Council of Ministers, 2015)

The Nordic model has been credited as a key factor responsible for the high standard of living and social inclusion in Norway (OECD, 2015a).

Geographic context

Norway is situated in Northern Europe on the north-western part of the Scandinavian Peninsula and has a land mass of 323 787 square kilometres. It shares an eastern border with Sweden and a north-eastern border with Finland and the Russian Federation.

Norway's geographic location and physical characteristics have shaped its economy and labour market. Historically, Norway's abundant natural resources, mountainous landscape, dense forests, numerous rivers, and a long and indented coastline, have played a significant role in building the country's wealth through the development of key economic sectors – mining, agriculture, forestry, and fishing (Norwegian Ministry of Finance, 2016).

Today, geography and natural resources continue to play a large role in the Norwegian economy. Norway has used its numerous rivers and waterfalls to become the largest producer of hydroelectric energy in Europe and, meets 98% of its energy needs through domestic hydroelectric power (Norwegian Ministry of Petroleum and Energy, 2016). Norway's significant coastline (seventh longest in the world) and coastal waters contribute to it being a global leader in fish production, shipbuilding, and offshore oil and natural gas exploration (Norwegian Ministry of Finance, 2016). Norway's landmass also has significant mineral wealth, including deposits of metals, industrial minerals and energy minerals, such as iron, nickel, ilmenite, silver, copper, cobalt, lead, zinc, titanium, chromium, molybdenum, tungsten, and niobium (NGU/DMF, 2016).

Demographic context

As of 1 January 2018, Norway had an estimated 5 295 619 inhabitants (Statistics Norway, 2018a). Its population is relatively small in relation to other OECD and Nordic countries. However, population growth of 1.2% over the period 2012-2014 has exceeded the OECD average of 0.5% (OECD, 2016a).

The decline in mortality rate has been the driving force for Norway's population growth. Currently, the average life expectancy is 80.9 and 84.3 years for a Norwegian male and female respectively, which are among the highest in the world (Statistics Norway, 2018b). The increase in the average life span has allowed the Norwegian population to continue to grow despite a decreasing birth rate.

Immigration started playing a larger role in Norway's population growth in the 2000s, when many Eastern European immigrants were granted free movement rights in Norway through the Schengen Agreement, which eliminates passport and border controls between specific European countries (Statistics Norway, 2017a). Over the last decade, immigration has also grown from non-European countries, including Pakistan, Somalia, Iraq, Vietnam and the Philippines (Statistics Norway, 2017a). In 2017, immigrants accounted for 13.8% of the total Norwegian population, and second generation Norwegians (i.e. Norwegians born to immigrant parents) represented an additional 3% (Statistics Norway, 2017a).

The declining mortality rate in Norway, a post-Second World War Two baby boom, and a low birth rate means that the Norwegian population structure is shifting and ageing, albeit not to the same extent as other OECD and European countries (OECD, 2016a). At one

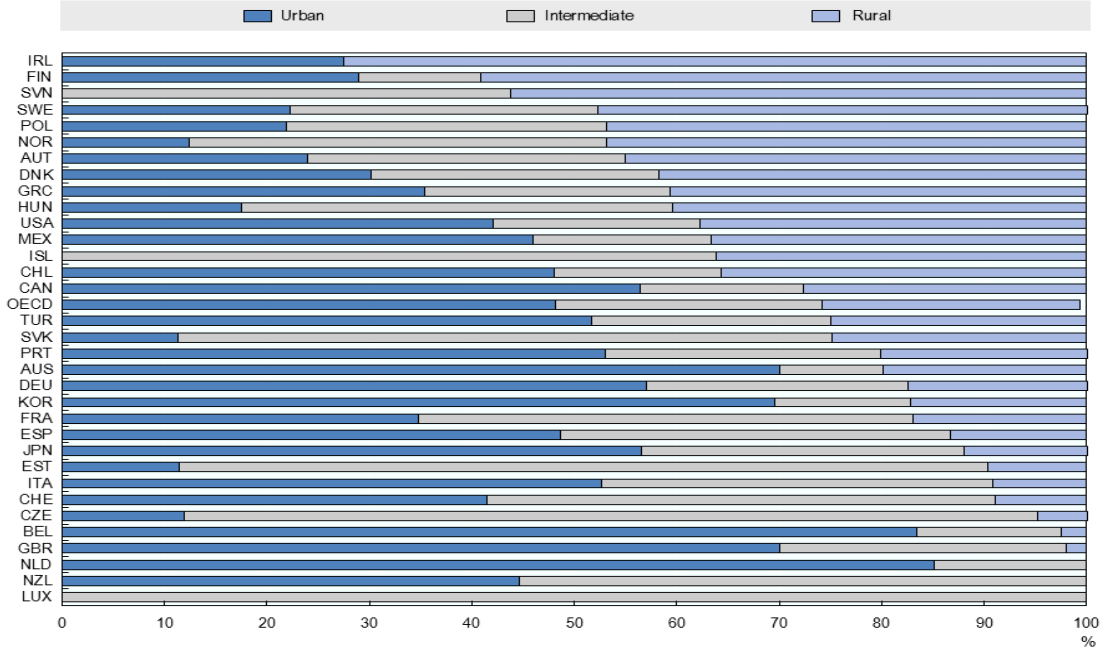
end of the age spectrum, the percentage of the population under the age of 15 is shrinking as a result of nearly 40 years of the birth rate being below the replacement rate of 2.1 children per woman. In 2014, the percentage of the population under the age of 15 fell to 18.1%, an all-time low (OECD, 2017a). At the other end of the age spectrum, the percentage of the population over the age of 65 is projected to increase from 15% in 2015 to 23% by 2050; and the proportion of the population aged 80 and above is expected to almost double from 5% to 9% (OECD, 2015b).

Norway's population is becoming more urban. A third of the population lives in the five largest municipalities (Oslo, Bergen, Stavanger/Sandnes, Trondheim, and Drammen) (Statistics Norway, 2017b). Oslo alone represents a fifth of Norway's population; over the last decade, an additional 20% have settled in the city, compared to an increase of 12% for the country as a whole (Statistics Norway, 2017c; OECD, 2016b). Oslo's growth in particular has been fuelled by immigration: first generation immigrants and children of immigrants make up one-third of the capital's entire population (Statistics Norway, 2017b).

Despite population growth in the five major cities, Norway is among the countries in the world with the lowest population density (16 persons per square kilometre) and a significant rural population that is only surpassed by Ireland, Finland and Slovenia among OECD countries (Figure 2.1).

Figure 2.1. Distribution of population, by type of region

2014



Source: OECD (2016b), *OECD Regions at a Glance 2016*, http://dx.doi.org/10.1787/reg_glance-2016-en.

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Population density is especially low in the northern part of Norway. Norway's three most northern regions (Tromso, Finnmark and Nordland) are home to less than 10% of the country's population, but 35% of Norway's land area (OECD, 2017b). These northern regions are also the traditional home of the Sami population, which counts approximately 55 500 people. The Norwegian constitution guarantees their ability to maintain their

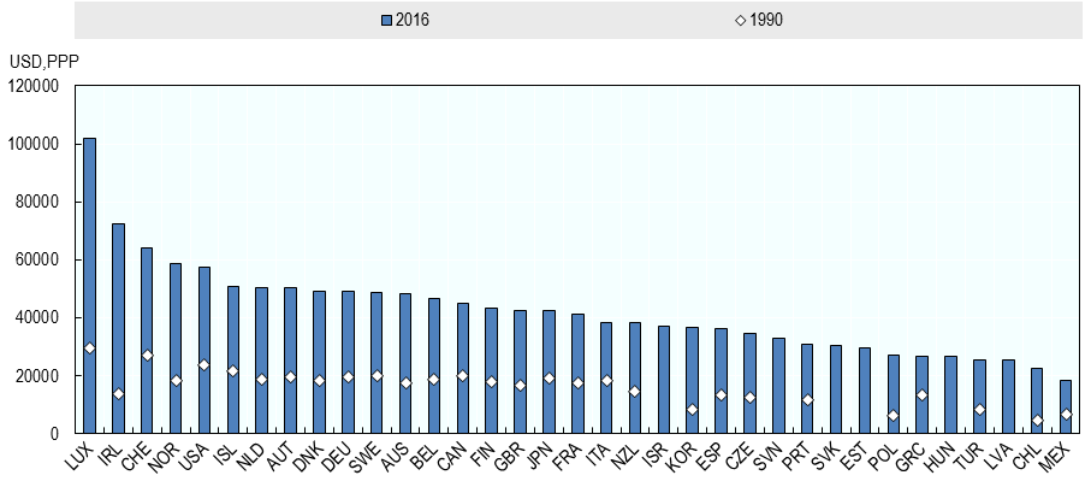
traditional way of life and the Sami Parliament ensures that their views are taken into account by all levels of government (Norwegian Ministry of Local Government and Modernisation, 2008).

Economic context

Norway is one of the wealthiest countries in the world. In 2016, its gross domestic product (GDP) per capita amounted to approximately 60 000 US dollars, and it has more than tripled since 1990 (Figure 2.2). Norway's society has an egalitarian approach to income distribution and it has prioritised reducing gender discrimination, which has resulted in levels of inequality that remain well below the OECD average (OECD, 2018).

Figure 2.2. Gross domestic product per capita

In US dollars, PPP, 1990-2016



Source: OECD National Accounts Statistics Database.

StatLink http://dx.doi.org/10.1787/888933726038

High productivity has been key to Norway's economic success, and is especially important in the Norwegian context of high-wage employment; however, productivity growth has weakened since 2005 (Productivity Commission, 2015). The recent decline in productivity growth is attributed to prolonged weak investment growth linked to weak confidence and demand, and possible weakening of productivity gains from information technology (OECD, 2018). Productivity growth is especially low among Norway's largest companies (OECD, 2017c).

As a relatively small resource-rich economy, trade plays an important role in Norway's wealth. Imports and exports as a share of GDP have grown steadily over the last 20 years to reach 33% and 34%, respectively, in 2016. Key exports are related to Norway's natural resources, including petroleum, natural gas and fish, and its main export markets are countries within Europe (Table 2.1), as Norway's membership in the European Economic Area allows for privileged access to markets within the European Union.

Table 2.1. Norway's export performance

2016

Top 5 Export Products	Value of Exports (share of exports)		Top 5 Export Markets	Value of Exports (share of exports)
Petroleum oils and oils obtained from bituminous	25.5%		United Kingdom	20.7%
Natural gas in gaseous state	20.4%		Germany	14.3%
Fresh or chilled seafood	6.5%		Netherlands	10.6%
Petroleum oils, etc., (excl. crud)	3.6%		France	6.8%
Aluminium unwrought, alloyed	2.6%		Sweden	6.4%

Source: World Integrated Trade Solution (n.d.), "Norway trade at a glance: Most recent values", https://wits.worldbank.org/CountrySnapshot/en/NOR.

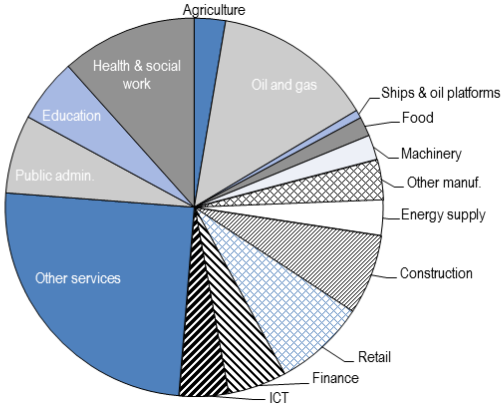
Different regions of the country play a varying role in the overall contribution to GDP, based on the structure of their economies. The Oslo region, which is the most populated region of the country, and a key government, services, and business hub, contributes disproportionately more to GDP. Since 2000, the city of Oslo alone has accounted for more than 86% of the country's GDP growth. The Rogaland and Hordaland region on the southwestern coast of Norway is home to a significant portion of the oil and gas sector and the maritime industry, and also makes a larger contribution to GDP (OECD, 2016b).

The oil and gas sector accounts for half of Norway's exports and over one-fifth of Norway's GDP, including on and offshore activity (Figure 2.3). This sector has been the propeller of GDP growth since offshore oil production began in earnest in the early 1970s (OECD/IEA, 2017a).

Norwegians share the wealth of the oil and gas sector through the taxes and fees collected on production and exploration rights, and through dividends from their partial ownership of Statoil, the state oil company. These dividends are channelled into the Government Pension Fund Global, which at the beginning of 2017 had approximately USD 900 billion in assets, making it the largest sovereign wealth fund in the world (OECD/IEA, 2017a). The government invests this money and is able to draw on up to 3% of the fund's assets in any given year (OECD, 2017d).

Figure 2.3. Contribution to Norway's gross domestic product, by industry

2016



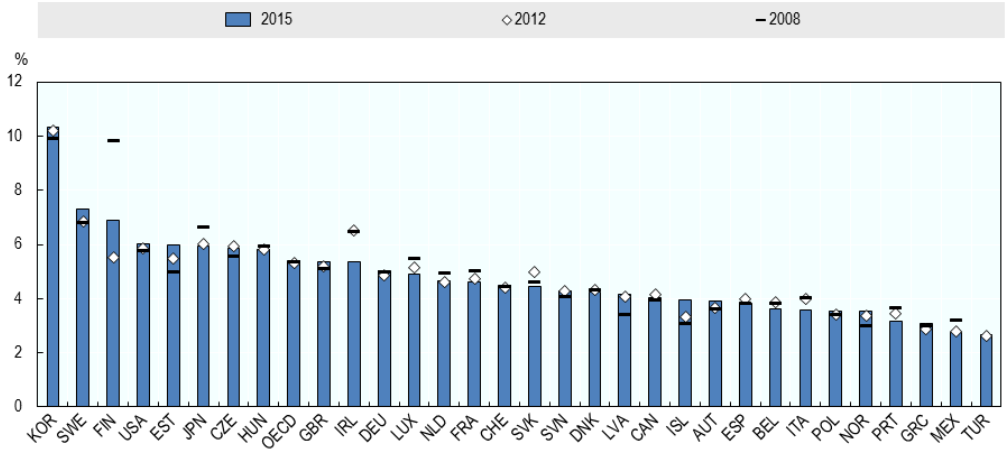
Source: Statistics Norway.

StatLink http://dx.doi.org/10.1787/888933726057

As with other OECD countries, the business services sector contributes most to Norway's GDP. The industries that make the highest contribution are the real estate, retail and transport services. The information and communication technology (ICT) sector, which plays a key role in innovation and productivity in OECD countries, makes a smaller contribution to GDP in Norway than in other OECD countries, especially other Nordic countries (Figure 2.4). This may be the case because unlike Sweden and Finland, Norway does not have a large flagship technology company to drive tech exports and support a domestic technology and innovation ecosystem.

Figure 2.4. Contribution of the ICT sector to gross domestic product

In current prices, 2008-2015



Note: The ICT sector is defined here as the sum of industries ISIC rev.4: 26 Computer, electronic and optical products; 582 Software publishing; 61 Telecommunications; and 62-63 IT and other information services. Data for Germany, Latvia, Poland, Portugal, Spain and Switzerland are for 2014. Data for Canada and Korea are for 2013. The OECD aggregate is calculated as the sum of value added in current US dollars over all countries for which data were available.
Source: OECD (2017e), *Digital Economy Outlook 2017*, http://dx.doi.org/10.1787/888933584716.

StatLink http://dx.doi.org/10.1787/888933726076

Norway's public services sector plays a major role in the Norwegian economy. Public administration, education, and the health and social services sectors (which are overwhelmingly public) account for one-fifth of GDP. Health and education in particular have been growing significantly in recent years (OECD, 2018).

In addition to core public administration, the national government has an ownership stake in 70 enterprises in the business sector. These enterprises include: advanced research institutions; technology firms; energy companies; land use management, real estate firms, and agricultural firms; engineering and infrastructure companies (including those responsible for air traffic control, the national highway construction, and pipelines); banking; gambling; the postal service; and arts and culture (Norwegian Ministry of Trade, Industry and Fisheries 2016).

In contrast to the public sector, the manufacturing sector in Norway is relatively small compared to most OECD countries, and like most OECD countries has been in decline over recent decades (OECD, 2018). However, despite the high-cost structure of manufacturing in Norway, the country continues to play a leading role in the global shipbuilding industry. After recent years of reduced output, production in the shipbuilding industry has stabilised as the Norwegian industry focuses on niche and specialised products, such as offshore service vessels, fishing vessels and oil platforms (OECD,

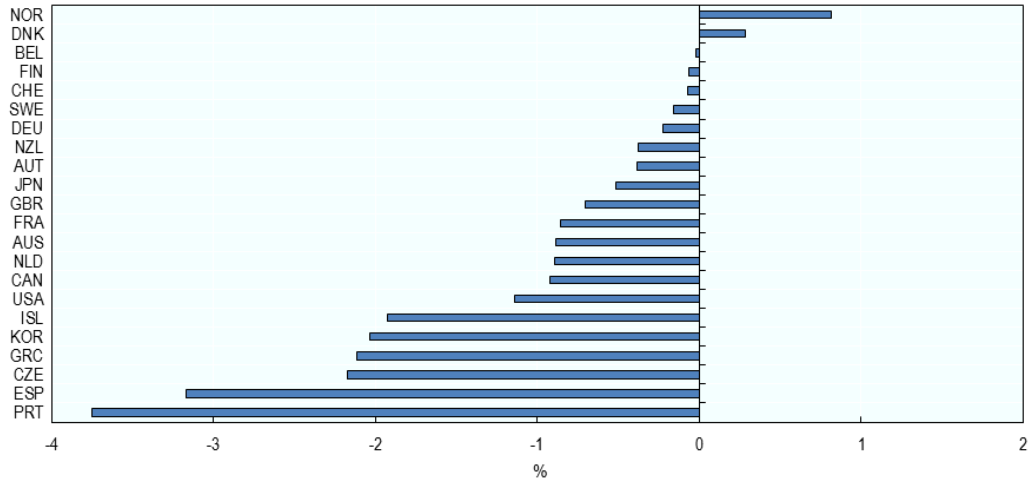
2017f). Resource exploration, fishing, aquaculture and tourism play an important role in the economies of Norway's rural and remote regions, especially northern Norway (OECD, 2017b).

National economy: Recent trends

As with other OECD countries, Norway was affected by the financial crisis of 2008, but its economy contracted less than half the OECD average and the duration of the recession was short (OECD, 2010). A healthy and well-regulated banking sector, smart resources management, steep interest rate cuts and a strong fiscal position that allowed for large budgetary stimulus played a role in mitigating the worst effects of the crisis (OECD, 2010). In fact, Norway's budgetary flexibility, driven in part by oil revenues, allowed Norway to be one of two OECD countries to have increased government spending as a proportion of GDP since the end of the financial crisis (Figure 2.5).

Figure 2.5. Change in government investment as a share of gross domestic product

2008-2016



Source: OECD (2017d), *Economic Outlook 2017*, http://dx.doi.org/10.1787/eco_outlook-v2017-2-en.

StatLink http://dx.doi.org/10.1787/888933726095

Despite significant government investment in the economy, GDP growth since the end of the economic crisis has been more muted, averaging 1.4% growth compared to 2.1% across OECD countries (OECD, 2017g). The major factor behind the slow growth is the steep decline in oil prices in 2014, when a barrel of crude oil lost half of its value in a five-month period (OECD/IEA, 2017b). The drop in price and the subsequent decline in sector investment led to GDP growth falling from over 2% in 2014 to just over 1% in 2015, and just under 1% in 2016 (Bank of Norway, 2017). Weaker productivity growth since 2005 is also hindering growth.

Likely scenarios for the future economy

In the short term, the OECD and the Bank of Norway project that Norway's GDP growth will increase and reach just over 2% in 2018 (OECD, 2017d). Oil-related investment is expected to become positive and be accompanied by growing strength in the mainland economy (OECD, 2017d).

Over the longer term, the Norwegian economy will be shaped by changing international trade relationships, technology, climate change commitments and demographics. Each of these factors poses economic opportunities and challenges for Norway, and holds the possibility of shifting the composition of Norway's economy.

Norway's future economy is likely to become more dependent on international trade. This is not simply the result of a broader trend towards a more global marketplace, but because Norway is proactively seeking to expand its trade relationships with other countries and economic unions. For example, in 2017 Norway resumed trade talks with the People's Republic of China (Norwegian Ministry of Foreign Affairs, 2016). In addition, through its membership in the European Free Trade Association, Norway is party to trade negotiations with 12 economies, including key emerging economies such as India, Indonesia, the Russian Federation and South America's Mercosur bloc: Brazil, Argentina, Paraguay and Uruguay (European Free Trade Association, 2017).

These international trade relations could help improve productivity in Norwegian firms and enable them to benefit from knowledge exchange, economies of scale and access to larger markets. Furthermore, new trade opportunities, particularly in more technologically advanced industries, could allow Norway to increase participation and move up global value chains (OECD, 2017h).

However, in the short term, Norway may also face trade uncertainty. Norway's largest export market is the United Kingdom. The trade relationship is especially strong in the energy sector where Norway provides the United Kingdom with 70% of its oil imports (Royal Norwegian Embassy in London, n.d.). Currently, Norway's trade relationship with the United Kingdom is governed by the European Economic Area agreement, which is open to members of the European Free Trade Association and the European Union. However, the United Kingdom has chosen to invoke article 50 of the Treaty of Lisbon, which is the mechanism for leaving the European Union. As this process continues to unfold, there is uncertainty about the future framework governing the trade relationship between the two countries.

The oil and gas sector, Norway's largest export sector and major contributor to the country's economy, is cyclical and can be incredibly volatile due to factors beyond Norway's control. Over the short to medium-term, the sector is expected to continue to play a significant role in the economy as it will likely benefit from the steadily increasing demand from emerging economies, especially India and China (OECD/IEA, 2017b). However, production in Norway is down from its 2001 peak, and oil discoveries, an indicator of future production capacity, fell to 2.4 billion barrels in 2016, compared to an average of 9 billion barrels annually during the past 15 years (OECD/IEA, 2017a).

In light of these developments, consecutive governments in Norway have focused on creating the broad conditions that would support economic growth and the diversification of the economy. Recent initiatives include: investing in skills, research and development; a flexible labour market; and competitive tax structures, which are driving the transformation of Norway's economy to follow a more sustainable growth model (Norwegian Ministry of Finance, 2017).

In addition to improving the general framework conditions, there are certain sectors of the economy that could play a larger role in the future economy of Norway (Norwegian Ministry of Trade, Industry and Fisheries, 2017). These sectors share common traits: they are areas where Norway already has expertise, they are knowledge-intensive, and they are sectors of the economy that could be expanded while respecting Norway's commitment to become independent of oil and gas by 2030 (Norwegian Ministry of Climate and Environment, 2015).

Norway has identified the "bio-economy" as a key sector for the future, with the aim of becoming a world leader in reimagining sustainable and more efficient forms of agriculture, forestry, aquaculture, energy, transport, waste management, health and chemicals (Norwegian Ministry of Trade, Industry and Fisheries, 2016). For instance, Norway could apply key skills and technology from the Norwegian oil and gas sector to the ample biological resources it has at sea and on land to develop bio-based health and aquaculture sectors (Norwegian Ministry of Trade, Industry and Fisheries, 2016). The Norwegian government is working with the Norwegian Research Council, Innovation Norway and the regional development agency to develop an action plan based on the recommendations of the bio-economy strategy (Norwegian Ministry of Trade, Industry and Fisheries, 2016).

The ICT sector is another area of possible growth for the economy. Currently, this sector plays a relatively small role in the economy, and many ICT firms are tied to the development of technology for the oil and gas sector. However, Norway is the OECD leader in access and quality of digital infrastructure, which suggests that the country would be well positioned to expand the contribution of this sector to the economy (OECD, 2017e).

However, it would be more transformative for Norway to expand the ICT sector and incorporate digital technology throughout the economy. The use of digital technology could improve productivity in the business services and manufacturing sectors, especially in Norway's large public sector (Productivity Commission, 2015). The white paper on the digital agenda for Norway outlines numerous recommendations that the public sector could adopt to facilitate the use of transformative digital technology, including participation in the European Union's Digital Single Market. The Digital Single Market aims to create better access for consumers and businesses to digital goods and services across Europe and conditions for digital innovation to flourish; and to maximise the potential of the digital economy (Norwegian Ministry of Local Government and Modernisation, 2015).

Finally, an ageing population will also shape the economy of Norway. First and foremost it can have significant implications for the public sector, which provides many key services to retirees. Population ageing could lead to a 60% increase in spending on pensions and a 40% increase on healthcare by 2060 (Norwegian Ministry of Finance, 2016). An ageing population would also change the market demand for certain goods and services that are more in line with their tastes and needs.

National and regional labour markets

Norway's robust economy is coupled with a well-functioning labour market. Norway's workers enjoy labour market outcomes, such as labour force participation, employment and unemployment rates, which are generally superior to the OECD average. Variation over time, whether positive or negative, has been minimal (Table 2.2).

Employment and labour force participation

Norway's employment rate of 74% is particularly impressive when considered alongside the labour market participation rate – one of the highest among OECD countries. Norway's unemployment rate is also below the OECD average and lower than that of other Nordic countries. In addition, when unemployment occurs, it lasts generally for a shorter period than in most other OECD countries. In 2016, Norway's long-term unemployment rate was more than half the average rate across OECD countries (OECD, 2017a).

Table 2.2. Key employment indicators in Norway and the OECD

2006-2016

Indicator	Norway	OECD	Trend in Norway (2006 to 2016)
Labour force participation rate (15-64)	78.2%	71.7%	Stable
Employment rate (15-64)	74%	67.4%	Stable
Self-employment rate (% of employment)	7%	16.1% (European Union)	Slight decrease
Temporary work (% of employment)	8.7%	11.2%	Decrease
Share of involuntary part-timer workers as a share of employment	2.3%	5.2%	Slight decrease
Unemployment rate (% of the labour force)	4.4%	6%	Slight increase
Long-term unemployed (% of unemployed)	12.5%	30.5%	Slight decrease
Youth Unemployment (15-24-year-olds)	11.1%	13%	Increase
Youth not in education, employment or training (15-29-year-olds)	9.4%	13.9	Increase

Source: OECD Employment and Labour Market Statistics.

While in many OECD countries, women, immigrants and youth have traditionally weaker employment outcomes, in Norway, these groups do relatively well. Female participation in the labour market is high, and the gender gap is one of the lowest among OECD countries (OECD, 2017i). High rates of higher education completion among women, egalitarian social values and supportive childcare policies all play a role in high labour market participation among Norwegian women (OECD, 2018).

The relatively high labour force participation of women and older workers in Norway – two groups with traditionally shorter working hours than the rest of the labour force – are likely suppressing the average number of hours worked in the economy (OECD, 2018). The average Norwegian worker spends fewer hours per year at the workplace than their counterparts in the majority of OECD countries, and approximately 350 fewer hours than the OECD average (OECD, 2017j).

Over the last decade, Norway's youth cohort has also fared relatively well, but their outcomes are worsening. During the height of the economic crisis, youth did not suffer from the same type of labour market disengagement and unemployment that has plagued other OECD countries. However, in 2016, 9.4% of 15-29 year-olds were not participating in education, employment or training, which represents a 2% increase over the last 10 years (OECD, 2017k). Youth unemployment has also been increasing to reach levels close to the OECD average.

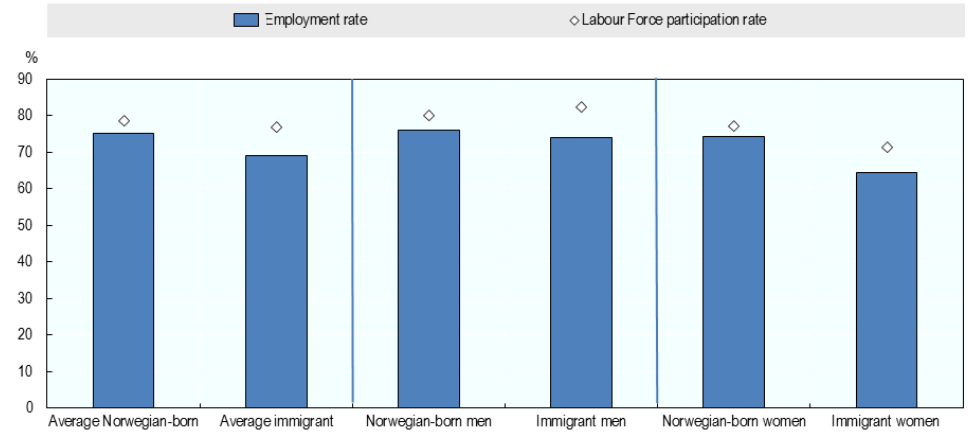
Immigrants, particularly male, are also well integrated into Norway's labour market. The labour force participation rate among male immigrants in Norway is higher than that of native-born men (Figure 2.6). However, the overall labour force participation rate and employment rate of immigrants are below the average for the native-born population, and the gap is especially large between native-born and foreign-born women. There are also major disparities in employment between immigrants from different regions of the world. More than two-thirds of immigrants born in the European Union are in employment, but this falls to less than 50% of immigrants from Africa (Statistics Norway, 2017d).

Norway's economy has enjoyed strong labour market outcomes across all regions, but some regional differences have emerged due to the varying industrial structures of the local economies. The Oslo and Akershus regions enjoy the highest employment outcomes, which are strongly connected to the large services sector and national government employment in the region. The Western Norway and Agder and Rogaland regions have also traditionally had some of the highest employment rates due to local

maritime (shipbuilding and aquaculture) and oil and gas sectors, but the recent drop in the oil price has worsened outcomes in these regions (Figure 2.7).

Figure 2.6. Labour force participation and employment in Norway, by gender and immigrant status

2016

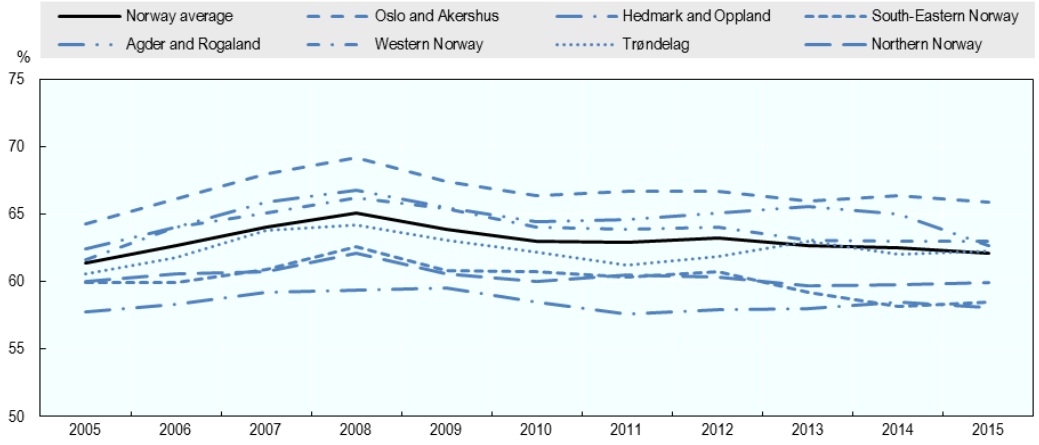


Source: OECD Employment and Labour Market Statistics.

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Figure 2.7. Employment rates in Norway, by region

2015



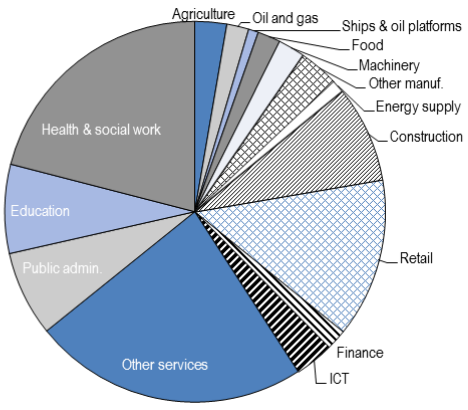
Source: OECD Regional Statistics Database.

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Despite the drop in oil prices in 2014, the oil and gas sector continues to play a significant role in Norway's labour market. The sector, including the industry itself and related business services, provides employment to 9% of Norway's workers (Figure 2.8). However, employment in the sector remains volatile. Between 2000 and 2013, employment increased by 132%, but it has since fallen by 45% in conjunction with the steep decline in the price of oil (Norwegian Ministry of Trade, Industry and Fisheries, 2017).

Figure 2.8. Employment in Norway, by industry

2016



Source: Statistics Norway.

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Other traditional sectors of Norway's economy, such as farming and fishing, account for only 2% of overall employment (OECD, 2018).

As in most OECD countries, the business services and goods-producing sectors of the economy are responsible for the majority of jobs (6 out of 10). However, employment rates in the manufacturing sector and the ICT sector, which is considered a propeller for innovation, are employing much smaller shares of overall employment in Norway than the OECD average (OECD, 2017j).

In contrast to the manufacturing and ICT sector, Norway has the largest share of employment in the public sector (almost one-third) among all OECD countries (Figure 2.9). The public sector is made up of the national, regional and municipal governments, broader public services, including health and education, and enterprises that are fully or partially owned by the government. Since the 1990s, the number of people employed in the public sector has tripled (Statistics Norway, 2017a). Employment in local government and the health sectors is particularly large (Statistics Norway, 2017a), but a significant number of people is also employed in Norway's various state-owned enterprises (OECD, 2018), which include some of Norway's largest employers such as Statoil ASA (oil and gas), Telenor (telecoms), Norsk Hydro (energy), Yara International, ASA (chemical) and DNB Bank (financial services) (Norwegian Ministry of Trade, Industry and Fisheries, 2016).

Very few Norwegians are self-employed, including those who are own-account workers (such as independent contractors and consultants) or employers (business owners) (Figure 2.10). In Norway, self-employed entrepreneurs perceive good economic prospects for themselves. However, the majority of the general population feel they do not have the skills or risk tolerance to start their own business, and the percentage of the population that intends to start a small business over the next three years is relatively small (Alsos et al., 2015).

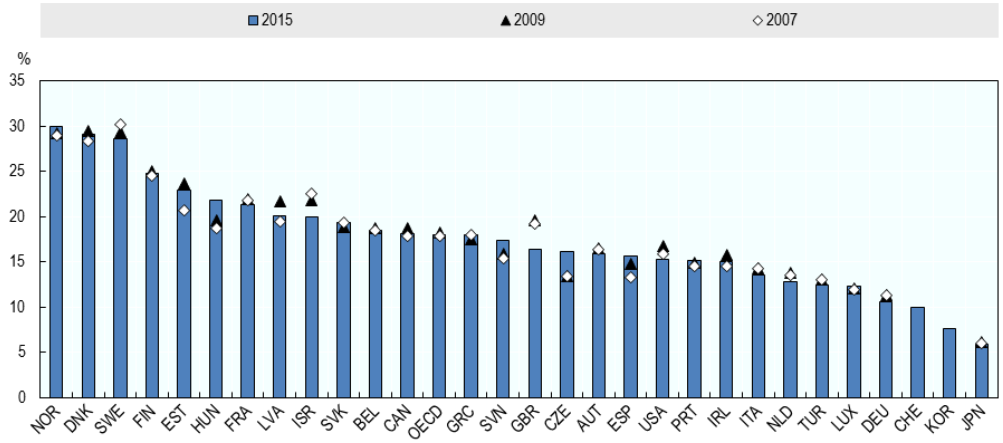
Earnings

Compared to other OECD countries, Norway's workers are likely to earn more and receive relatively even wages for the same work (Table 2.3). In 2016, the average earnings for a full-time worker in Norway amounted to USD 53 643, placing Norway

among the OECD countries with the highest average earnings (Figure 2.11). Not only are earnings generally high, but they are also relatively uniformly distributed across industry for workers in similar occupations, which contributes to Norway's high income equality. The small earnings differences between men and women in Norway, at only 7% in favour of men, are another factor driving income equality.

Figure 2.9. Employment in general government as a percentage of total employment

2007-2015

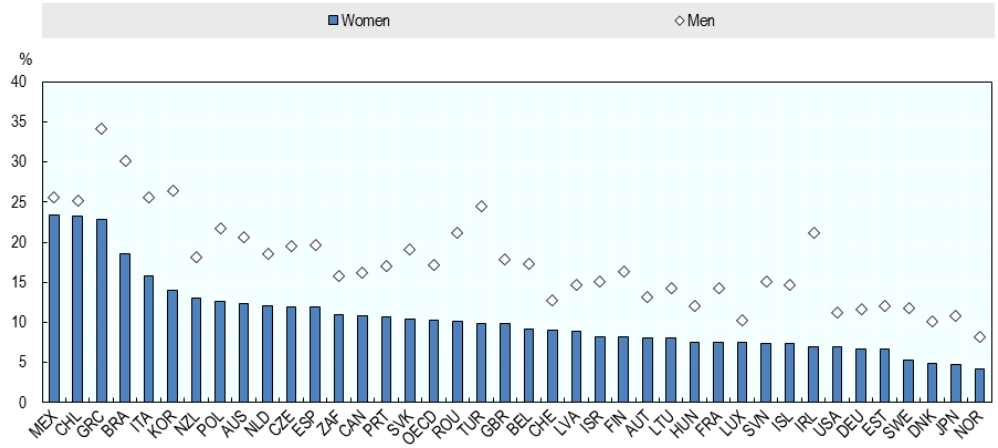


Note: General government employment covers employment in all levels of government (central, state, local and social security funds) and includes core ministries, agencies, departments and non-profit institutions that are controlled by public authorities.
Source: OECD (2017l), *Government at a Glance*, http://dx.doi.org/10.1787/gov_glance-2017-en.

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Figure 2.10. Share of 15-64 year-old self-employed in total employment

2016



Note: Data refers to unincorporated and incorporated self-employed. Data for the USA refers to 16-64 year-olds.
Source: OECD (2017m), *Entrepreneurship at a Glance*, http://dx.doi.org/10.1787/entrepreneur_aag-2017-en.

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Table 2.3. Key earnings indicators in Norway and the OECD

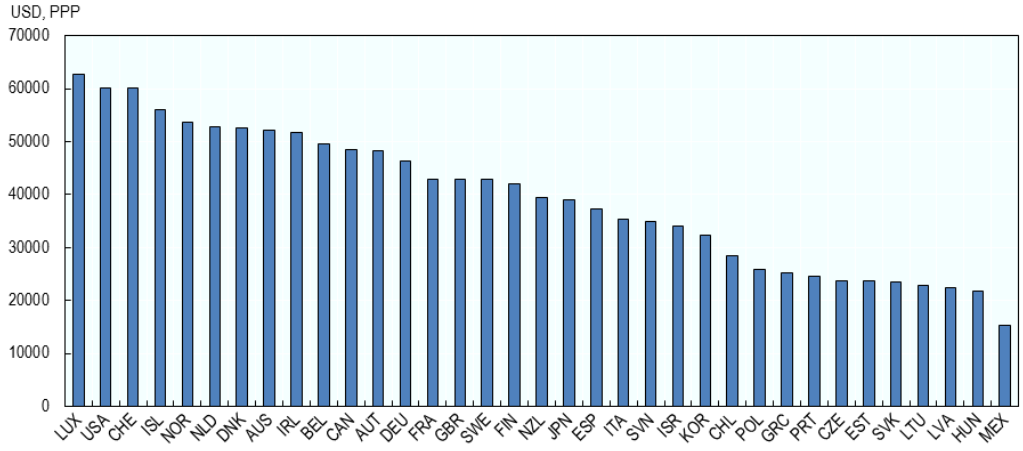
2006-2016

Indicator	Norway	OECD	Trend in Norway (2006 to 2016)
Average annual earnings (USD)	53 643	N/A	Increase
Earnings gap as between men and women	7.1%	19.1% EU average	Decrease
Gini coefficient	0.252	0.318	Stable
Relative income poverty	8.1%	11.5%	Stable

Note: Relative income poverty refers to population earning 50% of the national median earnings.
Source: OECD Employment and Labour Market Statistics.

Figure 2.11. Average annual earnings

In US PPP dollars, 2016



Source: OECD Employment and Labour Market Statistics.

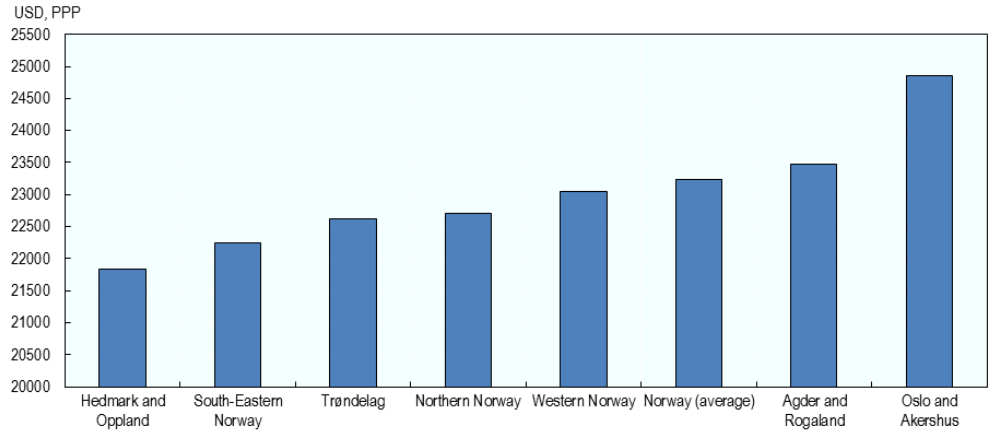
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Despite the compressed wage distribution in Norway, wage differences exist between occupations and sectors and regions of the economy. Workers in high-skilled occupations, such as managers, technicians and professionals, earn more than labourers and other low-skilled workers primarily in the retail, agricultural, fishery and forestry sector (Statistics Norway, 2017e). Jobs in the oil and gas sector also provide higher wages – almost two-thirds above the Norwegian average, resulting in higher levels of disposable household income in the Agder and Rogaland region. In addition, the concentration of central government and business services, which provide wages at or significantly above the Norwegian average, contributes to higher levels of disposable income in the Oslo and Akershus regions (Figure 2.12).

Despite high levels of earnings and relatively even income distribution, poverty does exist in Norway, with some variations across regions and population groups (Figure 2.13). On average, eight percent of Norwegians, which is a lower rate than the OECD average, are considered to live in relative poverty, meaning that they earn less than 50% of the median income (OECD, 2015c). Among the two regions with the highest disposable income, Agder and Rogaland have the lowest poverty rate in the country, and Oslo and Akershus the highest.

Figure 2.12. Disposable household income in Norway, by region

US dollars per head, constant PPP 2010 prices, 2013

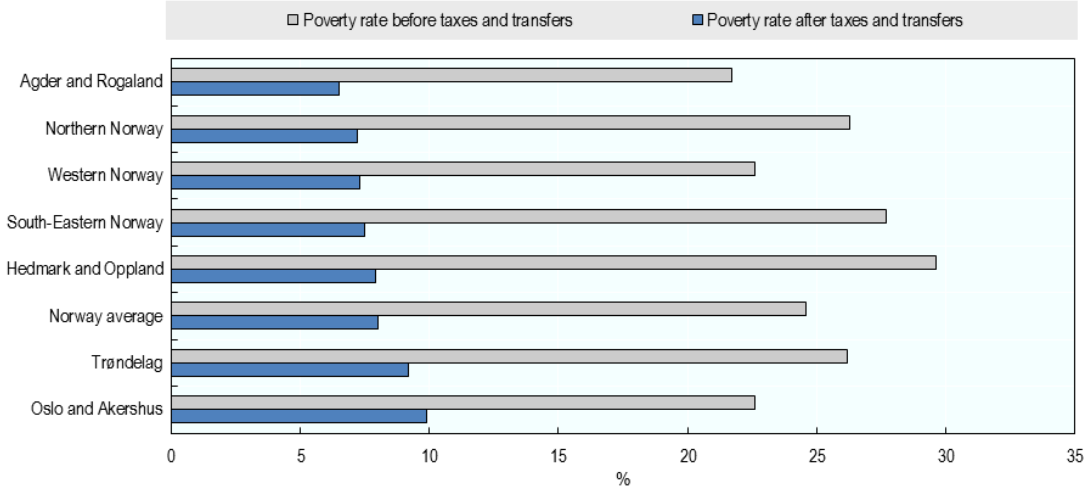


Source: OECD Income Distribution Database.

StatLink http://dx.doi.org/10.1787/888933726228

Figure 2.13. Poverty rates before and after taxes and transfers in Norway, by region

2014



Source: OECD Regional Statistics Database.

StatLink http://dx.doi.org/10.1787/888933726247

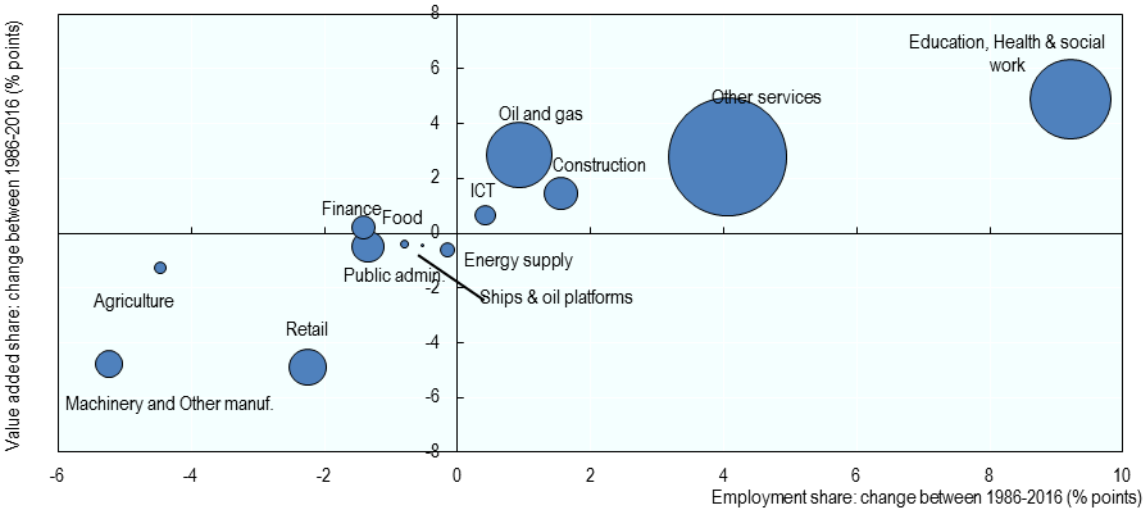
Poverty, particularly in Oslo, can be attributed to the elevated youth and immigrant populations in the region. The elevated youth poverty rate can be linked to the share of youth not in education, employment or training, but also to the fact that Norway's youth leave their parent's home at an early age, which means that they are more likely to be economically independent of their parents as they transition to the labour market (OECD, 2016c). Due to Norway's high wage structure there are very few individuals who are employed and in poverty; however, a significant proportion of the working poor in Norway are immigrants. Only 3% of native-born Norwegians are employed and earning below the poverty line, compared to 22% of those who are immigrant-born (Gasparini and Tornarolli, 2015).

Future labour markets

Over the last three decades, the Norwegian labour market has depended largely on the oil and gas, public services and broader services sectors (Figure 2.14), and while some of these trends are expected to persist, others may discontinue. In particular, employment in the public sector is projected to grow from its current share of 30% to 37% by 2030 (Dapi et al., 2016), led by the health care sector due to population ageing and increasing expectations regarding the quality and scope of care in Norway (OECD, 2017n). However, employment growth in the core public sector could be more muted as government signals initiatives to further digitalise government to be more efficient in dealing with the general public and more efficient and effective in its own internal processes, which may have implications for staffing (OECD, 2017o). Norway's oil and gas sector is also expected to require fewer workers in the long run, as the country transitions towards a greener economy that is less dependent on fossil fuels (Dapi et al., 2016). Manufacturing is projected to keep its rather limited role in the future labour market.

Figure 2.14. Shifts in the Norwegian labour market

1986-2016



Note: The size of the circles represents the value added in each sector.
Source: OECD (2018), *Economic Survey of Norway*, http://dx.doi.org/10.1787/eco_surveys-nor-2018-en.

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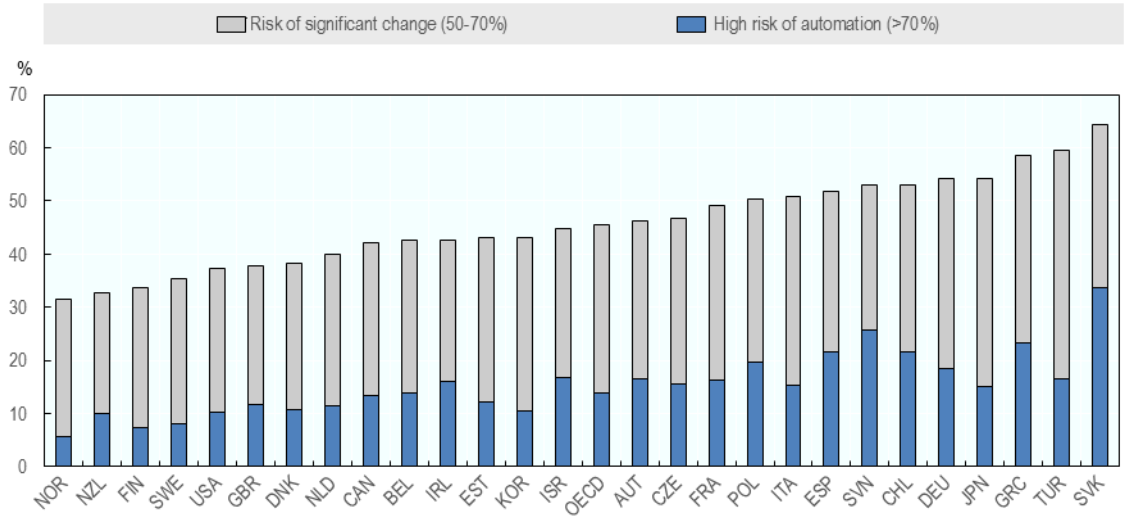
Technological change will play a role in the continuing decline in the manufacturing sector, and will likely contribute to a broader decline in routine jobs across all sectors of the economy. Around 6% of jobs in Norway could be at risk of complete automation, and an additional 26% would experience significant change in how tasks within the job are performed (Figure 2.15).

In addition to job destruction, technology can also foster new labour market opportunities, not just for ICT specialists. Norway has acknowledged that it will not always be at the forefront of developing new technology, but it can aim to be a leader in adopting technology broadly throughout the labour market (Norwegian Ministry of Local Government and Modernisation, 2015). This widespread use of technology and digitisation can lead to economic opportunities in all sectors and allow Norwegians to take full advantage of the opportunities available through the "sharing" economy, which

could play a significant role in boosting competition, innovation and consumer choice in Norway, and in turn in Norway's future labour market (Norwegian Ministry of Finance, 2017).

Figure 2.15. Jobs at risk of automation and significant change in OECD countries

2012 or 2015



Note: Jobs are at high risk of automation if the likelihood of their job being automated is more than 70%. Jobs at risk of significant change are those with the likelihood of their job being automated, estimated at between 50 and 70%. Data for Belgium refers to Flanders and data for the United Kingdom refers to England and Northern Ireland. Data refer to 2015 for Chile, Greece, Israel, New Zealand, Slovenia and Turkey.
Source: Nedelkoska, L. and G. Quintini (2018), "Automation, skills use and training", *OECD Social, Employment and Migration Working Papers*, No. 202, http://dx.doi.org/10.1787/2e2f4eea-en.

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Implications for knowledge and skills needs

Norway's economy and its skills needs are changing. To develop the innovative and high-skill knowledge-based economy envisioned in Norway's industrial strategy (Norwegian Ministry of Trade, Industry and Fisheries, 2017) and meet the labour market challenges posed by the international trends of globalisation and technological change, Norway needs to raise and continuously develop the skills of its population. How Norway adapts to these trends, and how it steers change domestically in the context of an ageing population, trade relations and diversification, will determine its future prosperity.

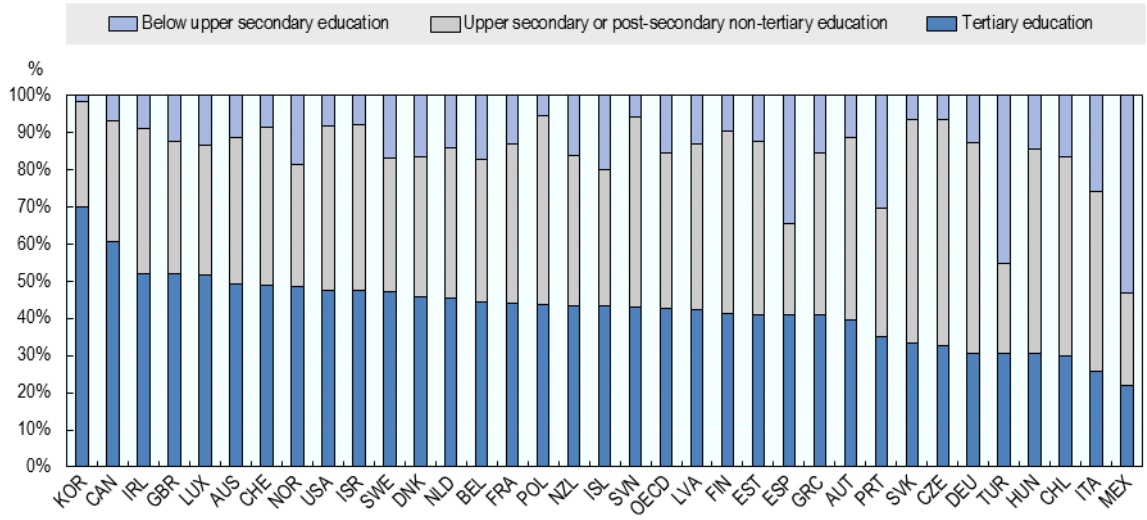
The country is in a strong economic position to make significant investments in skills development and labour market programmes. Moreover, it is already on the path of digitalising its economy, as demonstrated by its top ranking in the European Union's Digital Economy and Society Index (European Commission, 2017). Finally, its population has, on average, strong transversal skills, measured as literacy, numeracy, and problem solving in a technology-rich environment through the Survey of Adult Skills (OECD, 2013). These skills are increasingly important in the workplace and are pre-requisites for developing more advanced skills. While Norwegian youth, aged 16 to 24 years-old, are among the top performers in problem solving, they are below average in literacy, and only average in numeracy skills (OECD, 2013).

Norway is a leader in the pursuit of advanced professional and technical skills. Among the prime working-age population, 43% have obtained a higher education qualification,

which is six percentage points higher than the OECD average (OECD, 2017k). Among young adults, the attainment rate rises to 50% (Figure 2.16).

Figure 2.16. Educational attainment among 25-34 year-olds

2016



Source: OECD (2017k), *Education at a Glance*, http://dx.doi.org/10.1787/eag-2017-en.

StatLink http://dx.doi.org/10.1787/888933726304

The relatively solid base of human capital is a good starting point for Norway, however, more advanced skills will be required. Projections suggest that 86% of new job opportunities (net employment change and replacement demand) between 2015 and 2025 will require upper secondary education or higher, and 44% of these new job openings will require higher education (CEDEFOP, 2016). Vocational skills, engineering and technical skills, social sciences skills, mathematics and communications skills are considered to be some of the most needed skills over the next five years (Rørstad et al., 2017). Currently, occupations that require a vocational or higher education qualification, such as skilled trades positions, engineers, technicians, medical professionals, teachers, managers and accounting staff, are among the most difficult to fill (Manpower Group, 2015), either due to a lack of candidates, a lack of candidates with work experience, or a lack of candidates with the right technical and transversal skills.

Ensuring that individuals in Norway have the skills to meet current and future labour market needs to allow the country to transition to a greener, increasingly digital and globalised economy is the challenge laid out for Norway. This means building on its existing skills base and developing the right mix of discipline-specific and transversal skills through higher education. Advanced discipline-specific skills will not be enough to drive innovation. They will need to be coupled with a range of good quality transversal skills (Bernat et al., 2017), such as analytical skills, writing skills, reading comprehension, judgement and decisions making, which are some of the skills currently in shortage in Norway's labour market (OECD, 2016d).

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Chapter 3. Structure and governance of the higher education system

This chapter contextualises higher education within the broader Norwegian education systems and provides an overview of the structure of higher education; the profile of higher education students; the pathways and processes to enter higher education; the accessibility of the system; and the investment made by government into higher education. This chapter also explores how government and its subordinate agencies use regulation, funding, information and organisation within the higher education system.

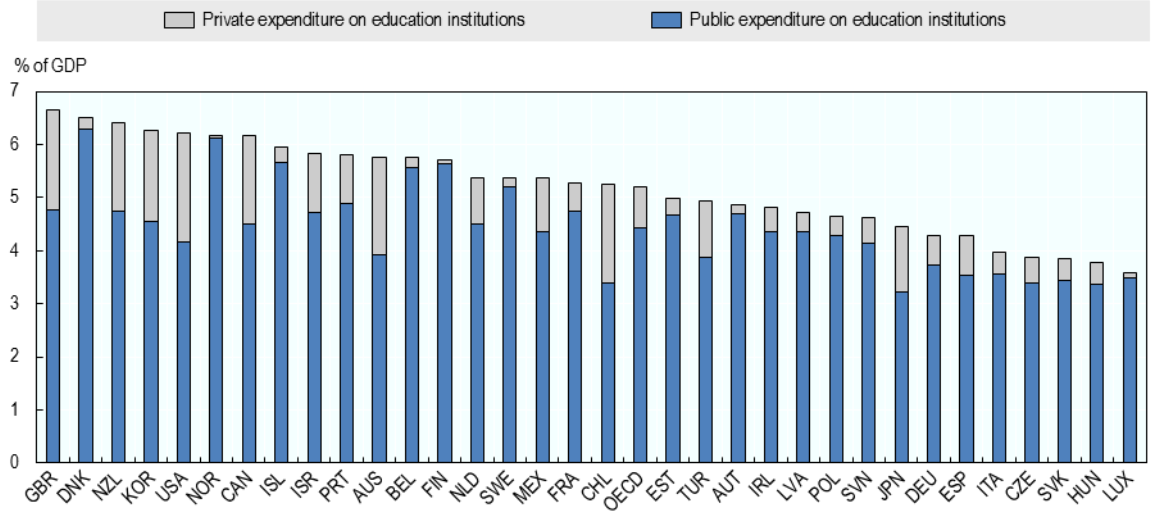
Structure of the higher education system

Overview of the education system

Norway has a well-developed and accessible education system, which is supported by significant public investment, compared to other OECD countries (OECD, 2016). Six percent of gross domestic product (GDP) is spent on the education system, largely from government sources, compared to an average expenditure of 5.2% across all OECD countries (Figure 3.1).

Figure 3.1. Expenditure on education as a percentage of gross domestic product, by source of funding

2014



Note: Public sources include public subsidies to households attributable for educational institutions, and direct expenditure on educational institutions from international sources. Private sources are net of public subsidies attributable for educational institutions.
Source: OECD (2017a), *Education at a Glance*, http://dx.doi.org/10.1787/888933557850.

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Norwegians hold their education system in high regard. Among Norway's adults, 85% are satisfied with the education system, an increase of 8% since 2007 (OECD, 2017a). This confidence in the education system is among the highest in the OECD, and reflects the high priority placed on education by policy makers, and the high degree of dialogue and transparency around policy initiatives that aim to increase quality within the system.

Norway's education system can be divided into five major groupings (Figure 3.2):

- Pre-primary education and care (ages 0 to 5), which is known as level 0 in the International Standard Classification of Education (ISCED).
- Primary and lower secondary education (age 6 to 16), which are known as ISCED levels 1 and 2, respectively.
- Upper secondary education (ages 16-18), known as ISCED level 3.
- Post-secondary non-tertiary and tertiary short-cycle education with a vocational orientation (age 19 and up), known as ISCED levels 4 and 5, respectively.
- Higher education (age 19 and up), which covers ISCED level 6 (bachelor's and the two-year partial bachelor programmes at university colleges), ISCED level 7 (master's), and ISCED level 8 (doctoral programmes).

High-quality pre-primary education for all children is a major pillar of Norway's education system. Norway has one of the highest participation rates among OECD countries at this education level, and it is relatively uniformly distributed across all regions (Statistics Norway, 2017). Over 90% of Norway's children between the ages of 1 and 5 attend a pre-primary education facility, although enrolment is only voluntary. Significant public subsidies and access guarantees for all children over the age of 1 ensure high participation at this level of education (Engel et al., 2015).

Compulsory education starts at age 6 with primary education and concludes at age 16 in lower secondary education (Statistics Norway, 2017). The compulsory education system is largely public – 95% of primary and lower secondary schools are public and 95% of all Norwegian students attend these schools (Statistics Norway, 2017). Primary and lower secondary education focus on teaching reading, writing, arithmetic, oral communication, digital literacy, and a broad range of social and emotional skills within the context of specific subject areas, such as Norwegian language, English language, mathematics, social sciences, religion and ethics, arts and crafts, natural sciences, food and health, music, and physical education (Norwegian Ministry of Education and Research, n.d). Students can also study additional foreign languages at the lower secondary level. The curriculum is partially modified in the traditional Sami regions of Northern Norway to include instruction on the Sami language (Norwegian Ministry of Education and Research, 2007).

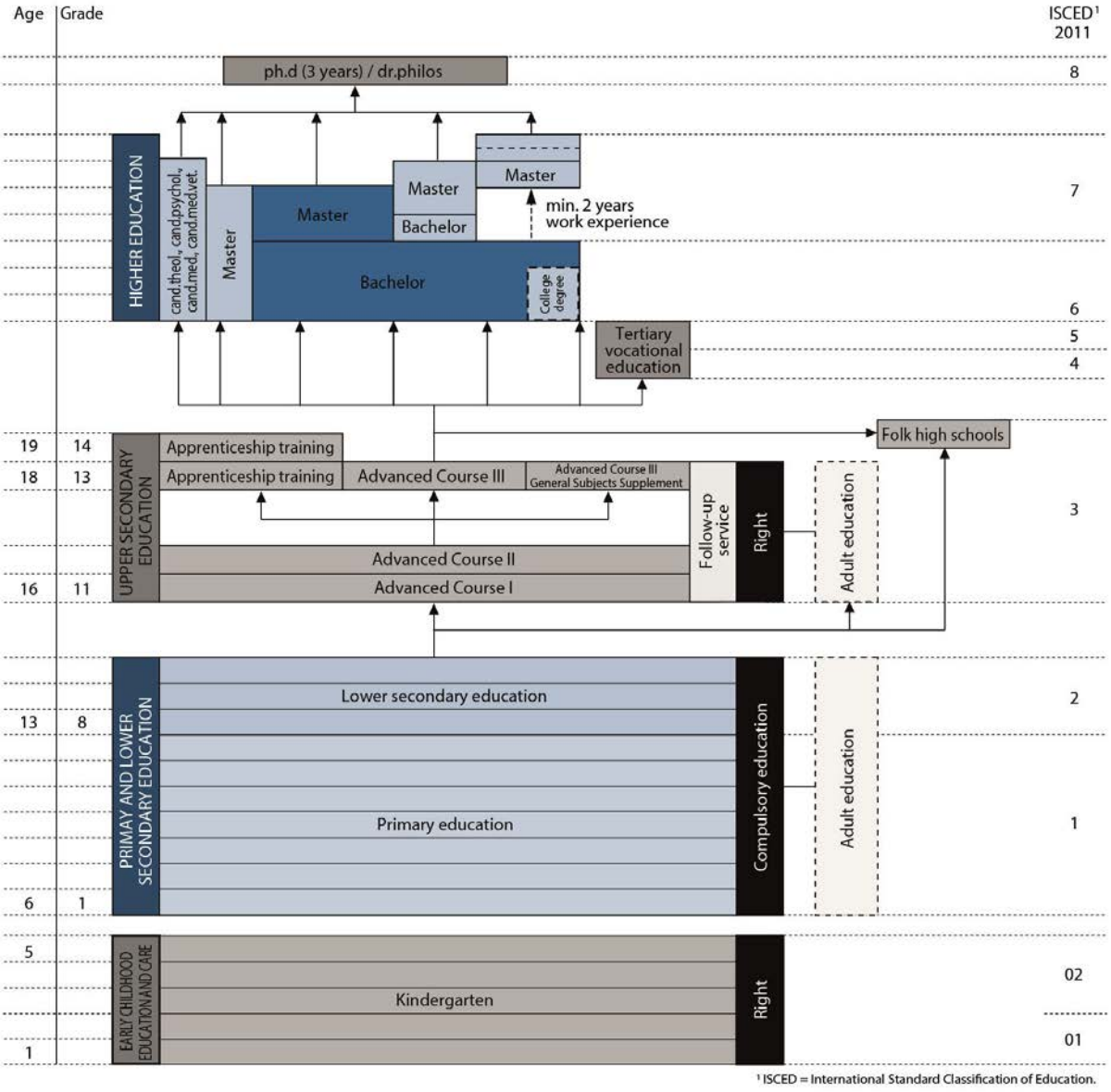
Norway's graduates from lower secondary education typically enter upper secondary school, which is not a compulsory form of education, but all students are entitled to access. Schools at this level of education are primarily public institutions. Only 20% of institutions are private and they serve under 10% of the student population (Statistics Norway, 2017).

Upper secondary education prepares students either for further education or the labour market. Most students apply to one of two tracks: a three-year general programme or a four-year vocational programme, the latter including two years of learning at an upper secondary education institution and a two-year apprenticeship in the workplace. In 2016, 124 065 students were enrolled in the general track and 117 365 in the vocational track (Statistics Norway, 2017). The general track is designed to prepare students for entry into higher education. The vocational track prepares students for jobs in certain occupations or further education in a post-secondary non-tertiary vocational programme (ISCED 4), or a

tertiary short-cycle vocational programme (ISCED 5). Both tracks aim to ensure that students develop proficiency in reading, writing and numeracy (Norwegian Ministry of Education and Research, 2015).

Figure 3.2. The Norwegian education system

2018



Source: Statistics Norway (2018), *Facts about education in Norway 2018 – Key figures 2016*, www.ssb.no/en/utdanning/artikler-og-publikasjoner/_attachment/335543?_ts=160b64995e0.

Many OECD countries have large cohorts of students studying short-cycle tertiary education programmes (ISCED 5), which can have either a vocational or an academic orientation, as part of the higher education system. In Norway, however, enrolment at this level is very low, and programmes are only vocationally oriented and not classified as higher education. As a result, ISCED 4 and 5 level programmes are offered at vocational

colleges (*Fagskole*). Programmes in the vocational colleges are generally between six months and two years in duration. Currently, around 11 500 students, as estimated by the National Centre for Research Data, study in ISCED 5 level programmes, compared to more than 250 000 students enrolled at ISCED level 6 (bachelor's programmes), level 7 (master's programmes) and level 8 (doctoral programmes), which form the higher education system of Norway (Table 3.1).

Table 3.1. Norway's higher education institutions, by programme offer, student enrolment, and academic staff

Academic year 2017-2018

Type of higher education institution	Number of institutions that deliver higher education, by highest ISCED level provided		Student enrolments		Doctoral degrees awarded (ISCED 8)	Academic staff (full-time equivalent)
			ISCED 6	ISCED 7		
Public	ISCED 8	18	156 097	66 120	1 390	20 702
	ISCED 7	3	5 986	718		480
	ISCED 6	-	-			-
Private government-dependent	ISCED 8	2	3 541	1 108	8	259
	ISCED 7	9	5 285	958		371
	ISCED 6	3	359			27
Private independent	ISCED 8	1	13 248	7 490	12	337
	ISCED 7	1	7 848	159		176
	ISCED 6	-	-			-

Note: The table does not include private institutions that do not receive any government funding or institutions funded directly by the ministries of defence and justice. Academic staff includes both teaching and research staff. Research staff includes doctoral and post-doctoral researchers.
Source: Database for Statistics on Higher Education (DBH), Norwegian Centre for Research Data.

Types of higher education institutions

In Norwegian discourse, higher education refers to education at the bachelor's (ISCED 6), master's (ISCED 7) and doctoral level (ISCED 8). The institutions operating at these levels are universities (public institutions), specialised institutions (both public and private), and university colleges (both public and private). The current structure of the higher education system can trace its roots back to reforms and mergers in the early 1990s that resulted in the 98 colleges becoming 26 university colleges (Clark et al., 2009). In the years following this consolidation of the higher education system, Norway's higher education landscape has continued to shift. University colleges, which traditionally offered bachelor's programmes with a link to the world of work, gained the right to offer advanced master's and doctoral programmes, which had largely been the domain of universities (Arbo and Bull, 2016). The higher education system went through another series of mergers between university colleges and universities in 2016-2017, which further reduced the number of higher education institutions (Norwegian Ministry of Education and Research, 2017).

As a result of mergers and regulatory changes, and the common legislation that governs both universities and university colleges, the distinction between these two types of institution has become less clear. It is therefore more appropriate to describe the structure of Norway's higher education system in terms of institutions' relationship to government (Table 3.1).

The public higher education institutions are state-owned and represent the backbone of the higher education system in Norway. Most are generally comprehensive in nature,

offering programmes in a wide array of fields up to the master's level (three institutions) or doctoral level (18 institutions). They enrol 89% of all higher education students and employ 96% of all academic staff (Table 3.1). They also enrol the majority of doctoral students and receive most of the research funding. However, these figures understate the role of public higher education institutions, because they exclude higher education institutions not under the auspices of the Ministry of Education and Research, such as the Norwegian Defence University College, the Norwegian Police University College, and the Correctional Service of Norway Staff Academy. These institutions train people specifically for employment in the state security apparatus and are under the responsibility of the Ministry of Defence and Ministry of Justice and Public Safety.

The 11 private government-dependent institutions are set-up as non-profit organisations, and while their governing bodies are independent, they receive more than 50% of their funds from government. They provide programmes at the bachelor's level only or up to a master's level, generally in one specific field of study, such as theology, dance, digital technology, pre-primary school teaching or agriculture.

Finally, there are two private government-independent institutions in Norway, which receive less than 50% of their funding from government sources. These are Kristiania University College and BI Norwegian Business School, the country's largest business school.

Autonomy and accountability of higher education institutions

Norway's higher education institutions enjoy a relatively high degree of autonomy in many areas compared to other European countries (Table 3.2). All higher education institutions have similar levels of autonomy. The key distinction between universities and other higher education institutions is that university colleges and specialised higher education institutions are required to apply for accreditation for new master's and doctoral programmes in fields where they do not have an already accredited doctoral programme. Higher education institutions are generally able to make decisions about their governance and academic structures. In addition, they have full discretion in deciding which programmes to offer and the number of student places to allocate to each programme, designing course and programme content, and hiring academic staff.

However, Norway's public universities have limited autonomy in the areas of financing and staffing. In particular, they cannot apply tuition fees or borrow money in contrast to private institutions. Moreover, as academic staff members at public institutions are public servants, they do not have full discretion over their dismissal or the setting of salaries. Overall, while institutions have relatively high formal autonomy, the fact that the national government funds higher education institutions fully or to a large extent implies considerable government steering of the system.

Admissions processes

Transitions to higher education

The skills of Norway's secondary school students are only middle-ranking in international measures, which is a concern for higher education institutions. In particular, Norway's secondary school students score around the OECD average in the Programme for International Student Assessment (PISA) tests of science and maths, and these results have only shown modest improvements over time, but in reading, they perform above average.

Skills deficiencies are especially apparent in the domains of quantitative and analytical skills. According to PISA, almost 20% of 15-year-old students in Norway perform below

level 2, considered the baseline level of proficiency in science (Figure 3.3). At the other end of the scale, Norway's top performers in science and mathematics are consistent with the OECD average, but this means that only one in ten students are proficient at level 5 or 6. Only students at these levels are sufficiently skilled in and knowledgeable about science and mathematics to creatively and autonomously apply their knowledge and skills to a wide variety of situations, including unfamiliar ones.

Table 3.2. Autonomy of public universities in Norway, by area of responsibility

Unweighted scores

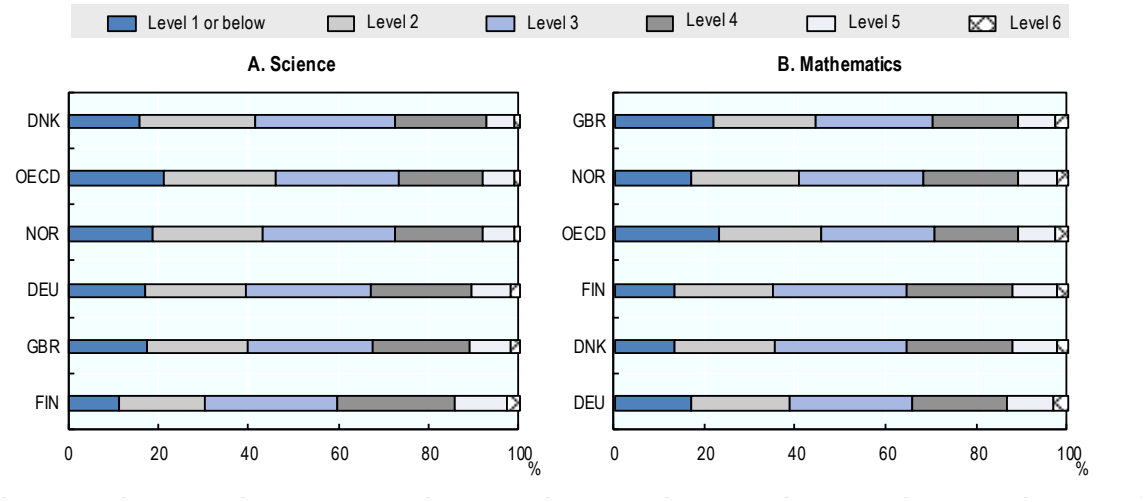
Area of responsibility	Degree of autonomy
Organisational	
Selection procedure for the executive head	100%
Selection criteria for the executive head	100%
External members in university governing bodies	57%
Capacity to decide on academic structures	100%
Financial	
Type of public funding	100%
Ability to borrow money	0%
Ability to keep surplus	80%
Ability to own buildings	80%
Staffing	
Recruitment procedures for senior academic staff	100%
Salaries for senior academic staff	58%
Dismissal of senior academic staff	0%
Promotion procedures for senior academic staff	71%
Academic	
Ability to decide on overall student numbers	80%
Admissions procedures at bachelor's level	60%
Admissions procedures at master's level	100%
Introduction of programmes at doctoral level	100%
Termination of degree programmes	100%

Source: European University Association (n.d.), "Norway", http://www.university-autonomy.eu/countries/norway/.

Performance at lower secondary school level, along with geographic proximity to school, immigrant background, and parental education, plays a strong role for success in upper secondary school in Norway. Nearly every lower secondary graduate (98%) at the age of 16 continues onto upper secondary education, but many drop out from school (Figure 3.4). One in five young people below the age of 25 fail to complete upper secondary education, and among upper secondary students in the vocational strand, as many as one in three do not complete school (OECD, 2018).

Figure 3.3. Proficiency in science and mathematics among 15-year-old students

2015

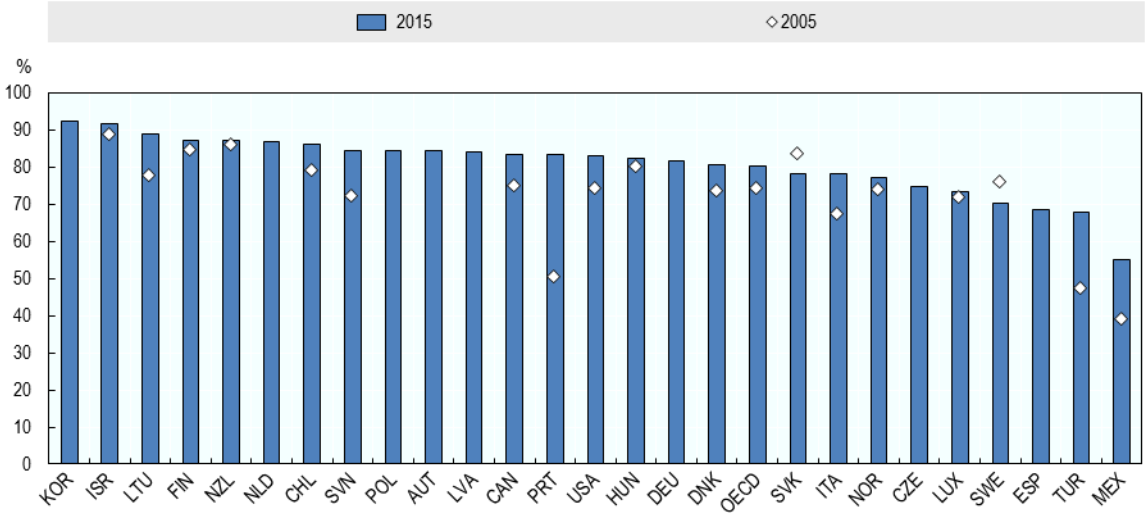


Note: Countries are ranked in an increasing order of their performance at levels 5 and 6.
Source: PISA Database (2015).

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Figure 3.4. Graduation rate from upper secondary education, youth aged below 25

2005-2015



Note: Countries are ranked in descending order of first-time upper secondary graduation rates for students younger than 25 in 2015.
Source: OECD (2017a), *Education at a Glance*, http://dx.doi.org/10.1787/888933557052.

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Admissions pathways

In Norway, there are multiple pathways for entry into higher education. At the bachelor's level, and for some integrated master's programmes, incoming students must demonstrate that they have obtained the general matriculation standard (*Generell studiekompetanse*).

The general matriculation standard can be achieved primarily by completing the general track of upper secondary education or by completing the vocational track and having passed six key academic subjects: Norwegian, Mathematics, Natural Sciences, Social Studies, English, and History. Individuals over the age of 23 can also be admitted to higher education without having completed upper secondary education if they can demonstrate basic proficiency in those six subjects and five years of work experience and/or training.

In some cases, higher education institutions may place additional requirements on entrants beyond the general matriculation standard for specific programmes. These requirements can include an entrance examination for the programmes or the completion of specific upper secondary courses, such as mathematics and sciences courses, for admission into medicine, health studies, and engineering programmes.

Applications for bachelor's programmes and integrated master's programmes are centrally co-ordinated for public higher education institutions and participating private institutions. The admissions process is based on a point scale within quotas, with the highest ranking applicants offered a place in their preferred institution. In this system, half of all student places are reserved for those 21 years of age or younger. These "youth quota" applicants are ranked solely on the courses they completed in upper secondary education and their grades. Applicants in the other half of the admission quota, known as the "ordinary quota", can obtain extra admission points based on their age, past education experience and military service. Some applicants within this quota have to re-sit exams to improve their upper secondary school results.

Although demand often exceeds the number of places available, the system does accommodate the vast majority of applicants. In 2015, 87.5% of all qualified applicants were offered a place in a higher education programme (Norwegian Ministry of Education and Research, 2015).

Applicants for master's and doctoral programmes apply directly to the higher education institutions, which have complete autonomy in the admissions processes. A completed bachelor's degree is the general admissions requirement for studying at the master's level. However, graduates with a bachelor's degree who are applying for a master's in a different field of study may need to fulfil extra requirements such as passing an entry exam, taking additional courses, or relevant work experience.

The successful completion of a two-year master's or a five-year integrated master's programme provides access to doctoral studies. Applications to doctoral programmes in Norway are formally job applications, as all doctoral students are employed either at the higher education institution or through a private company or a public employer.

Transitions within the higher education system

All higher education institutions in Norway are obliged by law to recognise completed programmes and courses from all other higher education institutions in the country. Good transfer pathways and credit recognition make it relatively easy to switch programmes and institutions, giving more chances to students to find the type of programme that corresponds best to their needs, expectations and skills, and to continue education, but also to stay longer in higher education and potentially not complete.

To support pathways and student mobility between Norwegian higher education institutions and other higher education institutions within Europe, Norway joined the Bologna Process, which has standardised a common degree structure (3 years of bachelor's + 2 years of master's + 3 years of doctoral studies) and instituted a common

European credit transfer system (ECTS) within the European Higher Education Area (EHEA).

Student population in Norway

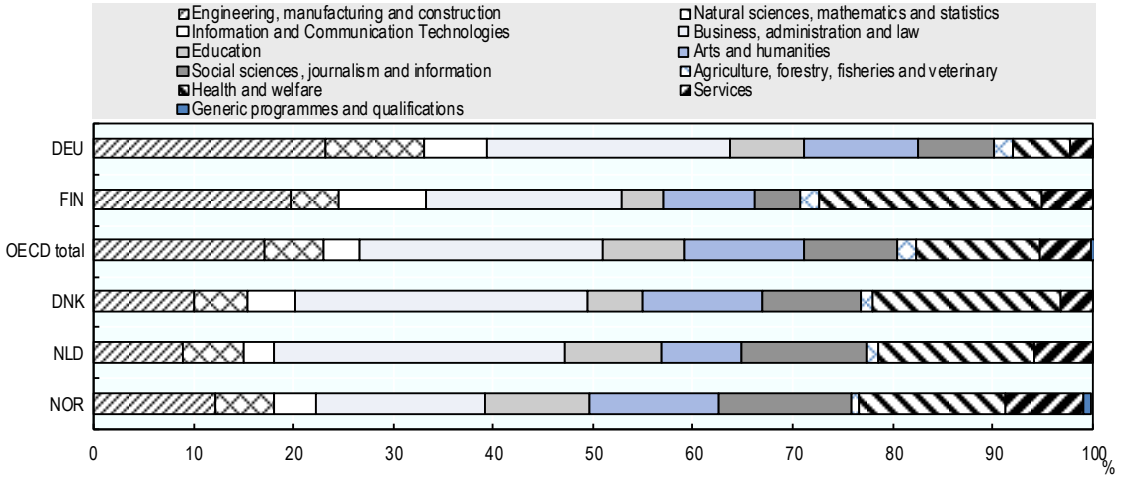
In 2017, over 250 000 students were participating in Norway's higher education system, most of them in a bachelor's programme (73%), followed by master's (24%) and then doctoral studies (3%) (OECD, 2017a).

As in most OECD countries, the majority of Norway's higher education students are enrolled in business administration and law programmes, but to a lesser extent than the OECD average (Figure 3.5, Panel A). Enrolment rates in science, technology, engineering and mathematics (STEM) and ICT fields of study also remain well below the OECD average and the country's peer economies. In contrast, Norway has more students in the social sciences, humanities, education and health related fields of study.

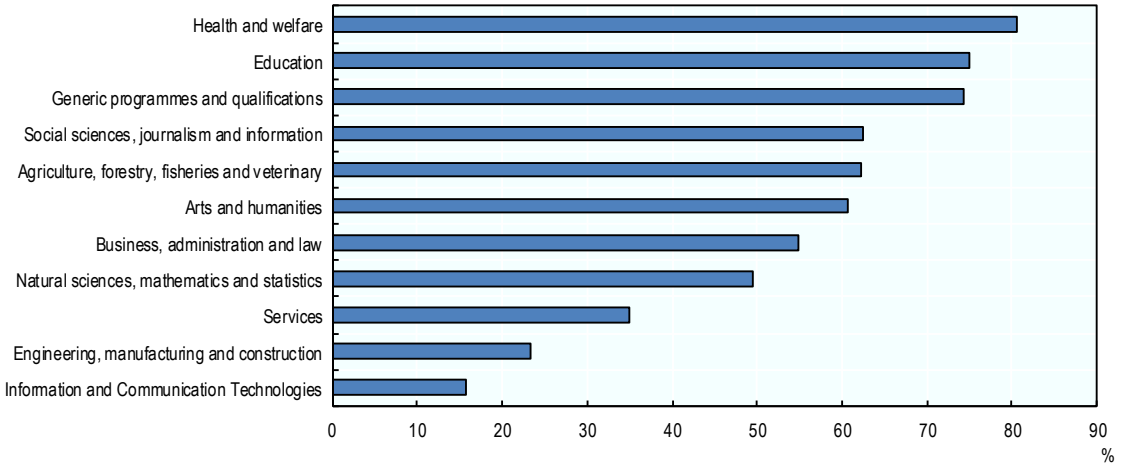
Figure 3.5. New entrants to higher education, by field of study and gender

2015

A. Share of new entrants, by field of study



B. Share of female new entrants in Norway, by field of study



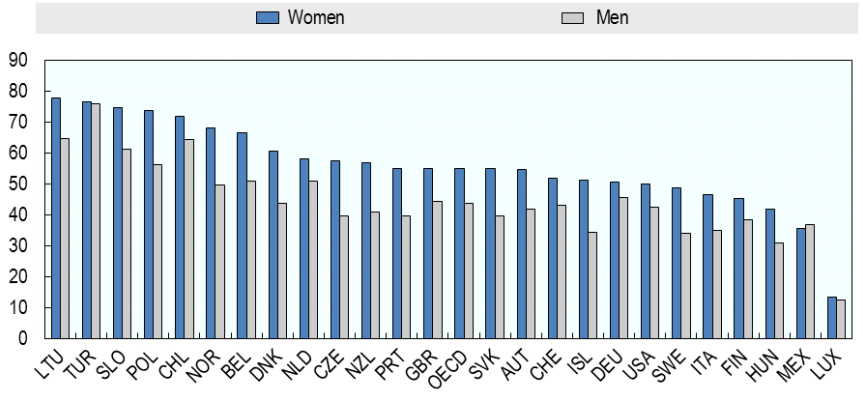
Source: OECD (2017a), *Education at a Glance*, http://dx.doi.org/10.1787/eag-2017-en.

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Women make up the majority of higher education students in Norway, and this trend shows no sign of abating, although it is driven primarily by participation at the bachelor's level rather than advanced higher education. Overall, the current share of men and women under the age of 25 who enter higher education in Norway is high by international standards, with a high gap in the participation rate of 18% (Figure 3.6). However, as in most OECD countries, gender differences between fields of study are common in Norway's higher education system, where women make up less than a fourth of students in engineering and ICT subjects (Figure 3.5, Panel B).

Figure 3.6. First-time higher education entry rates below the age of 25, by gender

Excluding international students, 2015



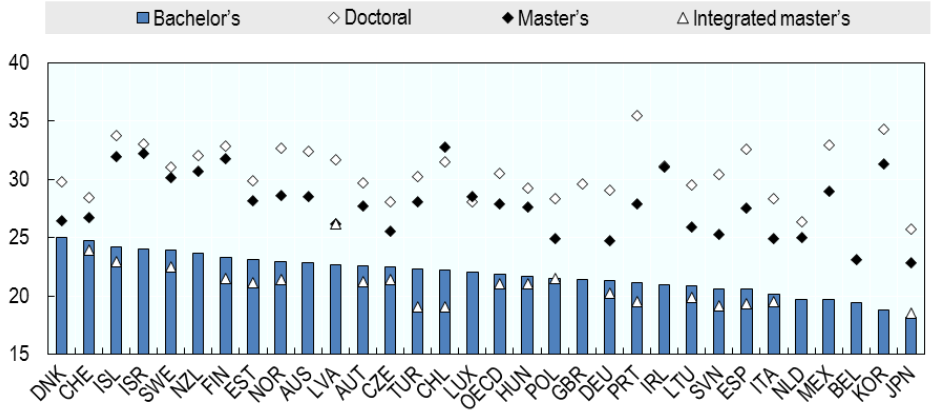
Source: OECD (2017a), *Education at a Glance*, http://dx.doi.org/10.1787/888933558344.

StatLink http://dx.doi.org/10.1787/888933726399

The higher education student population in Norway is generally older than that in many other OECD countries (Figure 3.7), which can be attributed in part to the number of mature learners entering higher education (over 35 years-old) and the relatively high proportion of students (35%) who study part-time, particularly at the bachelor's level (Figure 3.8). Among those older than 30 years-old, the number increases to 65%, which is almost 15% higher than the OECD average for that age group (OECD, 2017a).

Figure 3.7. Average age of new entrants to higher education, by level of education

2015

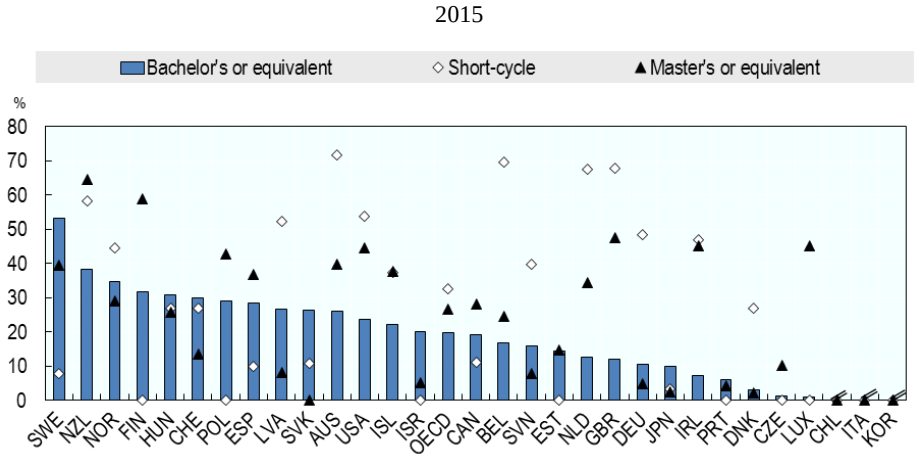


Source: OECD (2017a), *Education at a Glance*, http://dx.doi.org/10.1787/888933558325.

StatLink http://dx.doi.org/10.1787/888933726418

Norway has a relatively low number of international students within its higher education system. The country lies far behind the OECD average at all levels of higher education: only 20% of doctoral, 7% of master's and 2% of bachelor's students have come from another country to study in Norway (Figure 3.9). However, the proportion of non-Norwegians working on their doctoral theses in Norway has doubled over the last 20 years, and is likely to increase further as Norway attracts a large number of students at this level of education from western and southern Europe and Asia (OECD, 2017a).

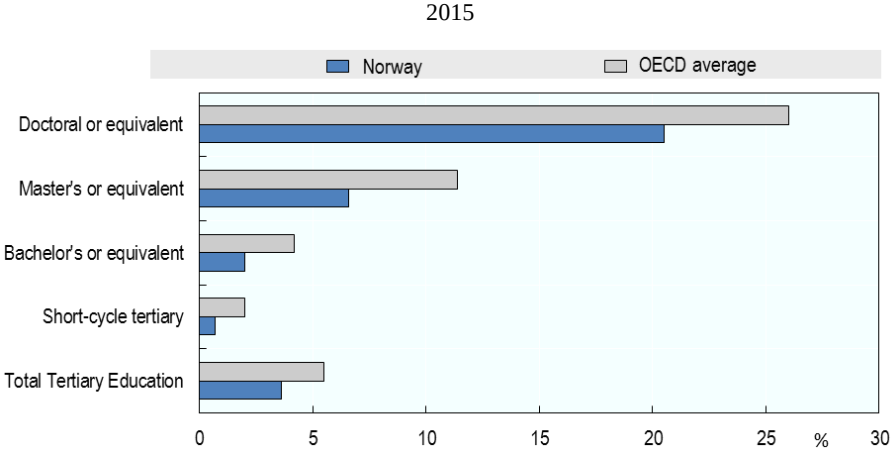
Figure 3.8. Proportion of part-time higher education students, by level of education



Source: OECD (2017a), *Education at a Glance*, http://dx.doi.org/10.1787/eag-2017-en.

StatLink http://dx.doi.org/10.1787/888933726437

Figure 3.9. Share of international students in Norway, by level of education



Source: OECD (2017a), *Education at a Glance*, http://dx.doi.org/10.1787/eag-2017-en.

StatLink http://dx.doi.org/10.1787/888933726456

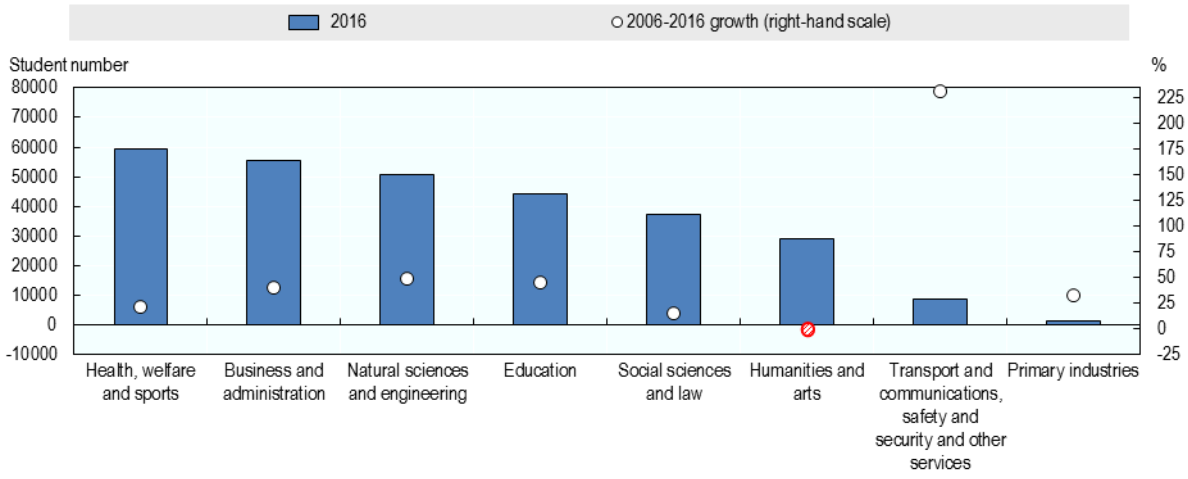
Access and participation in higher education in Norway

Overall enrolment in higher education has increased by 30% over the last ten years, with some fields of study benefitting more than others (Figure 3.10). Enrolment in STEM, business programmes and teacher education has increased above the system's average,

but declined in humanities and arts. Meanwhile, the fields of social sciences and law, and health and welfare have experienced below average growth.

Figure 3.10. Enrolment growth in Norway's higher education system, by field of study

2006-2016



Source: Statistics Norway.

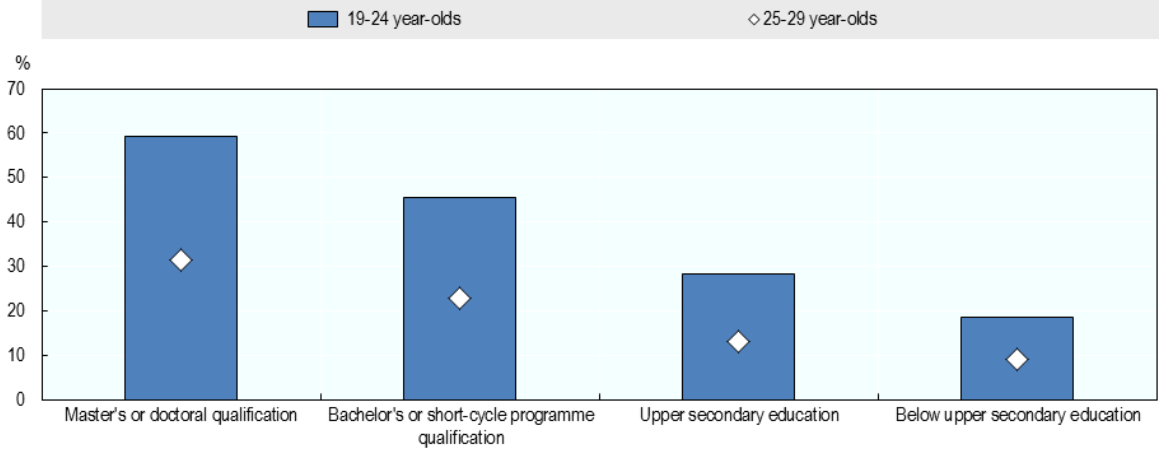
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Access to the system has been largely facilitated by the lack of financial barriers to higher education. Norway has a well-developed student financial assistance programme, and public higher education institutions do not charge tuition fees.

However, despite the lack of financial barriers, socio-economic background, especially parental education, does play a role in determining the likelihood of participation in higher education, although less so than in some other OECD countries (OECD, 2017a). While at least 40% of 19-24 year-olds whose parents hold a higher education degree are in higher education, less than 20% of youth with parents who have not completed upper secondary school study in higher education (Figure 3.11).

Figure 3.11. Share of young students in higher education in Norway, by parental education

As a percent of the population of 19-24 year-olds and 25-29 year-olds, 2017



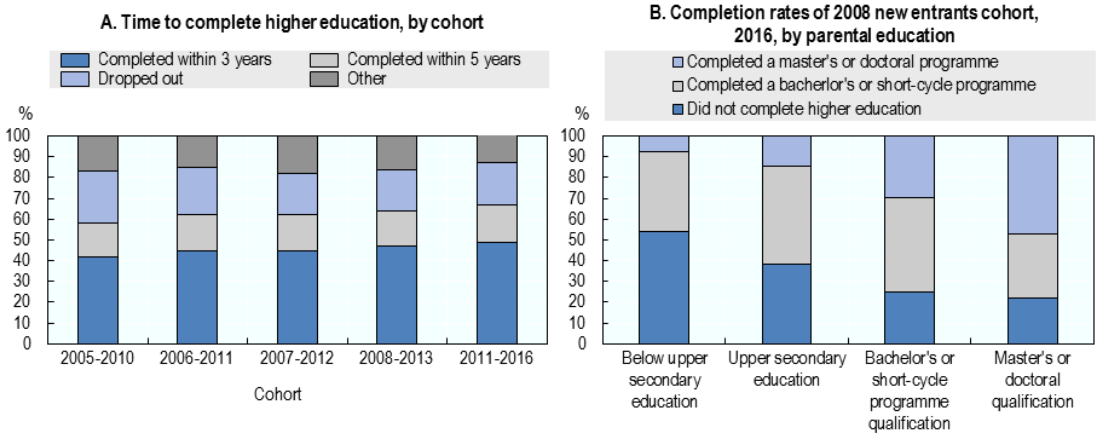
Source: Statistics Norway.

StatLink http://dx.doi.org/10.1787/888933726494

Timely completion and dropout rates in higher education remain a concern in Norway. More than half of bachelor degree students do not complete their programme within the prescribed time, and one in five higher education students drop out of their programme (Figure 3.12). There are several contributing factors: the relatively low financial cost of participation in higher education in Norway, a robust job market, insufficient academic preparation before enrolment, and inadequate career guidance. Non-completion can also be associated with the relatively large share of mature learners in Norway who do not necessarily intend to complete a programme and acquire a qualification, but simply wish to develop additional skills through a particular subject course.

The system's flexibility allows students to move in and out of higher education easily in response to work and life commitments (OECD, 2016). Many students also switch between programmes (Figure 3.13). Socio-economic background plays a role too: students whose parents have acquired only upper secondary education or below have more than twice as high non-completion rates as their peers whose parents hold a higher education qualification.

Figure 3.12. Completion rates of higher education students in Norway

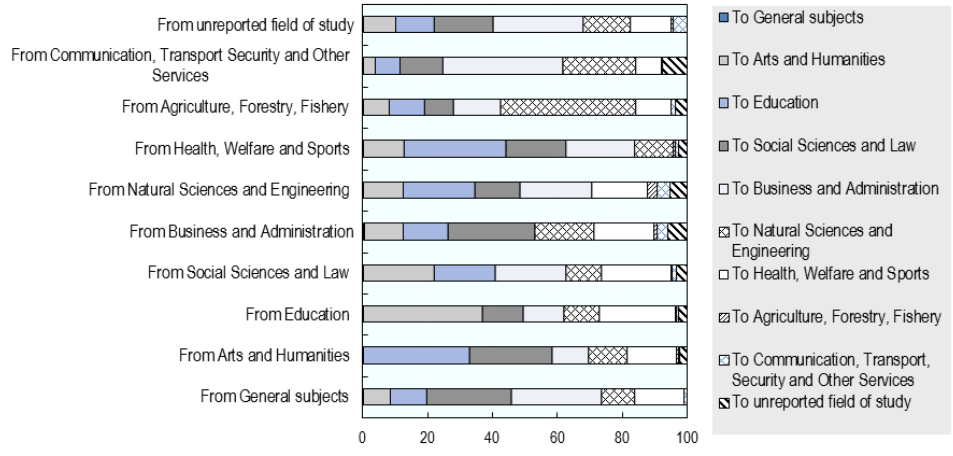


Source: Statistics Norway.

StatLink http://dx.doi.org/10.1787/888933726513

Figure 3.13. Student flows between fields of study in Norway

Academic period 2014-2016



Source: Database for Statistics on Higher Education (DBH), Norwegian Centre for Research Data.

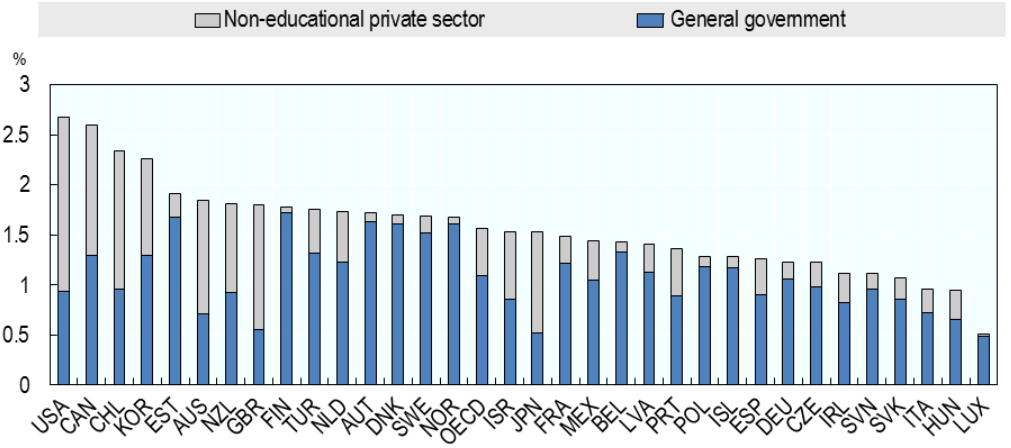
StatLink http://dx.doi.org/10.1787/888933726532

Expenditure on higher education

Norway spends as much as the OECD average on higher education and other tertiary education institutions (Figure 3.14), but the distribution of public and private expenditure is more uneven than in most other countries. In particular, Norway is second only to Finland in terms of public expenditure in the higher education system, which makes up to 96% of the overall investment in Norway. This is largely explained by the lack of tuition fees for public higher education institutions. In contrast, across the OECD, 70% of investment in higher education is public, while 30% comes either from households or other private entities. Expenditure on higher education has kept pace with the growth in student enrolment to remain well aligned with expenditure per student. Growth in expenditure is also aligned with GDP growth in Norway (Figure 3.15).

Figure 3.14. Public and private expenditure on tertiary education as a percentage of gross domestic product

2014

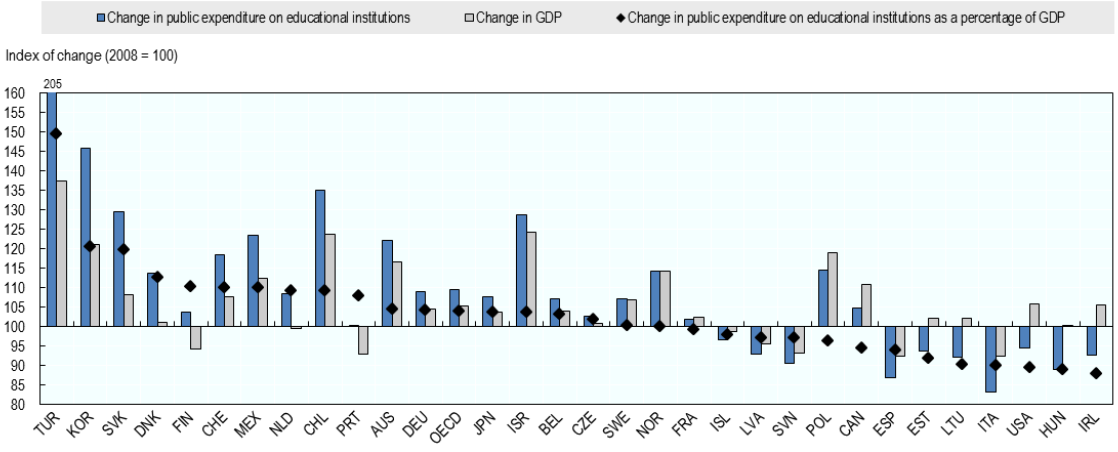


Source: OECD (2017a), *Education at a Glance*, http://dx.doi.org/10.1787/eag-2017-en.

StatLink http://dx.doi.org/10.1787/888933726551

Figure 3.15. Change in higher education spending and gross domestic product

2014



Source: OECD (2017a), *Education at a Glance*, http://dx.doi.org/10.1787/eag-2017-en.

StatLink http://dx.doi.org/10.1787/888933726570

Governance of the higher education system

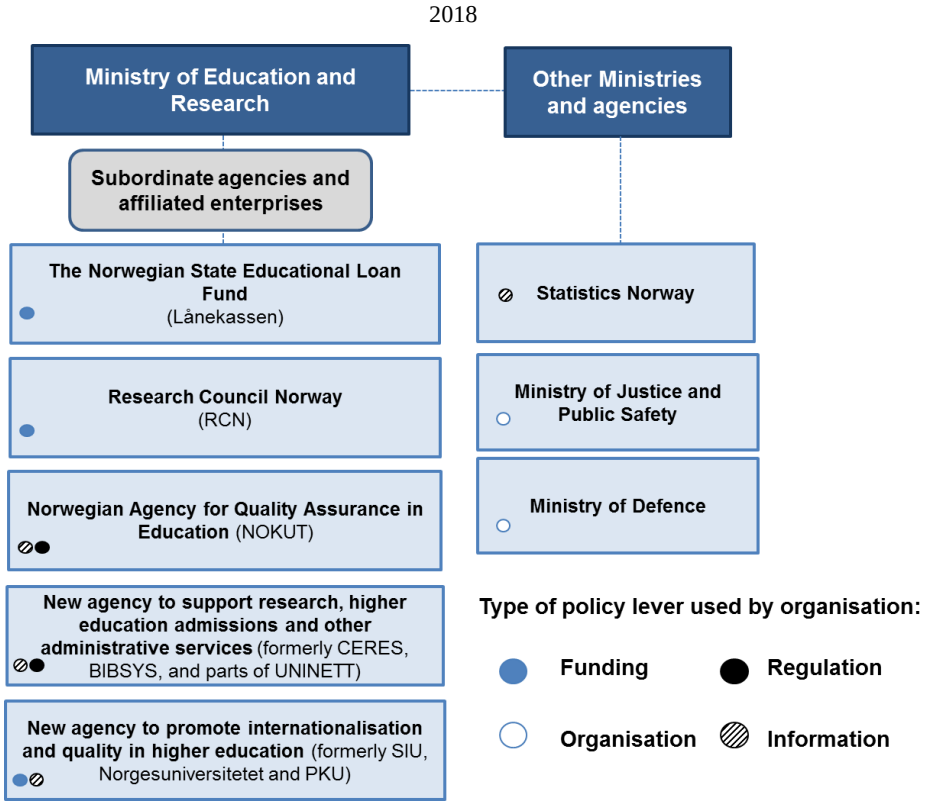
Higher education governance encompasses the structures, relationships and processes through which, at both national and institutional levels, policies for higher education are developed, implemented and reviewed. It is a complex web of legislative frameworks, the characteristics of institutions and how they relate to the whole system, how money is allocated to institutions, and how they are accountable for the way it is spent. It also relates to less formal relationships and structures that steer and influence behaviour.

Higher education governance, therefore, deals with how authority is distributed between state power, institutional autonomy, and market forces, and the relationship between higher education institutions and government, business and communities, and internal stakeholder groups. These three mechanisms for governance – state, institutional and market – are present in all higher education systems to a different extent. This report focuses on how government steers the higher education system through government and intermediary agencies to better understand how to affect the labour market relevance and outcomes of higher education in Norway.

Steering higher education

Across OECD member countries, governments steer higher education through a suite of regulatory, funding, information and organisational policy levers developed and administered through ministries and intermediate agencies, such as quality assurance agencies, funding councils, and research authorities.

Figure 3.16. Subordinate agencies, affiliated enterprises and other ministries and agencies that play a role in the higher education system of Norway



Source: OECD compilation based on information provided by the Ministry of Education and Research of Norway.

Following political changes in early 2018, the Norwegian government has placed a stronger emphasis on higher education through the appointment of a minister responsible explicitly for higher education and research, in addition to a minister responsible for the other levels of education.

The Norwegian government, predominantly through the Ministry of Education and Research, uses a range of policy levers to steer higher education. A key feature of the Norwegian system is the extensive consultation processes with the higher education institutions. This consensus-based approach reflects the high level of trust that exists between higher education institutions and the Ministry (Elken, Frølich and Reymert, 2016). It also supports the autonomy of higher education institutions in education and research (Fägerlind and Strömqvist, 2004).

The government has expanded its steering role significantly in recent years by introducing higher education performance agreements in 2016 and revising the performance funding model in 2017.

While the government actively steers the higher education system in Norway through the Ministry of Education and Research, it delegates authority to subordinate agencies and affiliated enterprises to administer certain functions through the use of various policy levers (Figure 3.16). These agencies and affiliated enterprises have various degrees of autonomy from government, but fall under the responsibilities of the Minister for Research and Higher Education. Independent organisations receiving government funding can also play a role in steering the system, often through the provision of information and student-related services.

Regulation of the higher education system

In Norway, the regulatory framework for higher education is set out in one piece of legislation: the Universities and University Colleges Act 2005 (hereafter "the Act"), which establishes the Ministry of Education and Research as the primary body responsible for higher education. The Act applies to all higher education institutions and sets out requirements for their organisational structure and management, the admission process into higher education, quality assurance and accreditation, student rights and responsibilities, employment, and the broader learning environment. The regulations associated with the Act outline the quality assurance process, the appointment and promotion process for teaching and research posts, and the means by which students are assessed in specific programmes.

Some of the regulatory powers outlined in the Act are delivered by subordinate agencies. The Act recognises the Norwegian Agency for Quality Assurance in Education (NOKUT) as the exclusive agency for the accreditation of higher education institutions. Once accredited by NOKUT, a higher education institution is able to provide programmes at certain levels of education, depending on the capacity and profile of the institution. Accredited universities are allowed to establish new programmes at all levels of education (self-accrediting status). Accredited public and private university colleges are able to accredit programmes within their field of specialisation where they have a doctorate programme, which means they can offer any master's and bachelor's degree in that area. Non-accredited institutions (some private institutions) need to apply to NOKUT to obtain permission for each programme they offer.

As part of the accreditation process, NOKUT sets up quality standards for academic programmes and conducts quality assurance reviews. As part of the quality assurance process, NOKUT collaborates with experts in the subject area and type of education programme and institution concerned to assess whether the institution offers high-quality education.

The Ministry of Education and Research is responsible for admissions policy, but the administration of the admissions process has been delegated to the National Centre for Systems and Services for Research and Studies (CERES), which, as of 1 January 2018, has been merged with BIBSYS (an organisation responsible for library system) and parts of the Norwegian Research Network (UNINETT) to form a new agency for research and higher education. The merged agency is responsible for the admissions process at the bachelor's and integrated master's level and serves as the interface for applying to most undergraduate programmes.

Another key piece of legislation related to the higher education system is the Student Welfare Organisation Act 1996 (Studentsamskipnad Act 1996). This legislation mandates higher education institutions to partner with a student welfare organisation. There are 14 regionally based student welfare organisations in Norway, which are partly funded by the government. They provide different services to students, including canteens, sports facilities, health services, day-care facilities and housing. These organisations receive both public funding and student contributions, and have access to office space and equipment provided by their partner higher education institutions.

Separate from the Act, and following a round of higher education institutional mergers and advice from an expert panel on higher education funding in 2015, the Ministry of Education and Research introduced performance agreements – another regulatory lever at the ministry's disposal – as a way of enhancing quality, co-operation and diversity (Larsen et al., 2017). These agreements identify key objectives for each institution to focus on and achieve over the course of a three- or four-year cycle. All public higher education institutions are required to enter into a performance agreement with the ministry by 2019.

Funding the higher education system

The Norwegian Parliament (Storting) determines the amount of funding granted to the higher education system through the annual budget, and the Ministry of Education and Research subsequently distributes the funding between each of the institutions. Each institution receives its funding as an annual block grant. Through these annual direct block grants, the public institutions have to cover their current expenditures and some of their capital expenditures. Higher education institutions enjoy a large degree of autonomy on how to spend the block grant so that they fulfil their own objectives and the nationally defined goals of the higher education sector as a whole.

The block grant consists of a fixed component and a performance-based component, which was introduced in 2002 and modified in 2017. The fixed component for each institution is based on a historical institutional allocation, while the performance-based component is determined through a system of indicators with incentives for improving performance in teaching and research. The total block grant and the proportional relationship between the fixed and the performance-based components vary between institutions. The funding model applies to both public and private institutions, although the public institutions receive larger block grants than those that are private.

Major capital expenditures, such as new buildings or the expansion of existing facilities, are negotiated between higher education institutions and the Ministry of Education and Research; although the Ministry of Local Government and Modernisation provides funding.

Intermediate agencies also play a role in funding the system, particularly in the domains of financial assistance for students and public research. The Ministry of Education and Research sets regulations for the allocation of student financial assistance (grants and loans) and terms of repayment, but the Norwegian State Educational Loan Fund

(*Lånekassen*) administers the programme. The Research Council of Norway (RCN) co-ordinates research funding through a base allocation, part of which is performance-based funding, and an array of strategic initiatives (Norwegian Research Council, 2016). Annually, it distributes roughly NOK 9 billion (Norwegian krone) for research and innovation activities at higher education intuitions.

A new agency to promote quality in research and higher education was established on 1 January 2018. This agency combines the former Norwegian Centre for International Cooperation in Education (SIU), the Norwegian Agency for Digital Learning in Higher Education (Norgesuniversitetet) and the Norwegian Artistic Research Programme. The new agency will continue providing funding to support: research projects and individual researchers in the fields of fine arts, better collaboration between employers and higher education institutions, the National Educational Quality award for innovative teaching, and the development of new approaches to active learning and digital learning for the life of work. The agency will also have responsibility for the Centres for Excellence in Education Initiative (SFU), which had previously been organised and funded through NOKUT.

Information within the higher education system

Statistics Norway, an independent government agency that reports to the Ministry of Finance, plays a role in the analysis and dissemination of data on higher education. The agency uses higher education institutional data to produce system-level statistics and disseminates key higher education indicators in its annual publication entitled "Facts about education in Norway".

The Norwegian Centre for Research Data (NSD), a limited liability organisation owned by the Ministry of Education and Research, maintains the National Database for Statistics on Higher Education (DBH), which is the main data repository for information about the higher education system. All higher education institutions are required to submit information about applications, student enrolments, study places, exam results, awarded degrees, international students, profile of academic staff, scientific publications and financial information. This information is collected mainly to support the planning process of the ministry and individual institutions and to monitor institutional performance.

Other agencies and affiliated organisations use surveys to generate data about the higher education system that can be used to develop policy and steer the higher education system:

- NOKUT conducts a higher education student satisfaction survey (*Studiebarometeret*), which examines student choice of field of study, quality of teaching, students' experiences in higher education, their workload and the career relevance of their study programmes. NOKUT also surveys academics about their perceptions of the quality of learning and teaching approaches they use.
- The new agency to promote quality in research and higher education will continue conducting SIU's survey of international students in Norway, which provides insights into their profile, perceptions about Norway as a study destination, in-class experience, and plans following graduation. The agency will also take over responsibility of Norgesuniversitetet's ICT monitor, which asks academics at public higher education institutions about the use of technology as a teaching tool. The agency will also continue the Expert Group for Work and Digital Learning, which is composed of academics, employers, trade union representatives and students, to support greater labour market relevance in higher education. The expert group is developing and disseminating information on how higher

education institutions can use digital learning methods to strengthen education co-operation with social partners and contribute to the development of labour market relevant skills (Norwegian Agency for Digital Learning in Higher Education, n.d.). The expert group also undertakes research on innovative technology-based education.

The Ministry of Education and Research draws on all the information about the higher education system provided by the agencies, affiliated enterprises and independent research organisations for planning purposes and to produce an annual report on the state of the higher education system.

The Ministry of Education and Research also has its own website, www.utdanning.no, which provides prospective higher education students with interactive information about higher education fields of study and occupations and the link between the two. In particular, it provides key information about the average scores required to enter a certain field of study and where it is offered. The website also lists the types of occupations for graduates from certain fields of study, the number of people working in those occupations and the median earnings for a given occupation.

Direct provision of higher education by government

The Ministry of Education and Research directly administers the University Centre in Svalbard, which allows students from Norwegian higher education institutions to pursue individual courses related to the Artic, while studying in the far north.

In addition, two other Norwegian ministries steer higher education through direct provision. The ministries responsible for justice and defence have responsibility for specific institutions which train police officers, correctional officers and military personnel.

Implications for labour market relevance

The Norwegian higher education system is relatively open and accessible. Higher education institutions are well-funded and students have relatively good access to student financial assistance. As a result, more Norwegians than ever are currently participating in and graduating from higher education. The increased higher education attainment levels among Norway's adults provides a large pool of skilled labour that will be increasingly required as Norway's economy continues to diversify its industrial structure away from the oil and gas sector.

However, the accessibility and flexibility of the system which facilitate equal entry to higher education in Norway do not necessarily produce the equivalent strong completion outcomes, as non-completion rates remains a concern. Non-completion and taking a long time to complete higher education can be largely attributed to Norway's robust labour market, which currently offers plenty of job opportunities. Non-completion can also be associated with the relatively large share of mature learners in Norway who do not necessarily intend to complete a programme and acquire a qualification, but simply wish to develop additional skills through a particular course rather than a complete programme. Poorer completion outcomes for students from socio-economically disadvantaged backgrounds may also signal the need for more targeted financial assistance, as well as quality issues in learning and teaching in higher education. Norway's students may not be getting the academic support they need to succeed and persevere in their programmes.

While Norwegians are currently able to find a job relatively easily in Norway without a higher education qualification, this may be changing. As advanced skills are becoming increasingly important to competitiveness and economic prosperity, the lack of

qualifications may severely impede Norwegians from obtaining good economic outcomes both in Norway and abroad.

The world of work and society expect higher education graduates to bring sound discipline-specific knowledge coupled with strong transversal skills. Some employers are also looking for more graduates from specific fields of study. Finally, as the economy is becoming more knowledge-based there will be an increasing demand for advanced skills. Despite the recent increase in the number of graduates from advanced levels of higher education, the share of Norway's adults holding a master's or doctoral degree remains below or at the OECD average.

This broad range of skills and qualifications are needed to support Norway's economic transition, while at the same time sustaining a high standard of living and competitiveness as a high-income, high-cost economy. However, there are concerns about how well and timely higher education institutions can shift resources to meet the skills needs of today and tomorrow, especially in light of limited government incentives to modify programme offerings. Higher education institutions may also need additional guidance and support from the government and society to reconsider their role and readjust their practices so that they remain well attuned to the needs of the world of work and society.

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Chapter 4. Labour market outcomes of higher education graduates

This chapter presents the skills and labour market outcomes of Norway's higher education graduates and analyses how well recent graduates are meeting current skills needs. It also considers how well graduates are being prepared for the future world of work. The analysis is based predominantly on evidence from the Survey of Adult Skills, European Labour Force Survey and various national data sources.

Higher education graduates in the labour market

Skills outcomes

Norway's adults are generally highly skilled. They perform above average in most of the skills domains measured by the OECD Survey of Adult Skills (Figure 4.1), particularly in readiness to learn and the three domains of assessed cognitive skills – literacy, numeracy and problem solving in a technology-rich environment. They also exhibit some of the highest levels of the use of information and communication technology (ICT), management and communication, and self-organisation skills on the job.

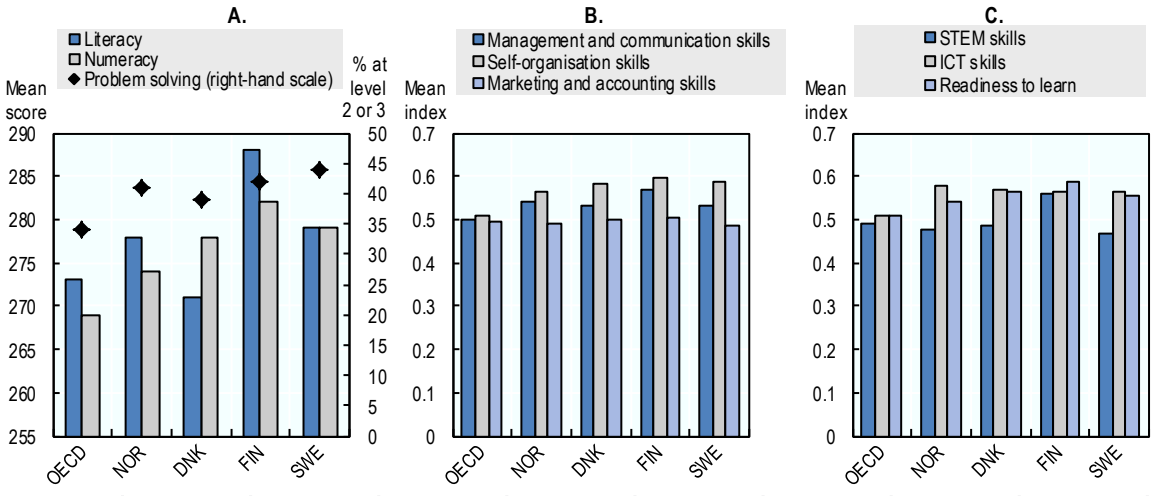
However, the use of numeric tasks, such as simple algebra or formulas or advanced mathematics and statistics, which are the types of quantitative skills necessary for science, technology, engineering and mathematics (STEM) activities, is rather low compared to other OECD countries. They have also around average use of the skills needed for marketing and accounting tasks, such as selling products and services, using a calculator, calculating costs or budgets, and reading financial statements.

Norway's skill profile is unusual compared to other OECD countries in that young people aged 16-24 perform worse on literacy and numeracy tests than all other age groups, except those aged 55-65 (Figure 4.2). This difference is particularly striking as young people are better educated than their older counterparts. It is rare for older age groups to outperform the young, which suggests problems in the current education system. As discussed in Chapter 3, Norway's 15-year-old pupils rank at the OECD average in mathematics and science, according to the Programme for International Student Assessment (PISA), and a relatively high proportion never complete upper secondary school. On the other hand, young people in Norway perform better at problem solving than older people by a greater margin than in most OECD countries participating in the Survey of Adult Skills.

As in all OECD countries, skills proficiency in Norway is, on average, strongest among holders of a higher education qualification. Norway's higher education graduates younger than 35 score around 24 points higher than upper secondary education graduates in both literacy and numeracy, which place them above or at the OECD average, respectively (Figure 4.3). In addition, the share of higher education graduates with strong problem solving skills in technology-rich environments is among the highest across OECD countries (Figure 4.4). The good performance in problem solving in technology-rich environments, alongside Norway's very rapid adoption of ICT in all walks of life, is important for the country's transformation into a more knowledge-based economy, but problem-solving skills need to be coupled with strong literacy, numeracy and transversal skills.

Figure 4.1. Adult skills

2012 or 2015

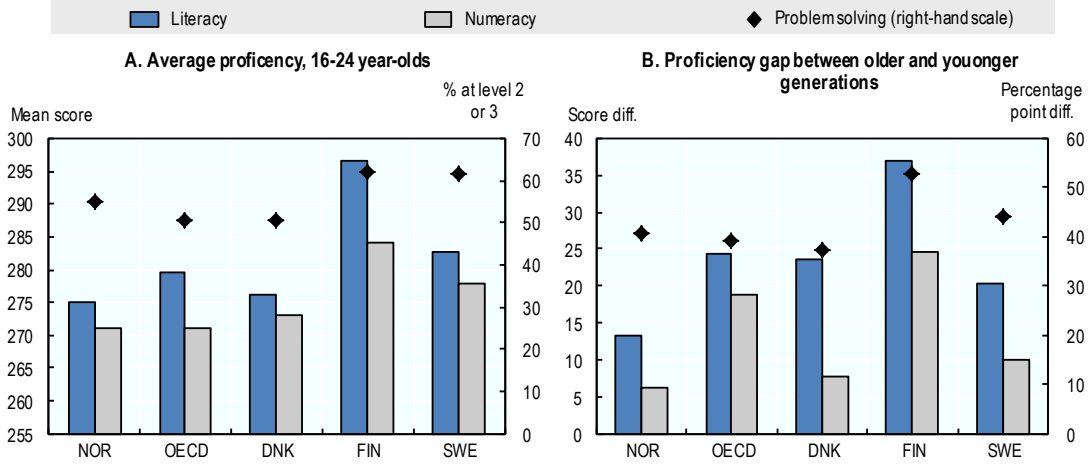


Note: Skills indicators in Panels B and C are based on information about how often tasks are performed; they do not directly capture the skills possessed by workers. These skills indicators are computed through an exploratory factor analysis developed in the OECD Skills Outlook 2017. A higher score is associated with a higher frequency of performing these tasks on the job.
Source: OECD (2013), *OECD Skills Outlook 2013*, http://dx.doi.org/10.1787/9789264204256-en; OECD (2017a), *OECD Skills Outlook 2017* http://dx.doi.org/10.1787/9789264273351-en.

StatLink http://dx.doi.org/10.1787/888933726589

Figure 4.2. Differences in skills proficiency, by age

2012 or 2015

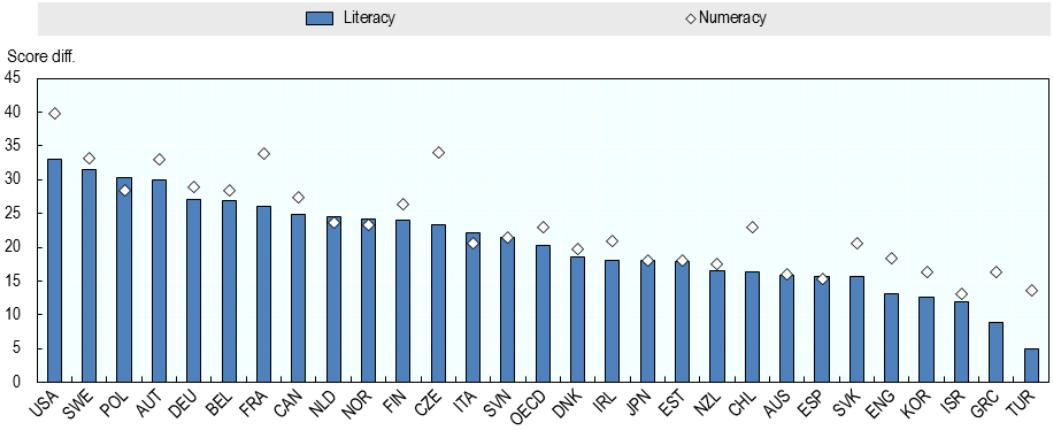


Source: OECD calculations based on the Survey of Adult Skills (PIAAC) (2012, 2015).

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Figure 4.3. Adjusted difference in the literacy and numeracy proficiency of higher and upper secondary education graduates, 16-34 year-olds

2012 or 2015

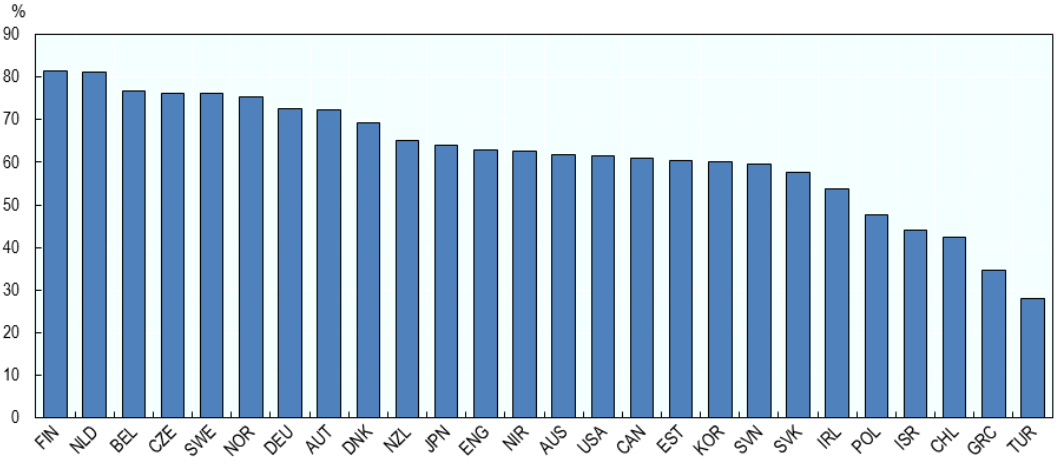


Note: The adjusted differences are computed through a regression model and take account of differences associated with age, gender, immigrant and language background and parents' educational attainment. The score differences are significantly different from 0 for all countries in both proficiency domains, except for literacy proficiency in Greece and Turkey. Data for Belgium refers to Flanders.
Source: OECD calculations based on the Survey of Adult Skills (PIAAC) (2012, 2015).

StatLink http://dx.doi.org/10.1787/888933726627

Figure 4.4. Higher education graduates with high problem solving skills, 16-34 year-olds

Percentage of young graduates scoring at proficiency level 2 or 3, 2012 or 2015



Note: Data for Belgium refers to Flanders.
Source: OECD calculations based on the Survey of Adult Skills (PIAAC) (2012, 2015).

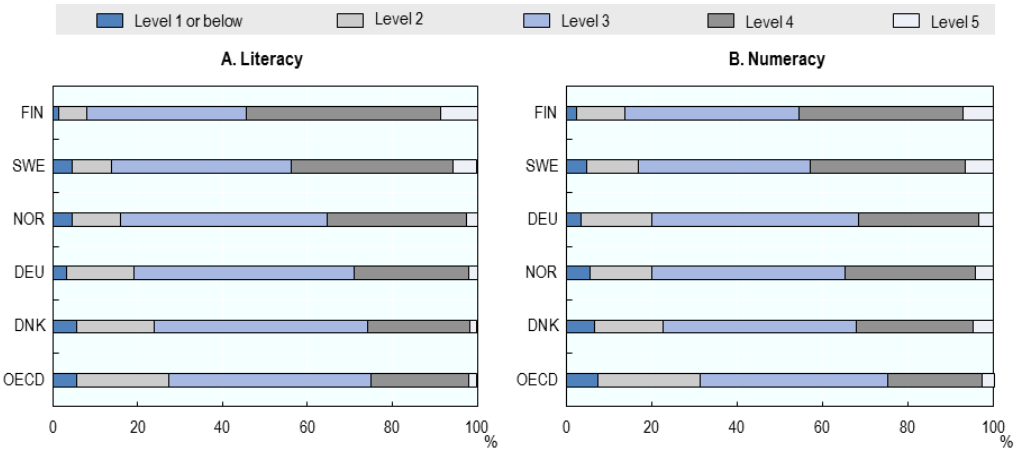
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Overall, Norway's higher education system strengthens individuals' skills both directly through their studies and indirectly through the jobs graduates are able to get thanks to their qualifications. Higher education graduates are more likely to find intellectually demanding jobs that will maintain and further develop their skills over their working lives. But some graduates are being left behind. One in five Norwegian higher education graduates below the age of 35 have low numeracy skills, and 16% have low literacy skills

(Figure 4.5). This raises concerns that some graduates are leaving higher education without the expected skills.

Figure 4.5. Proficiency distribution among higher education graduates, 16-34 year-olds

Percentage of graduates at the different levels of proficiency, 2012 or 2015



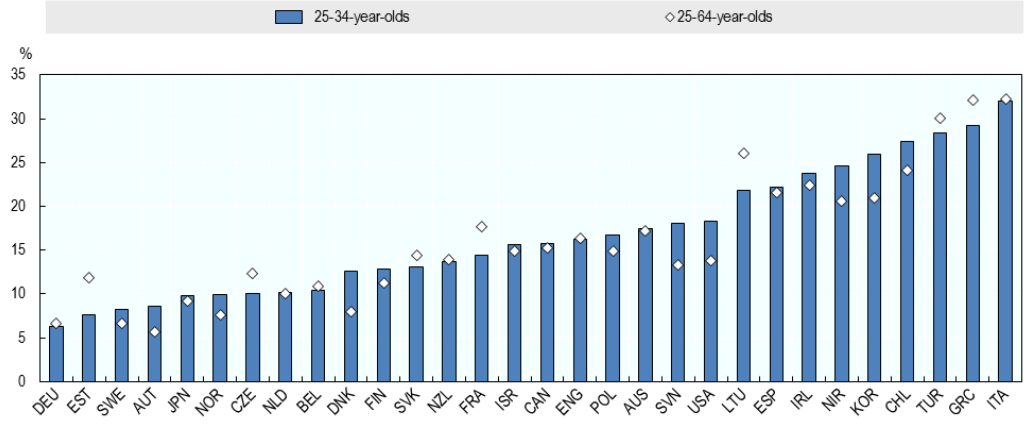
Source: OECD calculations based on the Survey of Adult Skills (PIAAC) (2012, 2015).

StatLink http://dx.doi.org/10.1787/888933726665

These results could also reflect the loss of skills some recent graduates experience when they are not in jobs that make the best use of their skills. In fact, 10% of Norway's young graduates are employed in jobs that leave them with little autonomy over the way they carry out their work (Figure 4.6). While Norway's higher education graduates on the whole perform better than many other OECD countries, the low level of skills of some Norwegian graduates is an area of concern, and may partly hinder the economy's transformation process.

Figure 4.6. Higher education graduates who work in jobs that leave them with little autonomy over the way they carry out their work, by age

2012 or 2015



Note: Share of workers with a higher education degree who answered "not at all" or "very little" to the question "To what extent can you choose or change the sequence of your tasks?". Data for Belgium refers to Flanders.
Source: OECD calculations based on the Survey of Adult Skills (PIAAC) (2012, 2015).

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Labour market outcomes

Average labour market outcomes

Norway's higher education graduates enjoy some of the strongest labour market outcomes by international standards (Figure 4.7). Their employment rate is the second highest among OECD countries (Figure 4.7, Panel A), largely thanks to the country's robust economy and well-functioning labour market. They also have among the lowest unemployment rates (Figure 4.7, Panel B). In addition, higher education graduates enjoy some of the highest earnings (Figure 4.7, Panel C) and quality of working environment (Figure 4.7, Panel D) in the OECD, including the nature and content of the work performed, working-time arrangements and workplace relationships. These indicators point to the capacity of the labour market to absorb the growing share of people with higher education qualifications.

Labour market outcomes by level of studies

Norway's graduates across the different levels of higher education do equally well in the labour market and fare significantly better than graduates from short-cycle tertiary education programmes on employment indicators (Figure 4.8, Panel A). As noted in Chapter 3, the short-cycle tertiary education programmes (ISCED 5) are not part of the Norwegian higher education system and are delivered through vocational colleges (Fagskole).

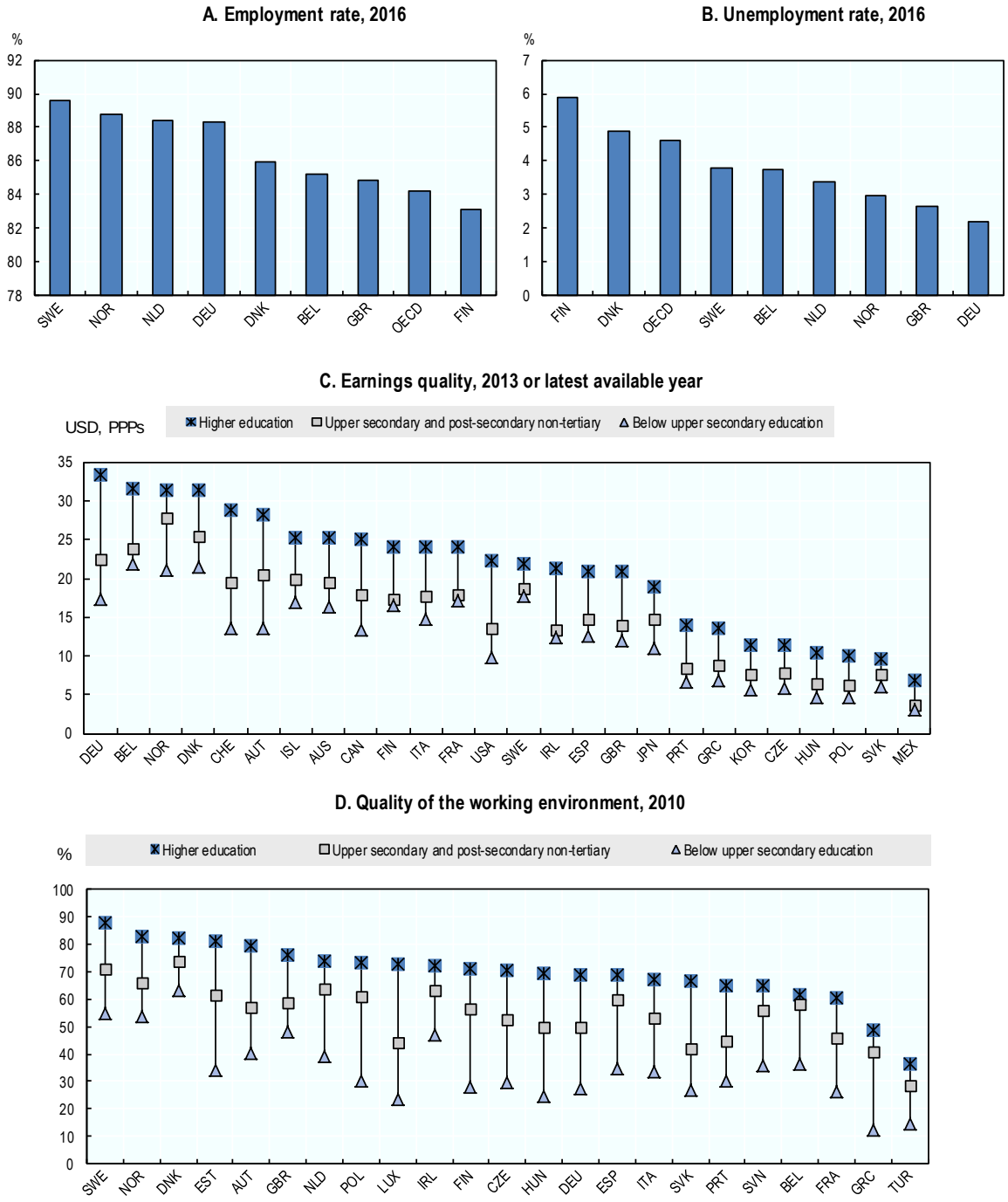
Norwegian bachelor's and master's graduates enjoy the best employment prospects by OECD standards, and the employment rate of Norway's doctoral graduates is high, consistent with the OECD average. Graduates with advanced degrees in Norway have the smallest relative advantage compared to bachelor's graduates among OECD countries.

While higher education graduates in Norway do well in terms of employment, they do not experience the same financial benefits of graduates in other OECD countries. This reflects, in part, the compressed wage distribution in the Norwegian economy. The estimated rate of private return to education, which depends on the difference between observed average earnings for graduates compared with non-graduates, is lower in Norway (6.7%) than in most OECD countries (11.2%) (OECD, 2014). As a result, graduates with a bachelor's degree earn, on average, the same as those who have completed upper secondary school (Figure 4.8, Panel B). However, bachelor's graduates earn less than those holding short-cycle tertiary education qualifications. The wage premium for graduates with master's and doctoral degrees compared to a bachelor's degree is also relatively small by OECD standards.

The compressed wage distribution, including among higher education graduates, may reduce the incentive to undertake and complete higher education, particularly at more advanced levels, which could inhibit productivity growth and innovation in Norway.

While there is little variation in the average earnings outcomes of higher education graduates, it matters where a graduate stands in the earnings distribution (Figure 4.9). For instance, top performing upper secondary school graduates earn more than higher education graduates at the bottom of the earnings distribution. In fact, the median upper secondary school graduate makes slightly more per month than higher education graduates with a bachelor's degree at the bottom of the distribution.

Figure 4.7. Labour market outcomes of higher education graduates in Norway, 25-64 year-olds



Note: In Panel C, the earnings quality indicator captures the extent to which earnings contribute to workers' well-being in terms of *average earnings* and their *distribution* across the workforce. In Panel D, the quality of the working environment indicator captures non-economic aspects of jobs, including the nature and content of the work performed, working-time arrangements and workplace relationships; these are measured as incidence of job strain characterised as *high job demands* with *low job resources*.

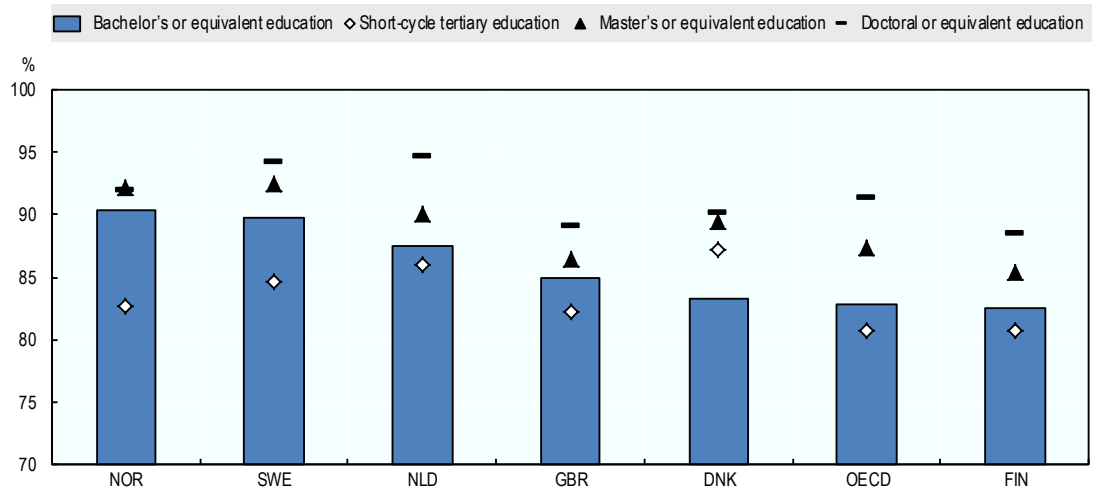
Source: OECD Job Quality Database; OECD (2017b), Education at a Glance 2017: OECD Indicators, http://dx.doi.org/10.1787/eag-2017-en.

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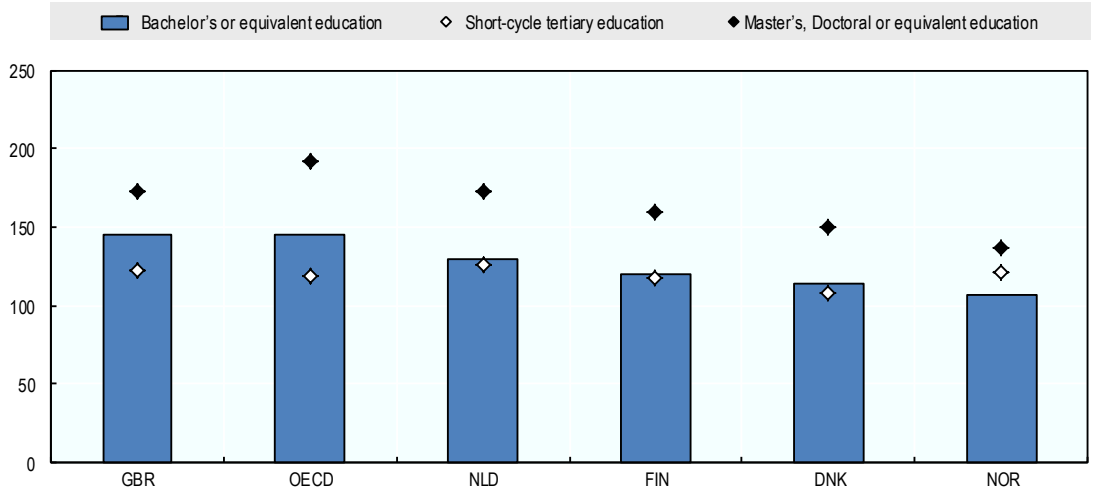
Figure 4.8. Labour market outcomes of 25-64 year-olds, by level of studies

2015

A. Employment rate



B. Relative earnings of full-time, full-year 25-64 year-old workers (upper secondary or post-secondary non-tertiary education = 100)



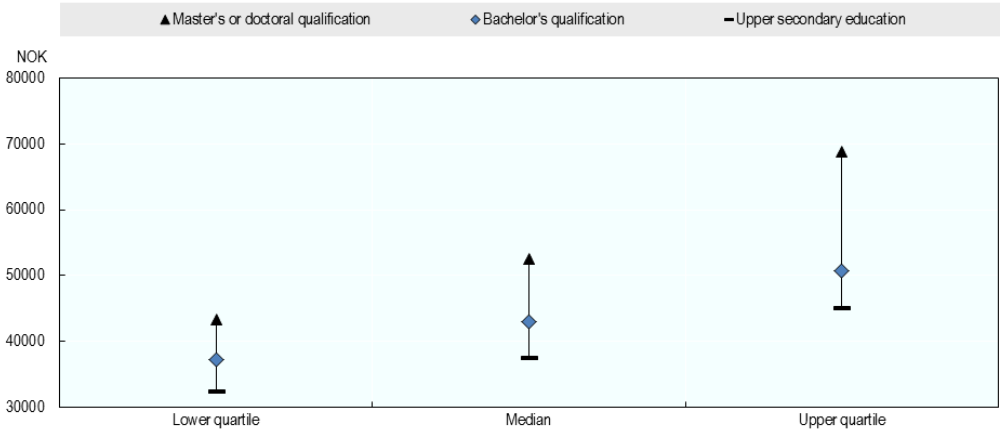
Source: OECD (2017b), Education at a Glance: OECD Indicators, http://dx.doi.org/10.1787/eag-2017-en.

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Poor earnings among some higher education graduates, particularly at the bachelor's level, may reflect low skills or a misalignment between those graduates' skills and the requirements of their jobs, particularly at the beginning of their professional lives. They could also be linked to differences in earnings between fields of study and the extent to which a particular study programme develops labour market relevant skills and professional knowledge. The lack of knowledge about employment prospects and how the world of work operates upon graduation, which is common among students from many bachelor's programmes, adds to the problem (Kantardjiev and Haakstad, 2018).

Figure 4.9. Distribution of monthly earnings in Norway, by level of studies

In Norwegian Kroner, 2016



Source: Statistics Norway.

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Labour market outcomes by field of studies

Norway's economy needs graduates from a broad range of disciplines, but graduates in some fields of study do less well than others. These differences, albeit small, are apparent at the transition to the labour market and may persist throughout their professional lives (Figure 4.10). Notably, the unemployment rate for arts and humanities graduates remains relatively high for an extended period of time, consistent with the OECD average. In contrast, graduates from other fields of study, such as natural sciences, take longer to find a job, but improve their employment outcomes over following years. The recent economic slowdown in Norway has slightly hindered the transition to the labour market of recent graduates, particularly from the engineering and natural sciences fields of study. Usually, every tenth graduate from these fields works in the resource extracting industries (Figure 4.11), which were the most affected following the sudden decline in oil prices in 2013.

Earnings are another measure that can be used to assess how well skills are valued in the labour market. In Norway, recent graduates working in occupations that are in demand in the public sector, such as the teaching and health professions, earn above the average of their cohort from other fields of study. This is also the case for graduates from engineering programmes (Figure 4.12). In contrast, arts and humanities, social science and law graduates consistently earn below average.

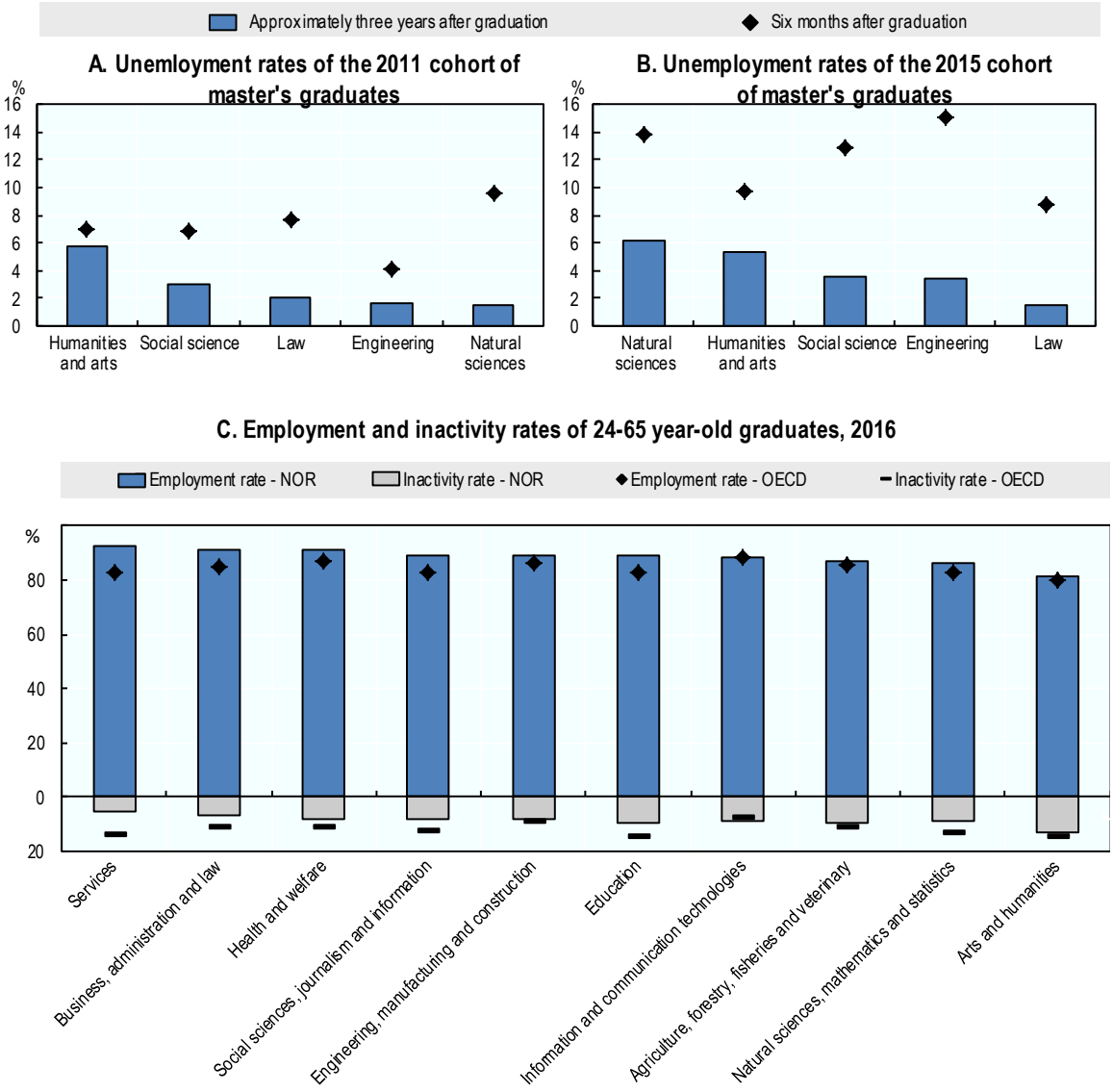
Due to Norway's compressed wage structure, the variation between graduates from different fields is relatively small: the average monthly salary in 2015 for education graduates was NOK 40 530 and NOK 36 470 for graduates from legal studies.

Earnings vary across fields of study, but also within the same field. For instance, some programmes from the fields of arts and humanities, such as languages, have better prospects than visual arts and crafts and media studies. Similarly, among the broad natural sciences and technology field of study, graduates in biology, physics and chemistry fare worse than those in mathematics and statistics or ICT programmes, which have stronger ties to the world of work (Støren et al, 2016a).

However, immediate earnings upon graduation are not necessarily a predictor of a lifetime wage advantage. Teachers in the school sector, for example, have high starting

salaries but low salary progression rates and generally earn less after 15 years of experience than graduates in other fields. Starting salaries in engineering have been relatively flat since 2013; although it remains one of the most highly remunerated fields of study, despite a significant decline in employment rates. Conversely, recent arts and humanities graduates have seen the largest wage increase since 2013, but have relatively low salaries compared to other graduates.

Figure 4.10. Employment outcomes of Norway's higher education graduates, by field of study

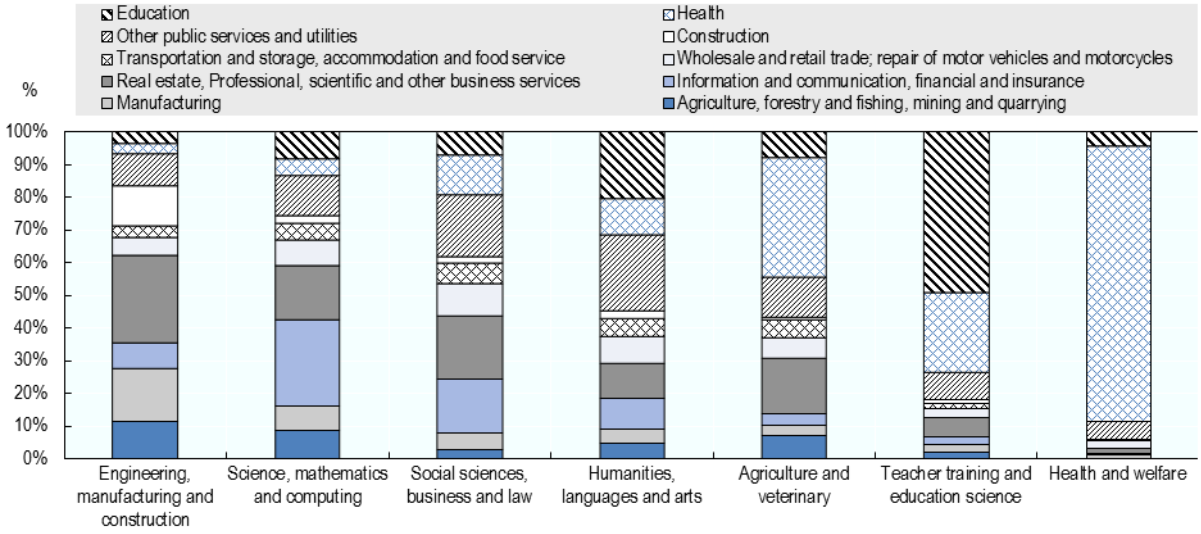


Source: Arnesen, C.A.; L.A. Støren, and J. Wiers-Jenssen (2013), *Tre år etter mastergraden – arbeidsmarkedssituasjon og tilfredshet med jobb og utdanning: Kandidatundersøkelse av mastergradskandidater og psykologer fra universitetene*, *https://brage.bibsys.no/xmlui/handle/11250/280637*; Støren, L.A. et al. (2018), *Kompetanseutnyttelse blant mastere to-tre år etter eksamen: Resultater fra Spesialkandidatundersøkelsen 2017*, https://brage.bibsys.no/xmlui/handle/11250/2480986; OECD (2017b), *Education at a Glance 2017*, http://dx.doi.org/10.1787/eag-2017-en.

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Figure 4.11. Industries of occupation of higher education graduates in Norway, by field of study

2013-2015

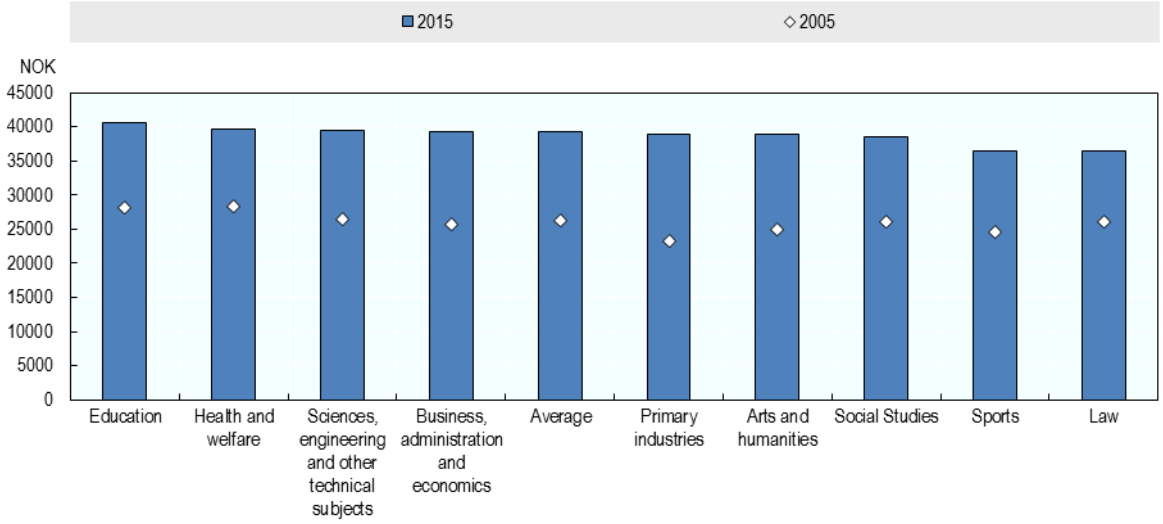


Note: Fields of study are ranked in increasing order by the share of graduates employed in the education, health and other public services and utilities industries.
Source: OECD calculations based on the European Labour Force Survey.

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Figure 4.12. Real average gross monthly earnings of Norway's higher education graduates six months after graduation, by field of study

In Norwegian Kroner, 2005-2015



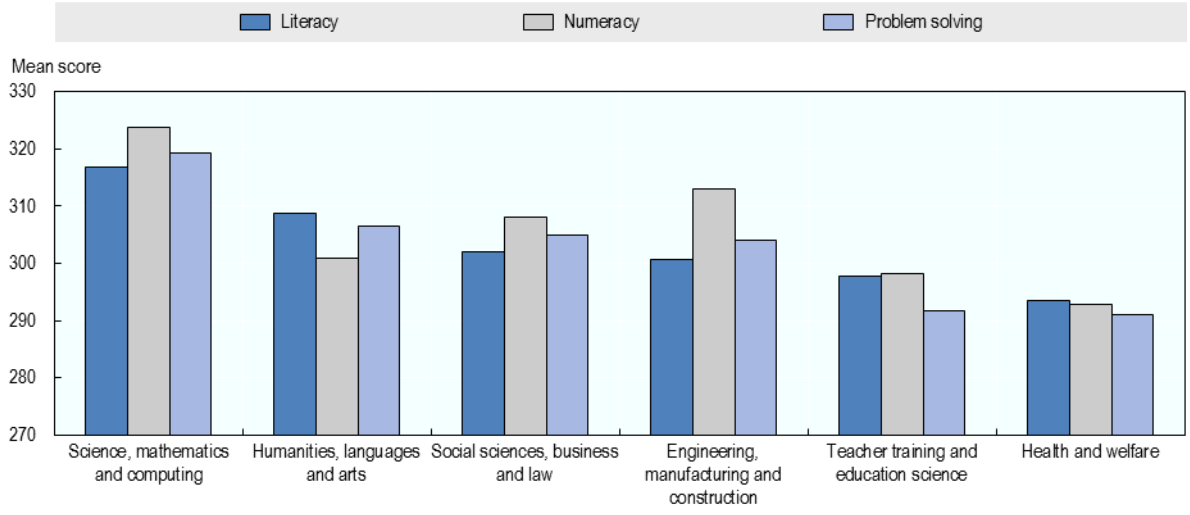
Source: Støren, L.A. et al. (2016a), *Kandidatundersøkelsen 2015: I hvor stor grad er nyutdannede mastere berørt av nedgangskonjunkturen?*, https://brage.bibsys.no/xmlui/handle/11250/239349.

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The relatively weak labour market outcomes of graduates from certain fields of study, particularly arts and humanities, cannot simply be explained by low skills after graduation (Figure 4.13). Arts and humanities graduates have, on average, the second highest literacy and problem-solving skills in Norway after science, mathematics and computing graduates. Their numeracy skills are lower than those of graduates from some other fields of study, but the gap, especially with engineering graduates who need to have solid numeracy skills to perform on the job, is small. In contrast, graduates of health and welfare and education programmes have the lowest proficiency across the various skills domains. However, they enjoy among the best employment rates and stable earnings of all graduates, thanks to the continuous demand for skilled labour in their respective sectors and the connections between their study programmes and the world of work.

Figure 4.13. Skills of Norway's higher education graduates, by field of study

2012

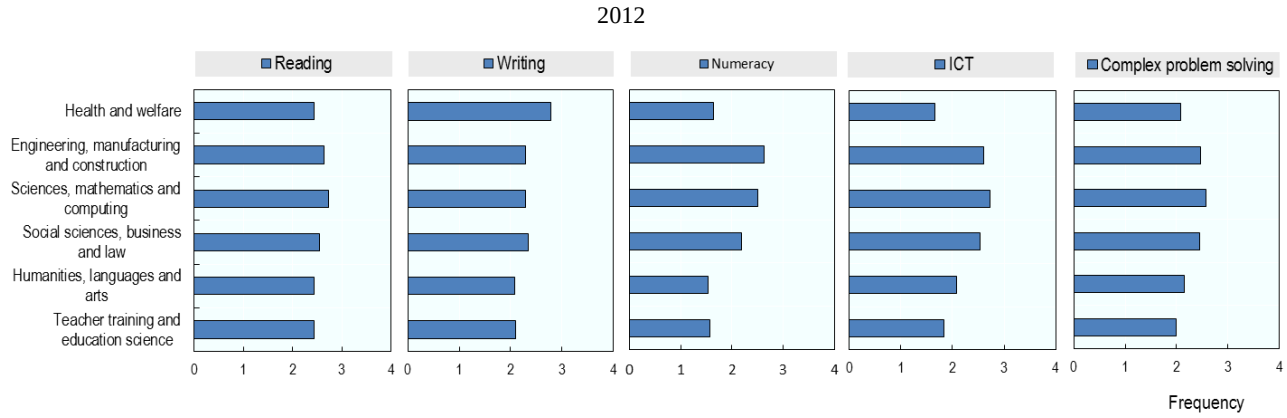


Source: OECD calculations based on the Survey of Adult Skills (2012, 2015) Database.

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Arts and humanities graduates in Norway may have poorer earnings because they have more difficulty in finding jobs that make full use of the knowledge and skills they have developed in higher education than graduates from other fields of study. Less than 2% of engineering and ICT graduates work in service and sales occupations where they do not make full use of the knowledge and skills they acquired in higher education (Figure 4.15). By contrast, more than 10% of arts and humanities graduates work in these occupations, making up the largest share across fields of study (Figure 4.15). These graduates report that they make less use of skills such as complex problem solving, numeracy, writing, reading and ICT (Figure 4.14).

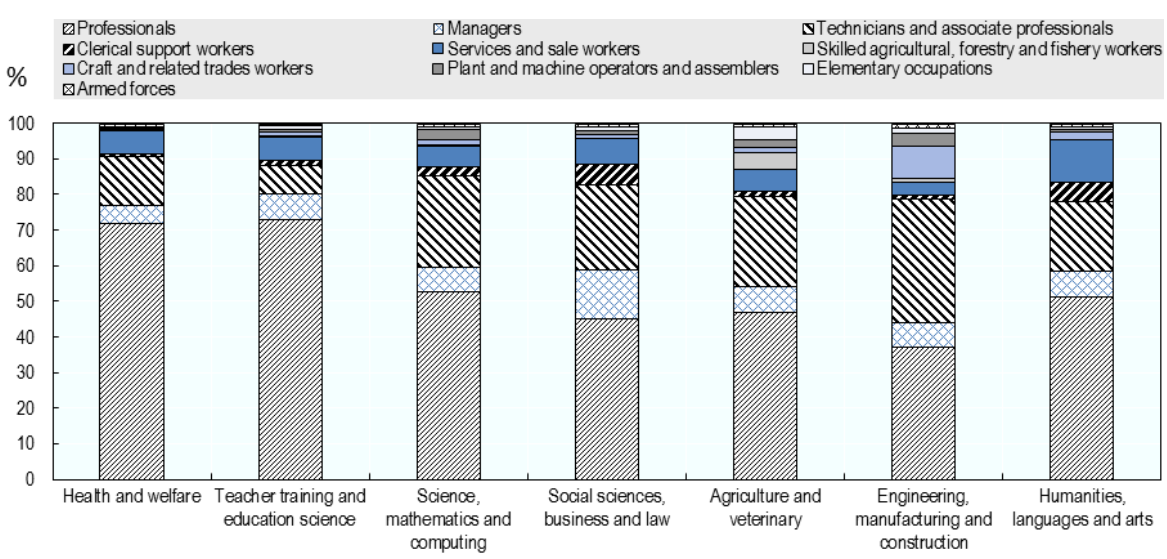
Figure 4.14. Norwegian graduates' use of skills at work, by field of study



Note: The Complex problem solving indicator is taken directly from a questions asked in the background questionnaire of the Survey of Adult Skills. For this variable, the frequency value ranges between 0 (=never used) and 4 (=used daily). The rest of the indicators are derived based on more than one question from the Survey of Adult Skills using the item response theory (IRT) method, and transformed so that these indicators have a mean of 2 and a standard deviation of 1 across the pooled sample of all participating countries.
Source: OECD calculations based on the Survey of Adult Skills (2012, 2015) Database.

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Figure 4.15. Occupations of higher education graduates in Norway, by field of study



Note: Fields of study are ranked by the share of graduates employed as professionals, managers, and technicians and associate professionals.
Source: OECD calculations based on the European Labour Force Survey.

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Labour market outcomes by age, gender and immigration background

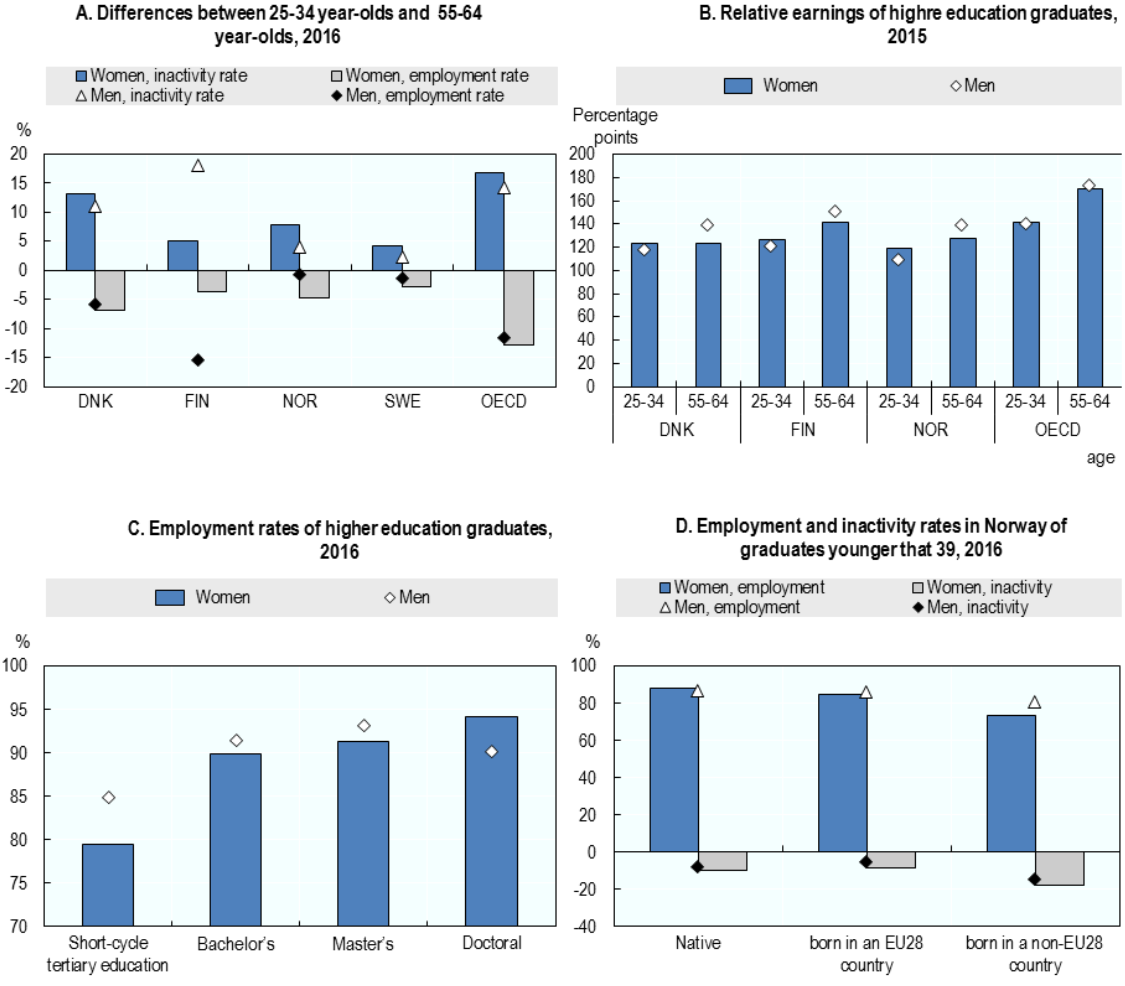
Norway's graduates have some of the highest labour force participation rates across all age groups (Figure 4.16). There is also little difference in employment rates across generations. As in all OECD countries, Norway's older workers have lower employment rates than the general population, but these are relatively high compared to other OECD

countries. Young graduates in Norway also enjoy some of the best employment outcomes, however, as noted above, their earnings premium as compared to upper secondary education graduates is among the lowest in the OECD. Moreover, as in other Nordic countries, the earnings gap between young and old in Norway is small thanks to the compressed wage distribution.

Female higher education graduates do relatively well in Norway. Their participation in the labour market is high and the gender gap is one of the lowest among OECD countries – at times in favour of women (Figure 4.16). Younger Norwegian female graduates (those under the age of 35) earn more than men, but this situation changes with age. In addition, female doctorate holders enjoy consistently higher employment rates than their male peers. High rates of higher education completion among women, egalitarian social values and supportive childcare policies all play a role in the high labour market participation among Norwegian women with a higher education degree (OECD, 2018).

Figure 4.16. Labour market outcomes of higher education graduates

Relative earnings of full-time, full-year workers (upper secondary or post-secondary non-tertiary education = 100)



Source: OECD (2017b), *Education at a Glance*, http://dx.doi.org/10.1787/eag-2017-en; European Labour Force Survey.

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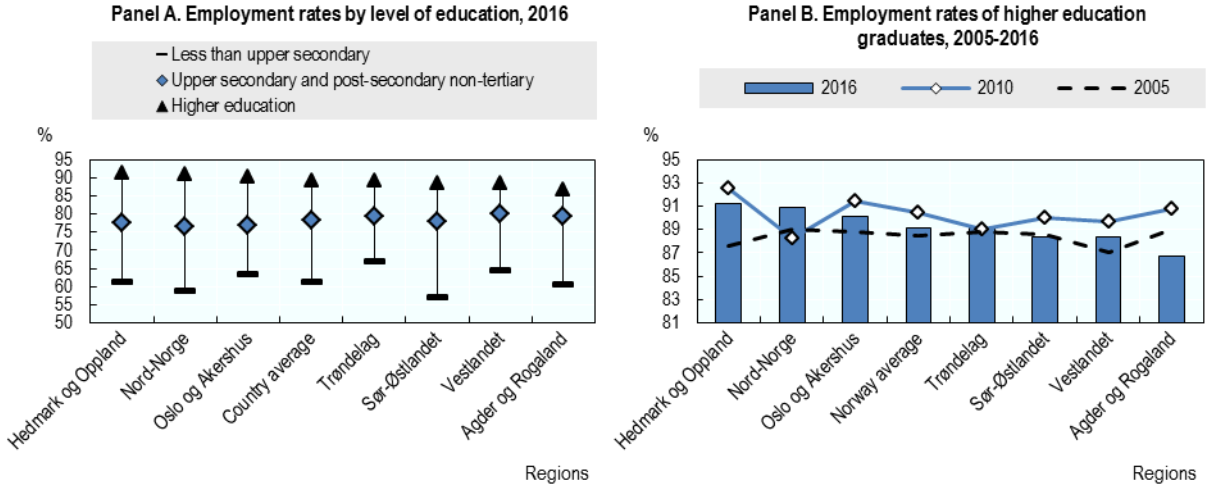
Differences are more distinct between female and male graduates with an immigrant background, and between native and foreign-born graduates (Figure 4.16). The gender gap is largest among those who come from countries outside the European Union, and their employment prospects are also the poorest: only 81% of men and 73% of women are employed. In addition, around one-fifth of non-European graduates do not participate in the labour force. By contrast, younger graduates (less than 39 years-old) who were born in a European country enjoy similar employment rates (86%) as their Norwegian-born peers (87%), regardless of their gender.

Poor proficiency in the Norwegian language could explain higher unemployment rates among graduates with an immigrant background. But the sector of employment seems to matter most. Many graduates with an immigrant background, particularly those from outside Europe, hold degrees in natural sciences and engineering and work in the oil and gas and manufacturing sectors. These sectors have all experienced a sharp drop in employment opportunities following the decline in oil prices – a factor that has also affected graduates born in Norway (Støren et al., 2016a). In contrast, the education and health and welfare sectors, which have enjoyed stable and continuously improving labour market outcomes in Norway, employ relatively few graduates with an immigrant background.

Labour market outcomes by region

Excellent labour market opportunities at the national level in Norway are reflected in equally good outcomes across regions. However, these have fluctuated over time in response to changes in local economies (Figure 4.17). For instance, graduates in the Agder and Rogaland region, where Norway's oil and gas sector is concentrated, have experienced the sharpest decline in employment opportunities due to the recent drop in the oil price. By contrast, the average outcomes of graduates in northern Norway slightly improved between 2005 and 2016, while the performance of Oslo and Akershus remains above the country average.

Figure 4.17. Employment rates of 20-64 year-old higher education graduates in Norway, by region



Source: European Labour Force Survey.

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In general, higher education graduates consistently outperform individuals with upper secondary education, but this relative advantage was the smallest in the Agder and Rogaland region in 2016.

In Norway, the majority of young people (three out of four) leave the region they grew up in to go to higher education, particularly at the master's level (Støren, at al., 2016a). However, few return or move to a different region following graduation. On average, around 50% of graduates remain close to their higher education institution for at least six months after they have completed their studies, even if there is increasing unemployment in the region. As a result, the share of graduates working in jobs not aligned to their qualifications is slightly higher in some regions (Støren et al., 2016a).

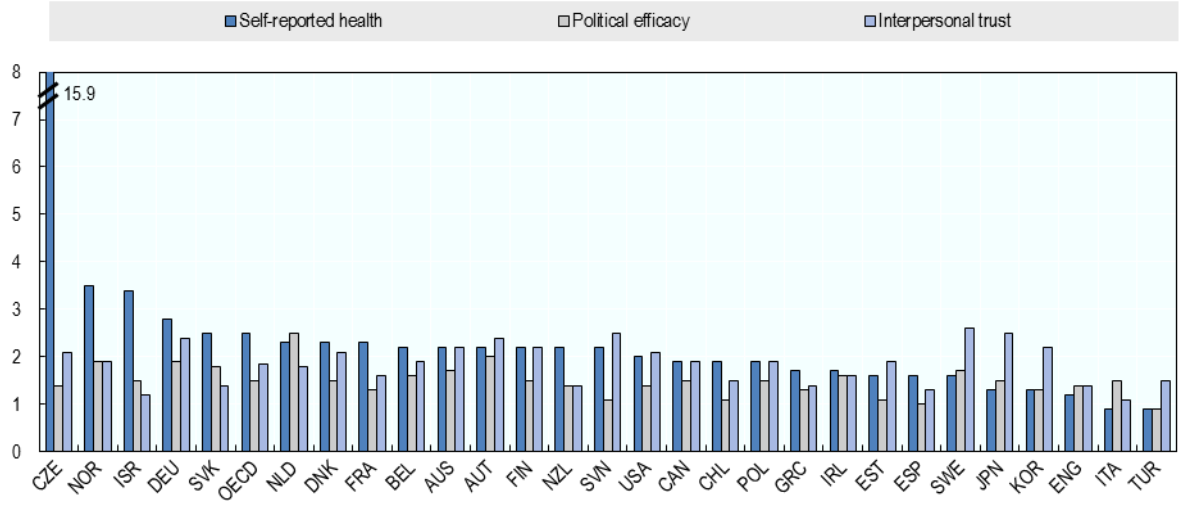
Social outcomes

Norway's higher education graduates enjoy relatively good labour market outcomes, as well as strong well-being and social outcomes. In particular, they are much more likely to report being in good or excellent health than individuals who have completed only upper secondary school. Their levels of interpersonal trust and political efficacy are also relatively high (Figure 4.18).

Figure 4.18. Relative level of self-reported health, interpersonal trust and political efficacy of higher education graduates, 16-34 year-olds

2012 or 2015

Relative probability of reporting to be in good or excellent health and to disagree that "only few people can be trusted" and that "people like me don't have any say about what the government does" (upper secondary education = 1)



Note: The adjusted relative probabilities (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 probability differences are significantly different from 1 for all countries and economies except: Austria, England, Greece, Ireland, Italy, Japan, Northern Ireland, Slovenia, Spain, Sweden and Turkey for "good or excellent health"; Chile, Greece, Israel, Italy, New Zealand, Northern Ireland, the Slovak Republic and Spain for "only few people can be trusted"; Chile, the Czech Republic, England, Estonia, France, Greece, Italy, Slovenia, Spain and Turkey for "people like me don't have any say about what the government does". Data for Belgium refers to Flanders.
Countries are ranked in descending order of the relative level of self-reported health.
Source: OECD calculations based on the Survey of Adult Skills (PIAAC) (2012, 2015).

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Alignment between skills and labour market needs

Higher education graduate skills appear relatively well aligned with current labour market needs. While the number of higher education graduates has grown substantially over the past few decades, they continue to do better in the labour market than individuals who have not attained a higher education qualification on measures of employment and earnings. These results reflect the increasing demand for higher skills in Norway's labour market and the labour market relevance of Norway's higher education system as a whole.

Various actors within the system have a positive view about the labour market relevance of higher education. At higher education institutions, 88% of academics believe that the programmes they deliver provide students with the skills they need to succeed in the labour market; this confidence is also reflected by administrators, where over 9 in 10 feel the same way (Kantardjiev and Haakstad, 2015). In addition, 85% of students consider their programmes relevant or highly relevant for working life (Bakken, Damen and Hauge, 2016). Upon graduation, students' positive view remains, but declines slightly in the first six months (77%) (Støren et al., 2016a).

Compared to other European countries, Norwegian graduates are most likely to report that the skills developed in higher education gave them a good base for transitioning to the labour market. Overall, 80% were satisfied to a high or very high extent with the labour market relevance of their programmes, compared to 61% in Finland, 54% in Germany, and 49% in the United Kingdom. Among the countries that participated in the 2005 graduate survey, Norwegians were also the most appreciative of the education system's role in conveying the skills they need for future jobs (Støren and Aamodt, 2010). These relatively high satisfaction rates in Norway can be largely attributed to the overall strong labour market opportunities in the country. However, certain programme characteristics – academic excellence, content of coursework, links to employers – also play a role (Støren and Aamodt, 2010).

While Norwegian graduates are, in general, highly satisfied with their studies, some differences emerge between institutions. Graduates from specialised institutions such as the Norwegian School of Economics (NHH) and the Norwegian Business School (BI), and from the Norwegian Institute of Science and Technology (NTNU), which is known for its long tradition of collaboration with employers, rated their institutions most highly in terms of the relevance of their programmes for the workforce (Støren et al., 2018).

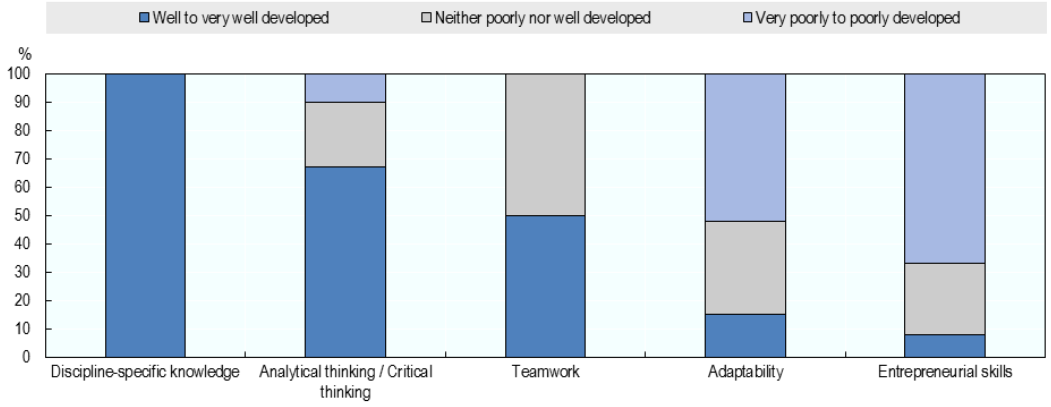
Norway's employers also seem to value the country's higher education system, particularly its role in generating strong discipline-specific knowledge and professional skills. Preliminary results from the first nationwide employers' survey, which assesses the skills of higher education graduates across the system, show employers are generally satisfied with graduates' subject-related knowledge and skills (Støren et al., 2016b). Surveys of employers who hired recent graduates from the NTNU and the University of Oslo also found that they valued the discipline-specific knowledge and skills of graduates most highly (TNS Gallup, 2015; Reymert et al., 2016). These views were reflected in the OECD review workshops with employers, which were conducted in the last quarter of 2017 in Trondheim and Bergen (Figure 4.19).

Transversal skills are very important to employers. In general, employers find that Norwegian graduates leave higher education with the ability to learn on the job and acquire knowledge that is relevant to the business (Støren et al., 2016b). In an NTNU survey, employers praised the oral communication and writing skills of NTNU graduates, as well as their ability to work independently. However, employers said that they would like to see better management skills, greater creativity, better insight and a greater ability to combine ideas from diverse fields (TNS Gallup, 2015). Employers also see a stronger

role for the higher education system in developing adaptability and entrepreneurial skills in students (Figure 4.19).

Figure 4.19. Employers' assessment of how well Norway's higher education system is developing key labour market relevant skills

Percentage of workshop participants who rated the development of each skill



Note: Results are based on the responses of employers participating in two OECD workshops in Bergen and Trondheim. The workshops were organised by the OECD team as part of the in-depth analysis of the labour market relevance and outcomes of Norway's higher education system project.
Source: OECD workshops with stakeholder representatives of Norway's higher education system in Bergen and Trondheim, September 2017.

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Employer satisfaction with graduate skills varies across fields of study. For instance, employers are satisfied with the ability of arts and humanities graduates to work independently and network, but their written communication skills could be better. Natural science graduates reportedly lack good communication and networking skills (Støren et al., 2016b). Employers would also welcome better interdisciplinary knowledge (TNS Gallup, 2015). It should be noted, however, that such assessments are strongly linked to the specific skills requirements for certain occupations.

Employers report that they need graduates with a bachelor's or master's qualification. However, this varies, with some employers reporting a greater need for bachelor's graduates and others for master's graduates (Støren et al., 2016b). The bachelor's qualification is most relevant for the health and welfare sector, while master's and doctoral degrees are required for law and science graduates.

Regardless of level, employers appear satisfied with the skills of graduates. For instance, most employers who hired NTNU graduates (95%) felt that the skills graduates developed at the master's level were relevant or very relevant to their needs, and 83% highly regarded the skills developed at the bachelor's level. More than half of employers surveyed considered doctoral degrees to be relevant (TNS Gallup, 2015).

The relevance of the different levels of study also varies depending on the size of the company and industry (Reymert et al., 2016). The relevance of a bachelor's degree increases with company size and is in high demand in local and regional government, as well as the financial sector. A master's qualification is seen as more important in larger companies and national government. No clear pattern emerges for graduates with a doctoral degree. The profile of companies not looking for graduates with advanced qualifications appears significant: small companies with no growth plans. These insights

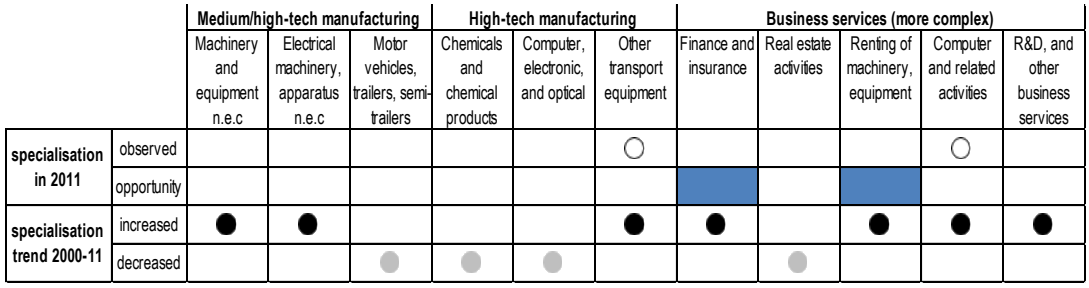
can guide the programme offer and curriculum design at Norway's higher education institutions to continuously enhance the labour market relevance of the system.

Meeting future labour market needs

Globalisation, advances in digital technology, climate change commitments, and demographic change are transforming Norway's economy, and, in turn, its skills needs. New economic sectors and jobs are emerging, while others, particularly the oil and gas sectors, are shrinking. Even within existing occupations, the tasks performed by workers, and the skills needed to carry them out, are undergoing significant change. However, the pace of economic transformation may pose a challenge to the country's education system, which will need to be increasingly responsive in producing graduates with the right mix of skills.

Increased participation in higher education has changed the supply of skills in Norway. More Norwegians than ever are graduating from higher education institutions. The high level of higher education attainment among Norway's adults provides a large pool of relatively skilled labour. This relatively solid base of human capital places Norway in a favourable position to make more of its participation in the global market place and be at the forefront of innovation in services such as finance and insurance (Figure 4.20). However, despite a strong alignment between the skills of adult Norwegians and the skills requirements of technologically advanced manufacturing industries and complex business services, Norway remains among the least specialised OECD economies in these industries, notwithstanding a slight increase since the 2000s (OECD, 2017a).

Figure 4.20. Norway's specialisation opportunities in complex business services and technologically advanced manufacturing industries



Note: The dots in the figure show whether Norway has increased (black circle) or decreased (grey circle) its revealed comparative advantages over the period 2000-11. Revealed comparative advantages (white circle) show the extent to which Norway is specialised in a certain industry within global value chains (or receives more income from its exports in this industry than other countries). Opportunities for specialisation are the results of empirical work developed in the OECD Skills Outlook 2017. Countries have an opportunity to specialise in an industry if there is a good alignment of countries' skills characteristics with the skills requirements of this industry. Several characteristics of skills shape countries' specialisation in global value chains. The extent to which these characteristics are aligned with each industry's skills requirement can be consolidated into one measure showing the specialisation opportunities of each country in each industry.
Source: OECD (2017a), *OECD Skills Outlook 2017*, http://dx.doi.org/10.1787/9789264273351-en.

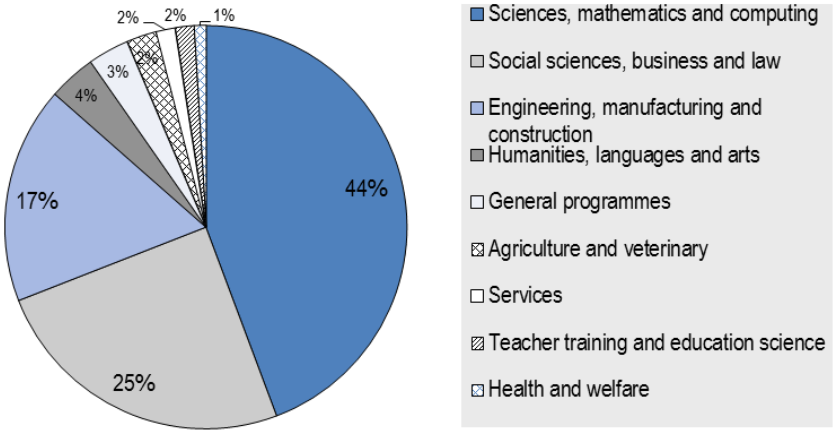
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Norway has increasingly specialised in computer and computer-related services (Figure 4.20). And the widespread use of technology and digitalisation across the economy has provided opportunities for graduates from various disciplines to contribute to the growing ICT sector. In fact, only half of Norway's graduates working in the ICT sector have a background in engineering, technology and sciences (Paunov, Planes-Satorra and Moriguchi, 2017), and 60% of those working as ICT specialists (Figure 4.21).

These results may reflect the comparatively strong problem solving and ICT skills among Norway's graduates from the social sciences, and to some extent arts and humanities, and the transferability of their knowledge and skills to economic sectors beyond their own domains. This should play a key role in innovation and productivity and shape the future labour market.

Figure 4.21. Norwegian higher education graduates working as ICT specialists, by field of study

2013-2015



Note: Based on the ISCO-08 classification, ICT specialists are defined as workers in the following occupations: software and applications developers and analysts (occupation 251); database and network professionals (occupation 252); information and communications technology service managers (occupation 133); information and communications technology operations and user support technicians (occupation 351).
Source: OECD calculations based on the European Labour Force Survey.

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Innovation also requires people with strong transversal and entrepreneurial skills, such as developing new ideas and solutions, the willingness to question ideas and acquire new knowledge, alertness to opportunities, analytical thinking, communication and organisation skills (Avvisati, Jacotin and Vincent-Lancrin, 2013). However, there is a shortage of some of these skills in Norway (Figure 4.22), and the country's higher education system could do more to develop them.

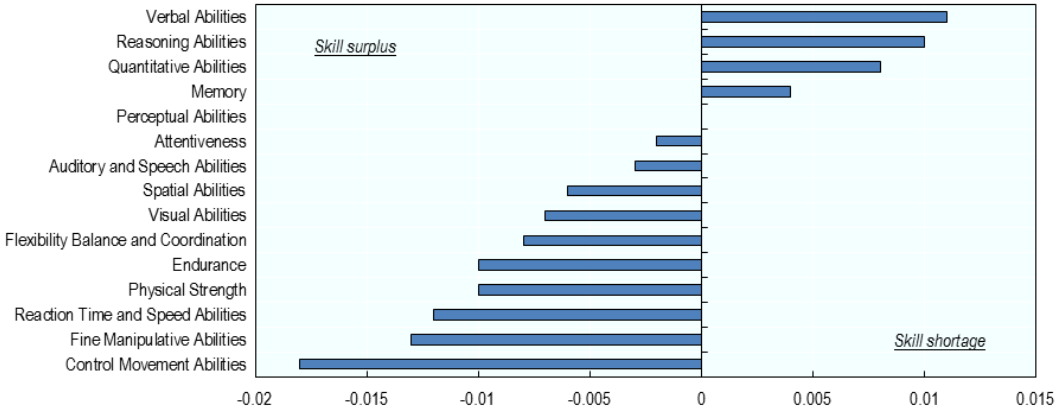
As the Norwegian economy is becoming more knowledge-based and driven by innovation and new technologies, there will also be more demand for advanced skills. Despite the recent increase in the number of graduates from advanced levels of higher education, the share of Norway's adults holding a master's or doctoral degree remains below or at the OECD average.

As Norway's labour market continues to reorganise, people will also need to develop new skills in various fields of study, such as ICT and management, which are targeted and often delivered through short-cycle tertiary education programmes (ISCED 5). The capacity of Norway to deliver these skills could be a cause for concern.

Norway's higher education system is expected to provide a broad range of skills and qualifications, but there are persistent shortages in some areas. In 2015, around 30% of Norwegian employers reported facing difficulties in filling jobs – either due to a lack of candidates, a lack of candidates with the required work experience, or a lack of candidates with the right professional and transversal skills, which is a larger share than many other OECD countries participating in the survey (Figure 4.23). Most difficult to

fill jobs require knowledge and skills that can only be acquired in higher education, such as: engineering and technical skills, finance and accounting, management, teaching, medicine, nursing and other health and welfare related skills.

Figure 4.22. Skills needs in Norway

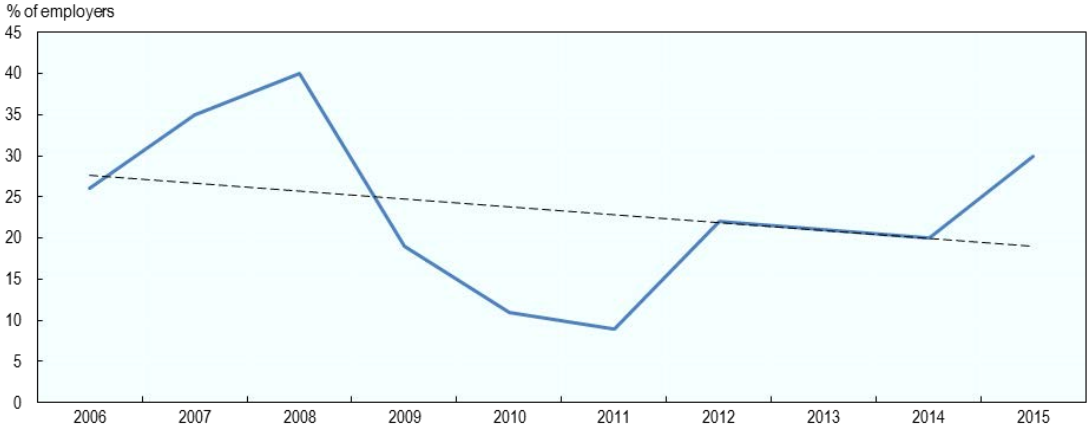


Source: OECD Skills for Jobs Database; OECD (2017c), *Getting Skills Right: Skills for Jobs Indicators*, http://dx.doi.org/10.1787/9789264277878-en.

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Figure 4.23. Skill shortages in Norway reported by employers

Share of Norwegian employers responding affirmatively to the question "How much difficulty are you having filling jobs due to lack of available talent?", 2006-2015



Source: Manpower Group (2015), *2015 Talent Shortage Survey*, https://www.manpowergroup.com/wps/wcm/connect/db23c560-08b6-485f-9bf6-f5f38a43c76a/2015_Talent_Shortage_Survey_US-lo_res.pdf?MOD=AJPERES.

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The generally high motivation among Norway's school pupils to pursue a career as science, engineering or health professionals is a positive step towards solving some of the country's pressing labour market needs. In fact, 25% of Norway's 15-year-olds expect to work in one of these fields (OECD, 2016). However, the relatively low interest in ICT

disciplines deserves the special attention of Norway's government, higher education sector and employers alike, if the country is to become a global player in the field.

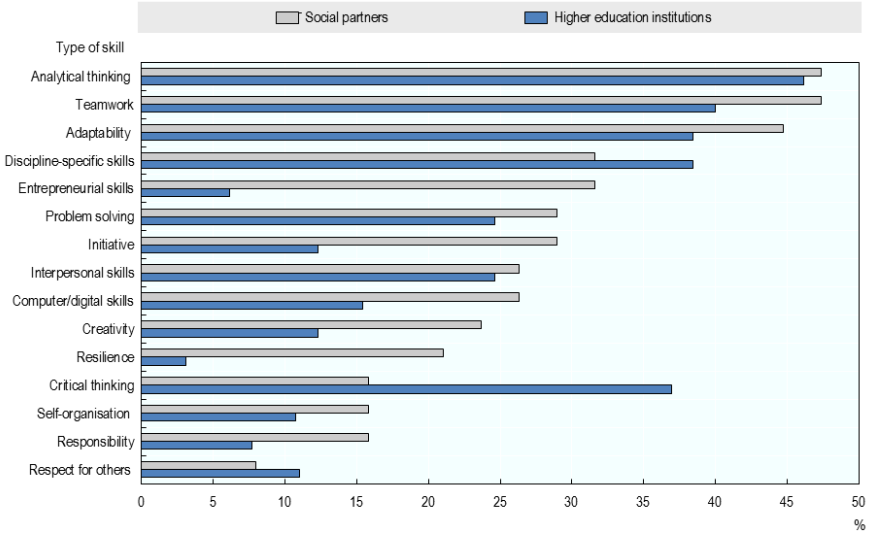
While graduates and employers are largely satisfied with the skills developed in higher education, there are varying views on what skills are needed for the labour market. Importantly, this varies between those working in higher education institutions and social partners. Higher education actors and social partners agree on the need to instil strong analytical skills in graduates (Figure 4.24). The ability to analyse and process information is critically important given the likelihood that knowledge-based jobs will make up a greater share of employment in the future economy.

However, there is less agreement on what other skills will be important to succeed in the labour market of tomorrow (Figure 4.24). Social partners, mainly employers, consider adaptability and the ability to work in a team, as well as entrepreneurial skills, initiative and creativity, as more relevant than the higher education system does. As today's graduates are likely to work in multiple jobs, and possibly have multiple careers, the ability to adjust to different tasks within a given job, use their skills in different ways, and adapt to change is important. However, higher education actors seem to consider discipline-specific skills and critical thinking as more relevant than social partners.

A lack of alignment between what employers expect and what higher education institutions believe is more important highlights the importance of greater co-operation between higher education institutions and social partners. This will be vital to ensuring that the Norwegian higher education system is better attuned to the immediate and changing needs of the labour market.

Figure 4.24. Key skills for the labour market, by type of higher education stakeholder

Share of workshop participants who identified a particular skill as key for the labour market



Note: Each workshop participant selected 5 skills from a list of 33 types of skills. This table presents the 15 most common responses. All other skills were selected by less than 10% of respondents. Social partner results are based on the responses of participants at two workshops (Bergen and Trondheim). Results for the higher education institutions are based on the responses of participants at three workshops (Bergen, Oslo, and Trondheim). The workshops were organised by the OECD team as part of the in-depth analysis of the labour market relevance and outcomes of Norway's higher education system project.
Source: OECD workshops with stakeholder representatives of Norway's higher education system in Bergen, Oslo and Trondheim, September 2017.

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Chapter 5. Enhancing labour market relevance and outcomes through higher education

This chapter examines the prevalence and effectiveness of key practices in Norwegian higher education institutions to support labour market relevance and graduate outcomes. This chapter draws on international and Norwegian research and literature as well as data gathered through OECD workshops with higher education stakeholders.

How higher education institutions support labour market relevance and outcomes of higher education

Higher education institution practices

Skills are vital for all facets of life, including employability, and higher education plays a crucial role in developing the broad range of high-level skills needed to succeed in Norway's labour market and abroad. Higher education institutions can apply various practices to enhance the labour market relevance of their programmes by developing strong professional and transversal skills, facilitating the transition to the labour market, and helping students complete their studies and gain a qualification, which in turn helps improve graduate outcomes (Table 5.1). Institutions can also collaborate with social partners to produce graduates with skills that are well aligned with the current needs of the economy and that will help them adapt to changing skills requirements in the future.

Prevalence and effectiveness of higher education institution practices

Over the past 20 years, various government and sector-led reforms in Norway have encouraged and facilitated the use of higher education practices that support the labour market relevance of the system and labour market outcomes of graduates as part of a larger effort to enhance the quality of higher education. Institutional practices, such as innovative learning and teaching approaches, academic support services, internationalisation, extracurricular activities, and student admission procedures, have been identified as some of the most effective practices for developing labour market relevant skills (Minocha, Hristov and Reynolds, 2017; Mason, Williams and Cranmer, 2009). However, despite being considered effective, these practices do not appear to be used systematically across the higher education system (Figure 5.1). It should be noted that the use of different practices varies by programme and institution, which makes it difficult to arrive at an assessment of the entire Norwegian higher education system.

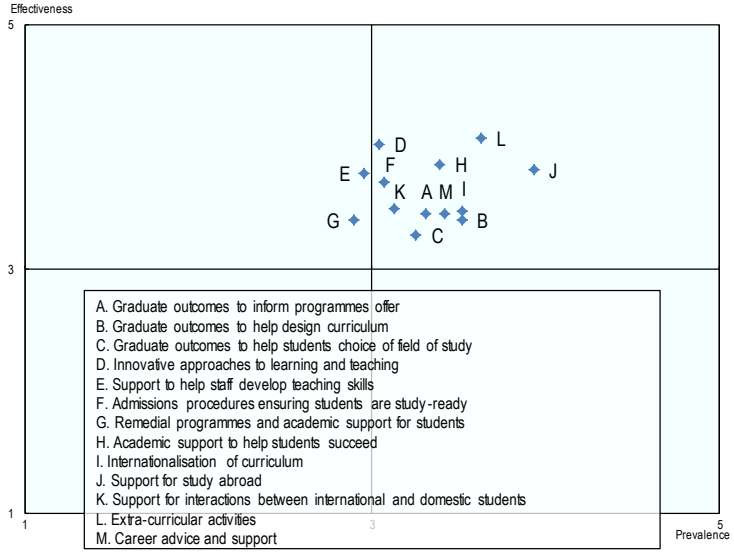
Table 5.1. Higher education practices to support labour market relevance and outcomes

Practices	Labour market relevance and outcomes of higher education
Use of labour market relevant information by institutions to select programmes to offer and to inform curriculum design	Helps ensure students are enrolling in programmes that are more likely to lead to good labour market outcomes. Helps ensure students are developing skills that are valued in the labour market.
Provision of labour market relevant information by institutions to help prospective students make informed choices about field of study	Guides students' choice of study towards programmes with positive labour market outcomes and/or learning processes better aligned with a student's abilities and aspirations.
Student admission procedures to help ensure students are better prepared for higher education and well matched with their programmes	Helps ensure students have the baseline skills needed to succeed in their study programme and develop a good understanding of knowledge and skills related to the field of study. Increases completion of higher education.
Academic support for students to develop work-relevant skills and for those who are less well prepared to succeed in higher education	Helps ensure students succeed in their programmes, complete their studies and gain qualifications.
Innovative learning and teaching	Develops professional and transversal skills that support good labour market outcomes for higher education graduates.
Internationalisation of the curriculum and student mobility	Develops transversal skills, including knowledge of other societies, languages, cultures and business methods, resilience, and cross-cultural competencies and sensitivities.
Extracurricular activities on campus	Develops transversal skills, including leadership, communication and teamwork.
Career guidance for students close to graduation (and graduates)	Facilitates student's transition to the labour market.

Source: OECD (2017a), *In-Depth Analysis of the Labour Market Relevance and Outcomes of Higher Education Systems: Analytical Framework and Country Practices Report*, Enhancing Higher Education System Performance.

Figure 5.1. Assessment of the prevalence and effectiveness of higher education institution practices in Norway

Prevalence scale (1=Not at all common, 3= Somewhat common, 5=Very common); Effectiveness scale (1=Not at all effective, 3=Somewhat effective, 5=Very effective)



Note: The average score of effectiveness and prevalence for each practice is calculated based on the answers of higher education institution representatives who participated at three workshops in Bergen, Oslo, and Trondheim in September 2017. The workshops were organised by the OECD team as part of the in-depth analysis of the labour market relevance and outcomes of Norway's higher education system project.
Source: OECD workshops with stakeholder representatives of Norway's higher education system in Bergen, Oslo and Trondheim, September 2017.

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Labour market information to inform mix of programmes and curriculum

Norway's higher education institutions have significant autonomy in deciding which programmes and student places to offer and in the design of the curriculum. This influences the supply of key skills to the labour market. For instance, when the supply of skills is informed by labour market information, including future skills requirements and graduate outcomes data, it can help maximise a student's ability to graduate with relevant skills and successfully transition to the labour market.

All higher education institutions in Norway are required to assess the labour market demand for graduates from their programmes in consultation with social partners, as per the Academic Supervision Regulations (Kantardjiev and Haakstad, 2017). As such, labour market outcomes play a role in the Norwegian Agency for Quality Assurance in Education's (NOKUT) accreditation processes and in programmes at self-accrediting institutions.

However, labour market outcomes and relevance is only one of the criteria used in assessing the quality of a programme. A programme can be accredited and continue to be offered by an institution even if there is little demand for its graduates in the labour market. There is little evidence that higher education institutions in Norway use labour market information systematically to shift programme provision, especially in regard to terminating programmes with poor labour market outcomes (Productivity Commission, 2015).

Higher education stakeholders in Norway expressed concern about relying too heavily on labour market information when developing and designing programmes since graduate employability is not the only goal of higher education. This also reflects the fact that, on average across the OECD and in Norway, higher education graduates enjoy good labour market outcomes, regardless of field of study (OECD, 2017a).

Institutional labour market information to help students make an informed choice

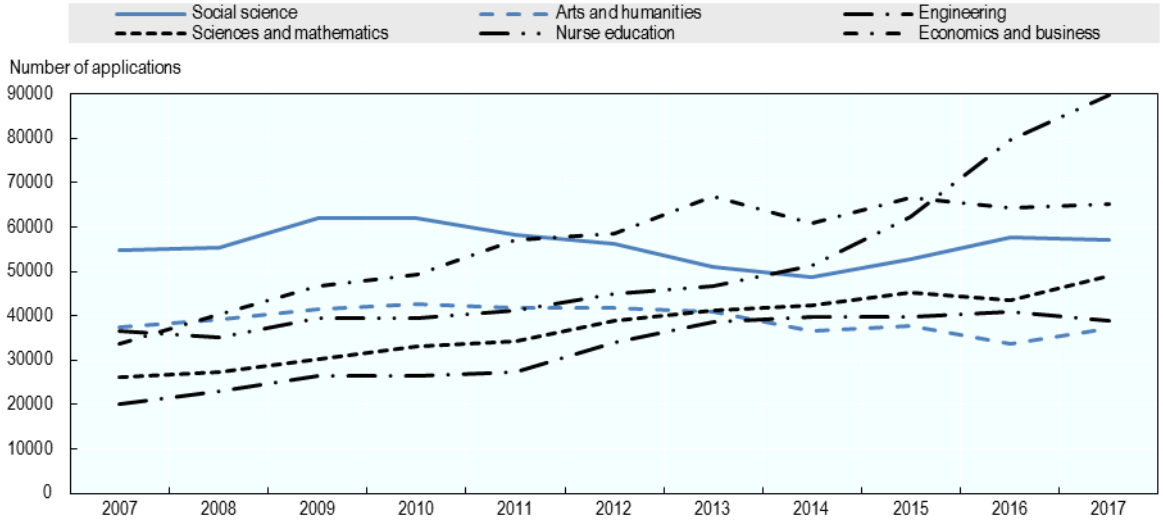
Prospective students can get graduate outcomes data from the biennial graduate survey conducted by the Nordic Institute for Studies in Innovation, Research and Education (NIFU) and ad-hoc surveys conducted by higher education institutions. These graduate surveys rely on the self-assessment of graduates regarding the labour market relevance and outcomes of programmes and institutions. They provide information on employment outcomes following graduation, as well as describe the quality of jobs, the length of the job search, graduates' job satisfaction, and the alignment between graduates' skills and job requirements (Schomburg and Teichler, 2011). The graduate survey also collects some information about the content of programmes, including the learning and teaching process, and the graduate's assessment of the knowledge and skills they gained in higher education. However, information at the institutional level is only available through surveys administered by individual institutions, such as those conducted by the Nord University and the Arctic University of Norway (Kantar TNS, 2017; Rambøll Management Consulting AS, 2013). NIFU publishes a range of this data at the institutional level, but it does not publish graduate labour outcome data by institution.

In addition, some institutions, notably the University of Oslo, the University of Bergen and the Norwegian University of Science and Technology (NTNU), survey employers on how well their graduates perform in the labour market, the skills employers need, and their views on how well developed these skills are among their graduates. These one-off surveys of employer satisfaction often focus on specific programmes and are not conducted systematically across the system. NIFU is currently conducting a pilot nationwide employer survey that aims to assess the skills of higher education graduates across the system.

However, it is unclear to what degree Norwegian students make decisions about choice of study programme based on institutional level data. Although they do appear to be somewhat sensitive to information about changes in the labour market (Figure 5.2). For instance, interest in oil-related studies dropped very quickly in the wake of declining oil prices, and has been replaced by a preference for information and communication technology (ICT) fields of study. Applications in nursing programmes have been steadily increasing in line with Statistics Norway's projections of continuous demand. Students have also shown increased interest in engineering fields of study where private sector employers report ongoing skills needs and business and economics programmes, which are associated with entrepreneurial, digital and advanced ICT competencies. In contrast, fields of study such as arts and humanities and social sciences, which have relatively weaker labour market outcomes on average, have seen a modest decline in applications over the past ten years.

Figure 5.2. Applications to bachelor's programmes in Norway

2007-2017



Source: Database for Statistics on Higher Education (DBH), Norwegian Centre for Research Data.

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Student admissions processes

Student admissions processes can help ensure students are better prepared for higher education and well matched with their programmes, which can make a difference to labour market outcomes. This is becoming increasingly important as Norway's higher education institutions, similar to other OECD countries, are facing a much more diverse student population in terms of academic ability, motivation, engagement and preparedness. Generally, students who are admitted based on previous strong academic results and completion of relevant pre-requisite courses and/or working experience are more likely to be better prepared for higher education and graduate with strong skills.

Norway's higher education institutions set their own admission standards for master's and doctoral programmes to ensure that students have the skills needed to succeed in their studies, but this is not the case at the bachelor's level. For many bachelor's level programmes, and for some integrated master's programmes, the admissions requirements are set out in the national regulations on admission to higher education, and the sole

criterion for entry is the upper secondary school certificate (*Generell studiekompetanse*) (Norwegian Universities and Colleges Admission Service, 2018).

Higher education institutions can request supplementary criteria for entry to specific bachelor's and integrated master's programmes. Additional criteria for programmes may include the successful completion of specific pre-requisite subjects and/or certain grades in upper secondary school, entry exams, past work experience, motivation letters and references. These additional requirements are established by the Ministry of Education and Research in consultation with higher education institutions. Although Norwegian institutions see themselves better placed to set admission standards, requests to impose standards for bachelor's and integrated master's programmes are rarely met by the ministry in the interest of maintaining a simplified and egalitarian admissions process, as noted in meetings with the OECD review team.

Generally, additional requirements are more common in the performing arts and technology programmes. For instance, the Inland Norway University of Applied Science requires applicants to the Television Leadership bachelor's programme to submit a resume, motivation letter or a short motivation video describing their suitability for the programme.

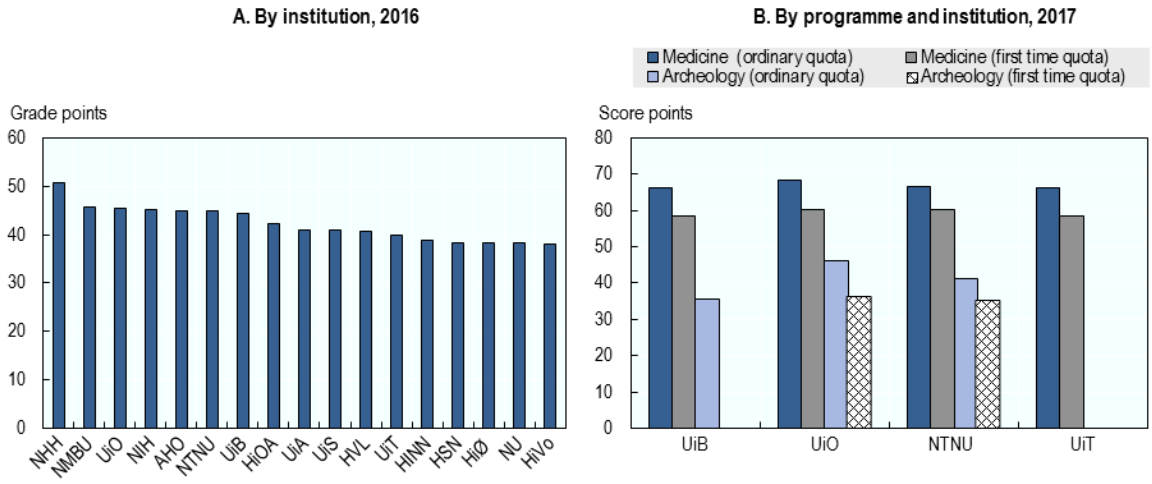
The Norwegian Universities and Colleges Admission Service co-ordinates admission to bachelor's programmes. The Admission Service assigns points to applicants based on their grades in upper secondary school, as well as other factors, such as the types of courses they have taken and, in some cases, age, gender, prior higher education and past service in armed services or public administration (Norwegian Universities and Colleges Admission Service, 2018).

Students are admitted to bachelor's programmes based on a points scale within quotas – first-time (for students who have just completed their upper secondary education) or ordinary (for all other applicants) (Figure 5.3). The minimum points required to enter a programme is not pre-determined, but depends on the number of applicants. If demand exceeds the number of places offered, institutions will only take the "top" students within the quotas. Students with the highest points are therefore more likely to be offered a place in their preferred programme and institution. As a result, popular programmes, such as medicine, dentistry, and architecture, and popular institutions in Norway are highly competitive and selective.

If the demand for places in a programme is low, institutions must offer a place to all the applicants within the quota, regardless of their points. However, many of those students who receive lower points through the admissions process, and are able to enrol in less selective programmes such as early childhood teacher education, history and other humanities fields of studies, mathematics, nursing, and sports, may not be very well prepared for higher education (Figure 5.4) (Lid, Pedersen and Damen, 2018).

Poor skills at entry to higher education, low motivation and readiness to learn, and the inability to integrate into the environment of a higher education institution can discourage some students from continuing their education, which can have significant consequences for students, institutions, and the labour market (Hovdhaugen, 2011). One in five Norwegian students who drop out of higher education had fallen behind in their studies, while 8% find their study programme too difficult (Hovdhaugen, 2011). While there may be various reasons for dropping out of higher education after falling behind in studies, finding the programme too difficult is certainly related to academic preparedness.

Figure 5.3. Admission point scores for bachelor's and integrated master's programmes in Norway



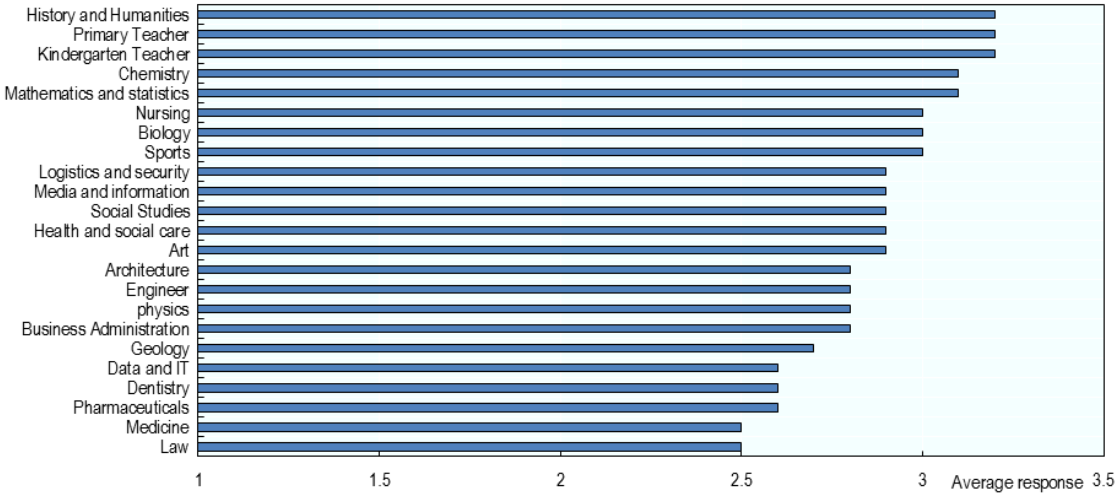
Note: Panel A presents the average grade for admission to the listed institutions for term one 2016, which is calculated by dividing the sum of the grades from upper secondary school of all admitted students to a certain institution by the total number of students admitted. Panel B shows the minimum score points needed for entry to a study programme in 2017. The points for the first-time quota are based on the grades from upper secondary education; for the ordinary quota, they are a combination of upper secondary school grades and additional points. When no points are denoted in the chart, the programme admitted all applicants and thus there was no minimum score required.

Source: Database for Statistics on Higher Education (DBH), Norwegian Centre for Research Data; Norwegian Universities and Colleges Admission Service (2018), "Studieoversikten 2018", https://sok.samordnaopptak.no/#/studies.

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Figure 5.4. Norwegian students who lack sufficient knowledge and skills to succeed in higher education, by field of study

2017



Note: The average response of academic staff takes values from 1 (=strongly disagree) to 5 (=strongly agree).

Source: Lid, Pedersen and Daman (2018), Underviserundersøkelsen 2017: Hovedtendenser, https://www.nokut.no/globalassets/studiebarometeret/underviserundersokelsen/lid_pedersen_damen_undervis erundersokelsen-2017_hovedtendenser_2-2018.pdf.

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Academic support for students

More diverse students and greater variability in academic ability, preparedness for higher education, motivation and engagement also require greater levels of academic and remedial support than may have been required under the elite higher education systems of the past. Introductory and orientation periods integrated into the curriculum, as well as other approaches such as targeted academic advice, help in academic writing and oral communication skills, peer mentoring and tutoring, can significantly help students as they progress in their studies (Box 5.1). The benefits of these approaches can be seen in increased retention in higher education (Bettinger and Baker, 2011).

Norway has failed to expand its academic support and mentoring services for students as quickly as student participation in the system. Apart from the welcoming events and information meetings for new students, higher education institutions do not have established structures to offer systematic guidance to students. Some 40% of staff report that this is due to a lack of time, and 28% see the need for better resources and procedures (Lid, Pedersen and Damen, 2018). Norway's institutions particularly lack an integrated approach to supporting disadvantaged and vulnerable students, who are at the highest risk of not completing their studies (European Commission/EACEA/Eurydice/Cedefop, 2014).

During meetings and workshops with the OECD review team, representatives from Norway's higher education institutions suggested that better student awareness of existing academic support services and early intervention, including through the more effective use of study contracts, could help more students receive timely support in the course of their studies.

Innovative learning and teaching

Motivated academic staff using innovative approaches to learning and teaching play an invaluable role in generating strong skills that support good labour market outcomes for higher education graduates. Meetings and workshops with the OECD review team and representatives of higher education stakeholders bring similar insights from Norway. The traditional approach to higher education teaching has long been for an experienced academic staff member to provide a lecture that imparts knowledge to students. However, alternative approaches to learning and teaching can help raise skills and support the development of transversal skills via group activities, oral presentations, and problem-solving scenarios as students develop professional and technical skills (Hénard and Roseveare, 2012). This is not to say that traditional forms of learning cannot be effective techniques in developing labour market relevance, but they need to be deployed in conjunction with other student-centred approaches (Damşa, et al., 2015).

The Norwegian Quality Reform of 2003 assigned greater autonomy and more responsibility to higher education institutions for the quality of their teaching and research. It encouraged the use of active learning and assessment methods, new grading schemes, and individual education plans to follow student progress more closely (Damşa, et al, 2015). Prior to the reform, lectures were the most common form of learning, and still remain so today, but Norway's institutions have been experimenting with some alternative forms, such as group work and project or problem-based learning (Figure 5.5, Panel A).

Following the 2003 Quality Reform, almost half of all academic staff reported medium to large changes to the structure and teaching practices of programmes. These changes were most pronounced in the humanities, law and social sciences, and least in the engineering and sciences (Michelsen and Aamodt, 2006). Overall, the reform resulted in a greater use of seminars and assignments as learning and teaching methods (Figure 5.5, Panel B).

Box 5.1. Mentoring and support services for students to complete higher education in Europe and Canada

As part of the framework for co-operation in education and training (ET2020), the European Commission and the Council of the European Union have identified completion of higher education as a shared priority and encourage the provision of academic and non-academic support services to students (European Commission, 2015).

Some countries have mandated support for first-year students across the system. For instance, Austrian universities have been offering a mandatory one-year introduction courses to new students, called StEOP or *Studieneingangs* and *Orientierungsphase*, since 2011. These introductory courses are embedded in the curriculum and range between 4 and 30 ECTS. They provide a general overview and introduction of the topics students will encounter during the course of their studies. The completion of the StEOP courses is a pre-requisite to continue the study programmes, and student performance is assessed through exams (European Education Directory, n.d.; European Commission, 2015).

Another approach to supporting students to complete their studies is the use of peer support, whereby senior students and staff assist new students in adjusting to student life, both academic and social. Sheffield University hosts one of the largest peer mentoring schemes in the United Kingdom, which aims to support students in their transition into higher education, reduce withdrawal in the first semester and enhance new students' sense of belonging. The programme is certified by the Mentoring & Befriend Foundation, and is considered to be highly effective. It follows a structured format where mentors receive ongoing training and can compete for Sheffield's Graduate Award (an award supported by top employers that recognises extracurricular activities). Sheffield University's mentoring programme is a university-wide project centralised within the Student Services Department. There is a designated co-ordinator in each of the 40+ departments who supports the promotion, selection and recruitment of new mentors and mentees. The programme is available to all newcomers. Mentors assist students with: managing time, workload, and personal finances; adapting to shared spaces; and living away from home. Service provision is undertaken via an online hub, from application to selection to the actual maintenance of the programme, with much of the matching process being automated (Thomas, 2012).

Outside Europe, the University of Guelph in Canada is seen as a leader in delivering student support services through its peer-helper programmes, with 200 peers in 30 units across the institution (Desmarais et al, 2013). Senior students in the programme develop and present workshops, plan events, develop programmes, and create resources for incoming students. Most importantly, they act as a contact person for students and check-up on students assigned to them to address any challenges that may arise at an early stage. The senior students providing peer support receive an annual honorarium, and participation in the programme is included in their academic transcripts, which acknowledges their role as student leaders (Quality Assurance Agency for Higher Education, 2010).

Sources:

Desmarais, S. et al. (2013), *The Peer Helper Program at the University of Guelph: Analysis of Skills Objectives*, Higher Education Quality Council of Ontario.

European Commission (2015), "Improving completion in higher education: Key findings", Summary of the Improving completion in higher education: ET2020 – Country Focus Workshop, 24-25 September, Vienna, Austria.

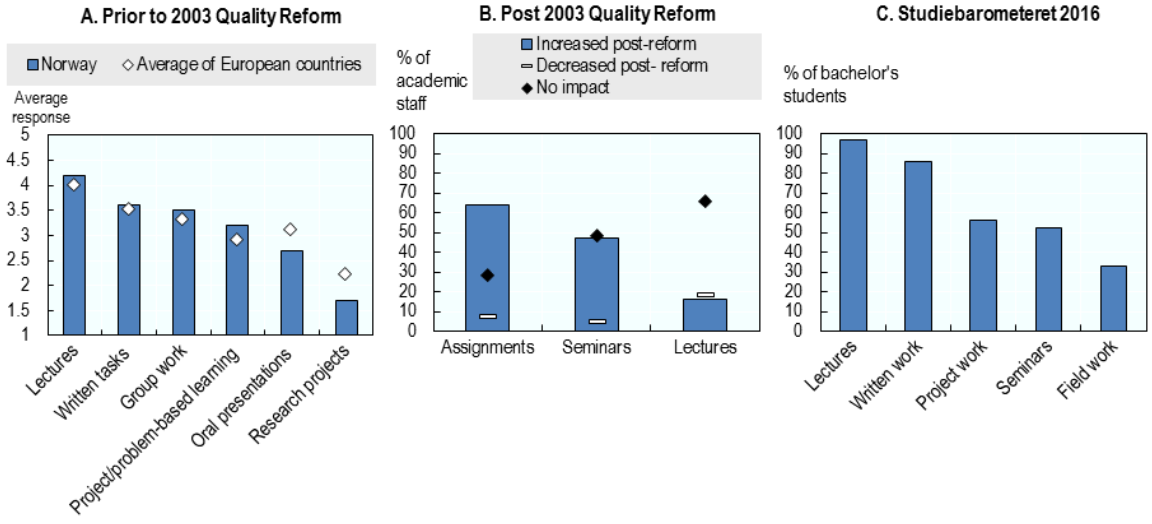
European Education Directory (n.d.), "Austria Higher Education System", European Education Directory EuroEducation.net website, http://www.euroeducation.net/prof/ausco.htm (accessed on 20 March 2018).

Quality Assurance Agency for Higher Education (2010), *International Benchmarking: Student Support Services*, Quality Assurance Agency for Higher Education, Scotland, http://www.enhancementthemes.ac.uk/docs/case-studies/uk-and-international-case-studies-of-practice-in-student-support.pdf?sfvrsn=18.

Thomas, L. (2012), *Building Student Engagement and Belonging in Higher Education at a Time of Change*, Paul Hamlyn Foundation, Higher Education Funding Council of England, Higher Education Academy, and Action on Access.

The White Paper on Quality Culture in Higher Education (Meld. St. 16, 2016-2017) reinforced the importance of using active learning and teaching approaches to complement traditional lectures for developing strong skills, since the use of these methods is not as prevalent as previously envisaged. In 2016, lectures and written assignments remained the most common forms of teaching in contrast to active learning approaches, such as project work, seminars and field work (Figure 5.5, Panel C). Although student satisfaction with teaching and guidance in higher education has gradually increased to reach 55%, the lack of feedback from academic staff is further a concern (Hamberg, Damen and Bakken, 2017).

Figure 5.5. Use of learning and teaching methods in Norway's higher education system



Source: Støren, L.A. (2008), *Høyere utdanning og arbeidsmarked – i Norge og Europa: Norsk rapportering fra EU-prosjektet «REFLEX»*, https://brage.bibsys.no/xmlui/handle/11250/281914; Michelsen, S. and P.O. Aamodt (eds.) (2006), *Evaluering av Kvalitetsreformen. Delrapport 1: Kvalitetsreformen møter virkeligheten*, https://brage.bibsys.no/xmlui/handle/11250/279221; Damen M.-L. et al. (2017), *Studiebarometeret 2016: hovedtendenser*, www.nokut.no/globalassets/studiebarometeret/2017/studiebarometeret-2016_hovedtendenser.pdf.

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Norwegian higher education teachers have a more positive view of the use of innovative learning and teaching approaches: three-quarters of higher education teachers report using teaching methods that stimulate students to actively participate in class and two-thirds consider that students are exposed to a variety of teaching approaches (Lid, Pedersen and Damen, 2018). The presence of both a broad range of teaching methods and engaging practices appears especially common in the arts, architecture, teacher education and media and information programmes (Lid, Pedersen and Damen, 2018).

Active involvement of students in research activities across all levels of higher education, including bachelor's programmes, also develops strong transversal and professional skills and enhances students' employability. While Norwegian academic staff largely use research to inform their teaching and convey new findings to their students, they rarely expose students to actual research activities. Only 16% of academic staff report involving bachelor's students in research, this figure rises to 37% for master's students (Lid, Pedersen and Damen, 2018).

Technology has also the potential to engage students in ways previously not possible and allows for individualised learning and teaching, which can enhance learning outcomes.

Examples of learning and teaching methods that benefit from adequate technologies include project-based learning and games for learning, and group work (Falch and Mang, 2015). Some Norwegian higher education institutions are already using these innovations in their curricula: the Inland Norway University of Applied Sciences is experimenting with flipped gaming, the Norwegian University of Science and Technology is establishing a link between social media and online gaming, and the Nord University is using game labs. However, overall such methods are not widespread across the system (Damen et al., 2017).

The majority of Norwegian students find the use of digital tools important as they provide the freedom to study when and where it fits best and helps with new ways of learning. Students are, however, less positive about whether technology use can enhance the quality of education and increase motivation and learning efforts (Damen et al., 2017). These results point to the fact that not technology itself, but the way it is applied determines the outcome.

To fully benefit from student-centred approaches to learning and teaching, academic staff need to act as a guide and supervisor to students and their learning experience. This is particularly the case for students who are less well prepared for higher education and who may struggle in such learning contexts. Students often need help in refining assignments, hypotheses, and arguments. And while engaging students in collaborative discussions and peer learning instils important transversal skills, teacher-led activities in lectures or online environments remain more efficient for the introduction to themes and transmission of theoretical knowledge (Damşa, et al., 2015).

Internationalisation of the curriculum and student mobility

Transversal skills can also be acquired through a study period abroad that involves studying in a foreign language, enrolling in subjects that follow an international curriculum, and interacting with international students. Undertaking part of a higher education programme in another country can particularly help students develop resilience, tolerance, confidence, decision-making skills, cross-cultural competencies, and communication skills, as well as foreign language skills. These are important skills that could potentially enhance graduates' labour market outcomes.

Norway's higher education institutions are putting significant efforts into sending students on an exchange period, which makes support for study abroad the most common institutional practice within the system (Figure 5.1). Over the last decade, Norwegian institutions have signed 450 articulation agreements with institutions abroad, the majority of which are within Europe through the European Union's Erasmus programme and its follow-up initiative. As a result, the majority of Norwegian students who undertook an exchange study period at the master's and doctorate level in 2014 went to a European country: 29.2% in Denmark, 18.1% in the United Kingdom and 12.7% in Hungary (OECD, 2017b). The number of exchange students to the United States was also significant (6.3%), but has been on the decline since the depreciation of the Norwegian krone in the last quarter of 2014, which made tuition in the United States more expensive (Norwegian Ministry of Education and Research, 2017a).

By OECD standards, Norway has one of the highest shares of national students studying abroad, but it remains below the European Higher Education Area (EHEA) target of 20% student mobility. Among the 44 600 graduates of Norway's higher education system in 2016, 15.4% participated in an international exchange during their studies, and 7% were degree students. Norway's longer-term goal is that at least half of all students spend a study period abroad, which will require the integration of student mobility into degree programmes (Norwegian Ministry of Education and Research, 2017a).

International student mobility varies by level of education and field of study, and strongly depends on the support structures for study abroad. Students in integrated master's or long professional programmes, such as medicine, veterinary, psychology and theology, appear to be the most mobile (Norwegian Centre for International Cooperation in Education, 2016), while those studying in shorter programmes and at the bachelor's level appear to be uncertain about the added value of an international exchange. In general, established partnerships with institutions abroad, structures in the Norwegian higher education institution which systematically encourage exchange, and the student financial assistance programme are seen as key drivers of international mobility (Norwegian Centre for International Cooperation in Education, 2016).

However, the labour market benefits of studying abroad for Norwegian students remain uncertain. A semester spent abroad does not appear to have an immediately positive effect on the career prospects of Norwegian graduates at home (Støren et al., 2016). Moreover, at the beginning of a professional career it may take graduates longer to find employment in Norway with a degree acquired abroad because they do not have a domestic network of contacts. However, these graduates go on to enjoy higher salaries and more international jobs in Norway than students who did not study abroad, although it is not clear to what extent these are the results of the study abroad itself, or whether they are due to different forms of selectivity, such as a student's performance, previous international experience and background features (Wiers-Jenssen, 2011).

However, there is more to student mobility than individual career outcomes. The added value of studying abroad, such as the acquisition of language skills, cultural competencies and personal challenges, are generally highly appreciated by Norwegian students (Saarikallio-Torp and Wiers-Jenssen, 2010). Moreover, there are positive effects at the institutional level and macro level, such as internationalisation of higher education institutions, increased cross-cultural awareness, and cross-nation economic contacts (Wiers-Jenssen, 2011). As such, student mobility in Norway needs to be further encouraged and promoted to attract more students from a lower socio-economic background and limited international experience and contacts.

As the large majority of Norwegian students (four out of five) do not study abroad as exchange or degree students, it is important to integrate international dimensions into the formal and informal curriculum at Norwegian institutions to help all students develop cross-cultural competencies and knowledge. Internationalisation can bring major benefits to Norway, but this process is not automatic (Norwegian Centre for International Cooperation in Education, 2016).

Degree programmes and courses taught in English in Norway's higher education institutions have rapidly increased over the last decade, with around 6 000 English-taught courses in 2016 (Norwegian Ministry of Education and Research, 2017a). This represents around 20% of all courses on offer, albeit the courses are offered predominantly at the master's and doctorate level, (Norwegian Ministry of Education and Research, 2017a). This is high by international standards and a major factor in attracting international students to Norway. By contrast, bachelor's programmes taught exclusively in English are rare (Norwegian Centre for International Cooperation in Education, n.d.); some bachelor's programmes include subjects in English, but Norwegian is the predominant language for both classroom instruction and study materials.

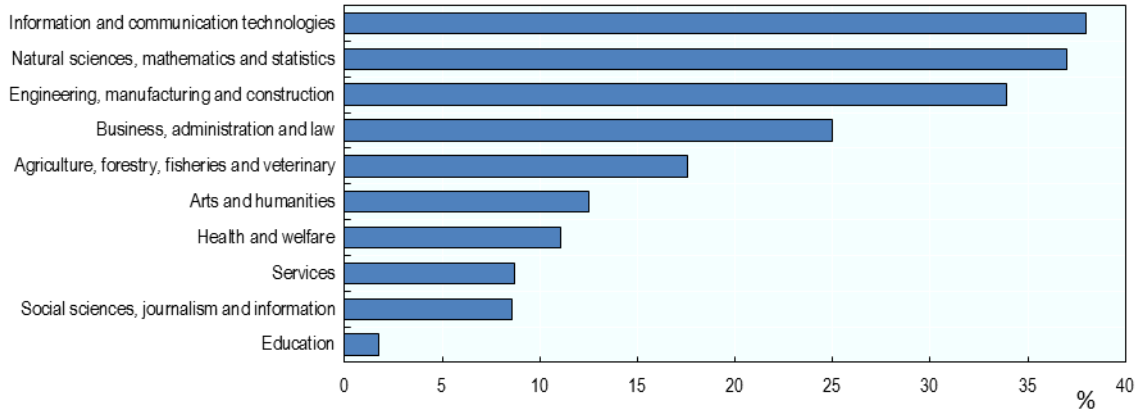
Closely linked to courses offered in English are joint degree programmes between Norwegian and foreign institutions (40 programmes in 2016), particularly at the master's level. The NTNU and the universities of Oslo and Bergen provide most of these programmes, and as such are natural magnets for students from abroad.

However, on the whole, Norway has difficulty in attracting international students to its higher education institutions. The lack of a nationwide strategy to promote Norway as a study destination, the limited offer of English-taught programmes at the bachelor's level, and the rather small scale of research output put Norway at a relative disadvantage in attracting international talent compared to other small non-English speaking economies, such as the Netherlands, despite tuition-free education. In fact, Norway has one of the lowest proportions of international students across all levels of higher education among OECD countries, especially at the bachelor's level. Some 25% of these students report that Norway was not their first choice of study destination (Norwegian Centre for International Cooperation in Education, 2016). In addition, not all of these students are necessarily the top performers in their countries of origin, and Norwegian academics find it challenging to customise study programmes for these students (Damşa, et al., 2015).

Nonetheless, many of these students, particularly at the doctoral level, are enrolled in fields of study that are in demand in the labour market and, as a result, they could help meet some of the demand for quantitative and entrepreneurial skills in Norway (Figure 5.6). Despite overall low numbers of international students, the number of international doctorate students in Norway has been growing continuously since the 1990s. This reflects the increased appeal of Norwegian higher education institutions as research locations, the collaborative Norwegian working environment, and the remuneration offered to doctoral students (OECD, 2017b).

Figure 5.6. International doctoral students in Norway, by field of study

As a percentage of the overall cohort, 2015



Source: OECD (2017c), OECD Education at a Glance, http://dx.doi.org/10.1787/eag-2017-en.

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While international students are generally highly satisfied with the knowledge and skills they acquire and the learning and teaching environment in Norway, there is room for improvement. Only one out of four international students interacts daily with Norwegian students, and 29% report that they rarely or never have any interactions with the domestic student population. In fact, getting to know Norwegians is ranked as the second biggest challenge among international students, surpassed by the high cost of living at just one percentage point (Norwegian Centre for International Cooperation in Education, 2016).

Internationalising the curriculum to develop international competencies and knowledge in domestic students requires a systematic approach. It requires the integration of intercultural and international knowledge and skills in the curriculum, and different approaches to learning and teaching. The capacity of higher education institutions in

Norway to provide these opportunities is uncertain, as there is limited time and resources in many of the programmes to provide the necessary knowledge and skills within their fields of study. However, an increased focus on teaching and quality, especially in research-dominated higher education institutions, may offer an opportunity to heighten attention towards the need for international skills to become a natural part of the education provided in Norway (Norwegian Centre for International Cooperation in Education, 2016).

Provision of extracurricular activities

Extracurricular activities, such as sports activities, clubs, debating and academic societies, are highly valued by Norwegian employers for their role in developing transversal skills, such as leadership, communication and teamwork. Norway's higher education institutions provide plenty of opportunities to students to engage in on and off-campus activities, alone or in co-operation with their host city, which makes this institutional practice the second most common, after support for study abroad (Figure 5.1). Many students make use of these opportunities to develop work-relevant transversal skills and build social contacts.

A large number of extracurricular activities are also conducted in English, which provides a unique opportunity for Norwegian and international students to interact and therefore develop intercultural competencies. However, only half of international students report spending time weekly or more often with Norwegians in their leisure time. Students from Germany, Russia and Ukraine seem to have the most frequent interaction with Norwegians outside the study context (Norwegian Centre for International Cooperation in Education, 2016).

Career guidance

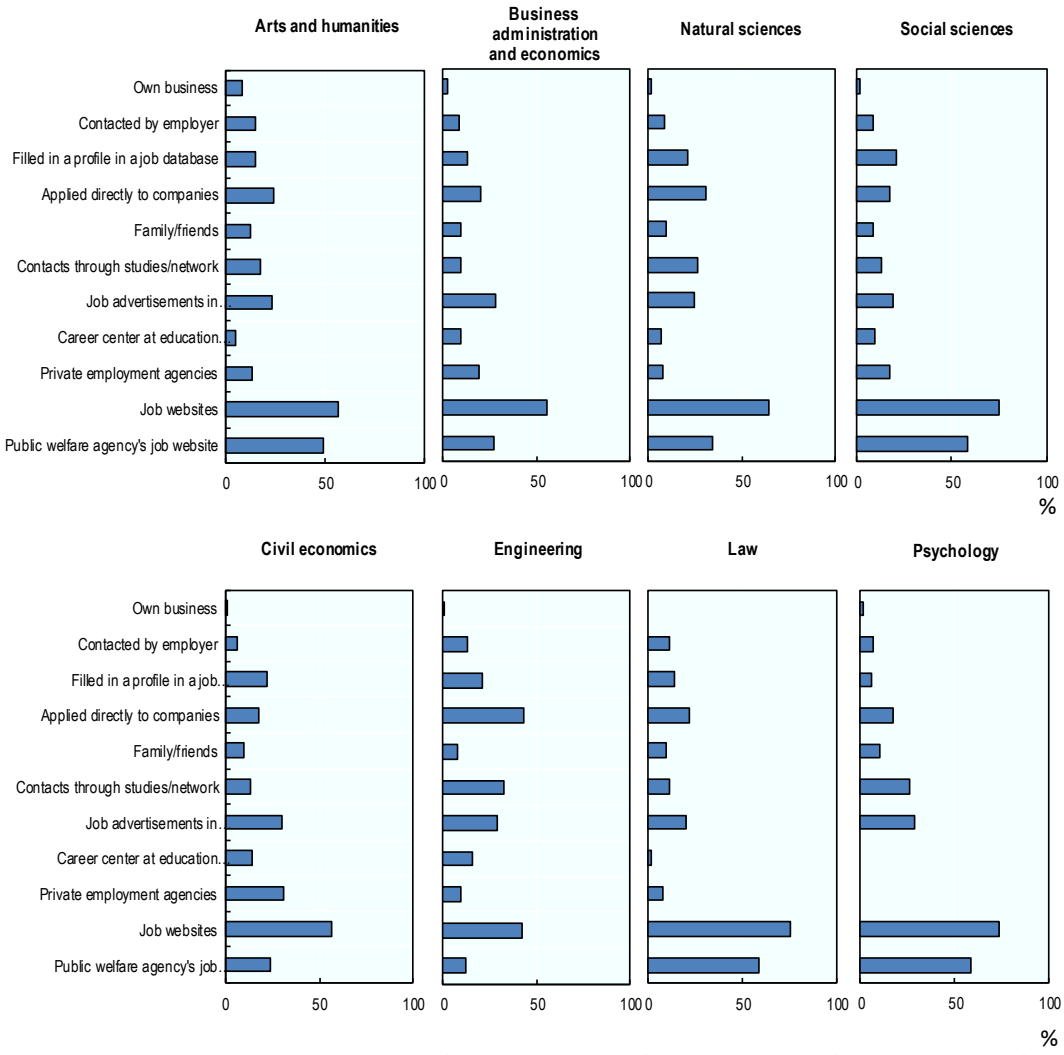
Career services at higher education institutions, particularly for students close to graduation, can be an important way of enhancing the labour market outcomes of graduates by facilitating a smooth transition to the world of work. Sometimes poor labour market outcomes do not stem from poor professional, technical or transversal skills, but rather from students' lack of knowledge regarding how to communicate their skills to employers and seek out employment opportunities.

All higher education institutions in Norway maintain career guidance centres with the goal of supporting students throughout the whole student lifecycle, however, the quality of these services is uncertain. One reason is that often counsellors do not have the right knowledge and training and connections with employers. In addition, career guidance centres do not seem to collaborate with faculties, academic staff and student associations. Usually, networks of companies associated with a particular faculty send guest lecturers or provide internships for students without the involvement of the career services. Similarly, student associations, rather than career guidance centres, have direct links with employers, which they use to organise meetings and job fairs on campus.

Overall, Norway's students view career guidance centres at higher education institutions merely as places for general advice on how to prepare an application for a job. It is therefore not surprising that few students use career services to look for a job (Figure 5.7). The most common forms of job searching among Norwegian students include the use of job databases and advertisements in newspapers, journals and other media, directly contacting employers, and using their own networks of contacts. It is important to note, however, that large differences emerge between the various fields of study which can contribute to the varying labour market outcomes discussed in Chapter 4. For instance, arts and humanities graduates predominantly apply for jobs through the

Norwegian Labour and Welfare Organisation website (NAV) (49%) and other job databases (56%), whereas engineering graduates directly approach employers (43%) and only one in ten use NAV's services.

Figure 5.7. Job search methods of higher education students in Norway, by field of study



Source: Støren et al. (2018), *Kompetanseutnyttelse blant mastere to–tre år etter eksamen: Resultater fra Spesialkandidatundersøkelsen 2017*, https://brage.bibsys.no/xmlui/handle/11250/2480986.

StatLink http://dx.doi.org/10.1787/888933727159

Career services across Norway's higher education system could offer much more to smooth the transition to the labour market for students from all study programmes and levels of higher education. Some career guidance centres show students how to search for positions, write a CV, behave in an interview and promote themselves. They may also organise career fairs, support students in their search for internships and other work-based learning opportunities, and provide guidance on career planning (European Commission, 2018). The latter services would particularly benefit doctorate students, but also students from fields of study that lack strong collaboration with the labour market, such as arts and humanities. Career services also need to stay up to date on emerging skills needs and provide counselling and training to students on what skills employers are currently

looking for (Box 5.2). It would also be helpful if all institutions made these services available for graduates as they make the transition to the labour market.

Box 5.2. Developing labour market relevant skills at career guidance centres and disseminating best practices in some European countries

The career service centres in some European higher education institutions go beyond assisting students in the transition process to the labour market by helping them develop the transversal skills required to succeed in the labour market:

- Loughborough University in the United Kingdom is recognised by the Times Higher Education as having the top ranked higher education career service in the United Kingdom. Part of the service's success is two complementary initiatives: the Loughborough University Graduate Attributes, a list of transversal skills that employers value and resources for how students and faculty can develop these skills; and the Loughborough Employability Award, a document validated by the institution that allows students to record and show employers the transversal skills they have developed through extracurricular activities (Loughborough University, n.d.).
- The career counselling service at the Tartu University in Estonia supports the development of entrepreneurial skills. The service offers support for business idea analysis; consultation in business model development; advice in start-up and spin-off company development; seminars on the entrepreneurial mind-set; business planning (including knowledge about how to use the online business tool iPlanner); and preparation for investor readiness (University of Tartu, n.d.).

Some higher education systems facilitate the collection and dissemination of career guidance best practice via specialised networks, professional organisations and research labs:

- In Finland, many higher education institutions are part of the Learning Network for Working Life Competencies in Academic Studies, which is a network that develops and documents the effect of programmes that develop career competences (Thomsen, 2014).
- In the United Kingdom, the Association of Graduate Careers Advisory Services (AGCAS) is a voluntary professional association for career and employability advisors at higher education institutions. AGCAS establishes quality standards for career guidance staff, researches practices, provides recognition for effective practitioners, and disseminates best practices in the field (Long and Hubble, 2018).
- In Denmark, the University of Southern Denmark operates career research lab which provides professionals and researchers with the opportunity to examine career guidance theories and methods together and disseminate effective approaches throughout the higher education system (Thomsen, 2014).

Sources:

Long, R. and S. Hubble (2018), "Career Guidance in Schools, Colleges and Universities", *Briefing Paper No. 07236*, House of Commons.

Loughborough University (n.d.), "Develop skills and employability", Loughborough University website, United Kingdom, http://www.lboro.ac.uk/services/careers/students-and-graduates/employability/ (accessed on 18 April 2018).

Thomsen, R. (2014), "A Nordic perspective on career competences and guidance – Career choices and career learning", *NVL & ELGPN concept note*, Nordic Network for Adult Learning.

University of Tartu (n.d), "Support services for UT students", University of Tartu website, https://www.ut.ee/en/welcome/support-services-ut-students (accessed on 18 April 2018).

Enabling factors and barriers to the use of higher education institution practices

Higher education institutions are large organisations that have multi-layered governance structures with complex relationships between governance bodies at the highest level of the institution and those at the faculty or programme level (Stensaker, 2014). These structures can sometime act as barriers to the implementation of new innovative practices that support the labour market relevance of higher education. Directives issued at the highest level of the organisation require buy-in from the faculty and programme level to be effective. This is especially true in learning and teaching, where academic staff have significant autonomy to use their own teaching methods and are generally sceptical of practices being imposed upon them from the outside (Norwegian Ministry of Education and Research, 2017b).

This same complexity in the governance structure may also inhibit effective practices developed at the programme level from being expanded and shared between programmes within the same higher education institution and across the higher education system due to the individualised nature of higher education teaching and the way in which programmes tend to operate in silos.

Organisational culture can also act as a barrier to innovative practices. Some higher education institutions are more rooted in traditional approaches and may be more averse to change. Other institutions that have a more entrepreneurial and pragmatic approach may be more open to investing in, and experimenting with, new and innovative practices. Some institutions will embrace these practices as part of their core ethos or branding. The University of Bergen, for example, ensures that all students participate in some form of international study experience, such as an exchange, studying a foreign language, or undertaking course work with an international dimension. At Nord University, the focus has been on fostering a culture that values excellence in teaching, driven in part through new hiring practices that place a new emphasis on teaching experience and competence when hiring new lecturers and associate professors (Nord University, 2016).

A lack of time can also prevent otherwise effective approaches, such as extracurricular activities, internationalisation, academic support, and student-centred teaching practices from being fully developed and integrated into higher education programmes. Academic staff have significant teaching and research responsibilities but spend about 20% of their time on other duties, such as administration, professional practice, and outreach activities (Lid, Pedersen and Damen, 2018).

Incentives are not always in place to support innovative practices. Career guidance, academic support and the collection and provision of labour market information about their graduates are all activities that have up-front costs for higher education institutions, costs that need to be weighed against other competing priorities. Some of those competing priorities, especially investment in research or attracting international students, are encouraged through incentives such as performance-based funding from government.

Sometimes the incentive structures work against these practices. Performance-based funding, for example, can reward higher education institutions for admitting as many students as possible. This can discourage the use of practices to ensure students are well prepared for higher education, such as admissions processes that select incoming students who are best able to succeed in a given programme.

A lack of incentives has been cited as a key reason why innovative learning and teaching is not more pervasive within the higher education system. Academic staff report that there are few policies or incentives for them to modify or update their teaching approach, but significant incentives are in place to reward research and publishing (Federation of

Norwegian Professional Associations, 2016). This, however, is changing: both the Norwegian University of Life Sciences and the University of Oslo have created centres to support teacher training on campus. Some institutions have also taken steps to create incentives that can encourage innovative learning and teaching. At the universities of Tromso, Bergen, and the NTNU, recognition awards and financial incentives have been developed to reward teaching excellence.

Lack of information can also be a barrier to the prevalence and effectiveness of good practices. In some instances, students may not be aware of the services available to them. A lack of awareness about the academic support and career guidance available on campus can jeopardise a student's progress and therefore increase the risk of non-completion or poor transition to the labour market.

How higher education institutions and social partners work together to support labour market relevance and outcomes

Collaborative practices between higher education institutions and social partners

Employers are well-positioned to provide higher education institutions with information about the skills needed for the labour market. They can also collaborate with higher education institutions to design and even deliver higher education programmes. A curriculum that is designed by pedagogical experts, but which reflects the input and feedback from social partners (employers and trade unions), stands a better chance of leading to strong labour market outcomes (Wilson, 2012).

These partnerships between higher education institutions and employers are beneficial for all parties. Students develop the skills that employers want, which helps them transition quickly to the labour market and get good jobs, pay and other labour market outcomes. Employers get the skilled labour force that they need. Academic staff in higher education institutions are able to stay current with workforce practices and skills needs, and build relationships with business. Successful partnerships with employers and trade unions, and the labour market outcomes of graduates that these partnerships support, are also effective selling points for the recruitment of new students.

Higher education-social partner collaboration may take a number of forms (Table 5.2). Employers can be involved in the review of the curriculum to ensure it meets labour market needs. They can also provide labour market intelligence and support programme accreditation. They can work directly with academic staff in the design and development of the curriculum to ensure that the content of programmes is labour market relevant and that students develop the skills they are seeking. Employers may contribute directly to learning and teaching by providing practitioners to teach in programmes or by making specialised equipment available. They can also play an important role through the provision of work-based learning in their own facilities.

Prevalence and effectiveness of collaborative practices

In Norway, collaboration between higher education institutions and social partners, especially employers, is generally high in the area of research, compared to other OECD countries (Figure 5.8). However, employers are not systematically involved in education activities. This view was confirmed by representatives from higher education institutions and social partners during meetings and workshops with the OECD review team. The participation of employers in consultative bodies is mandatory at the institutional level through the Councils of Co-operation with Working Life (RSAs), however, their involvement in curriculum design, teaching and work-based learning is limited, or not

common, in contrast to some other European countries, notably Denmark, France, Italy and Switzerland (European Commission/EACEA/Eurydice/Cedefop, 2014).

Table 5.2. Collaborative practices between higher education institutions and social partners that enhance labour market relevance and outcomes of higher education

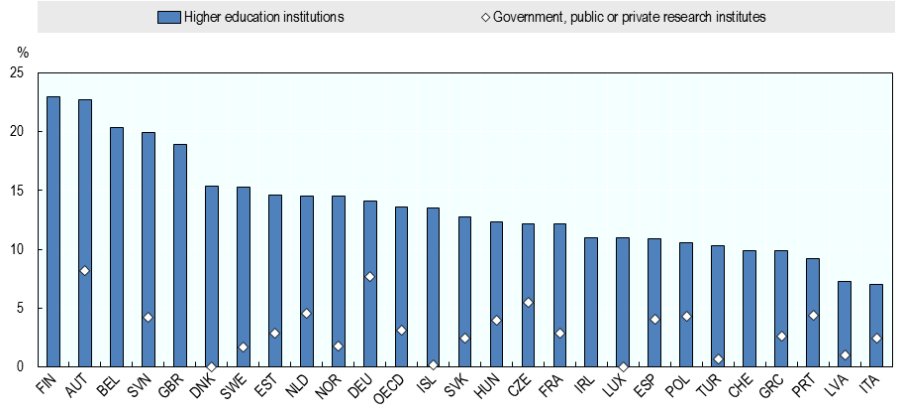
Collaborative practices	Labour market relevance and outcomes of higher education
A formal role for social partners in the governance of higher education institutions	Ensures higher education programmes are responsive to the skills needs of the labour market and employers are aware of the generation of new research, knowledge and skills relevant for their organisations.
Academic staff and social partners working together on the curriculum	Ensures the development of skills that are relevant to the labour market.
Entrepreneurship education and start-up support	Ensures the development of interdisciplinary and entrepreneurial skills such as teamwork, initiative, risk tolerance and creativity, which are relevant to the labour market and innovation activities.
Embedding work-based learning into the curriculum	Ensures the development of professional and technical skills, as well as transversal skills; provides contacts with employers; facilitates education-to-work transition.
Staff mobility between higher education institutions and social partners	Ensures the development of work-relevant skills and use of up-to-date technologies and methods; informs employers of new research, knowledge and skills relevant for their organisations; provides contacts with employers.

Source: OECD (2017a), *In-Depth Analysis of the Labour Market Relevance and Outcomes of Higher Education Systems: Analytical Framework and Country Practices Report*, Enhancing Higher Education System Performance.

Norway's social partners consider collaboration with higher education institutions to be a highly effective way to help students develop labour market relevant skills (Figure 5.9). However, similarly to higher education actors, they are less confident about the systematic use of these practices across the higher education system. Importantly, social partners report that they do not know how to approach higher education institutions to establish partnerships. They suggested that this may depend on a range of factors, such as location, with partnerships in work-based learning and entrepreneurial education appearing to be much more common in Trondheim than in Bergen (Figure 5.9).

Figure 5.8. Share of enterprises co-operating with the higher education sector or research institutes

2014

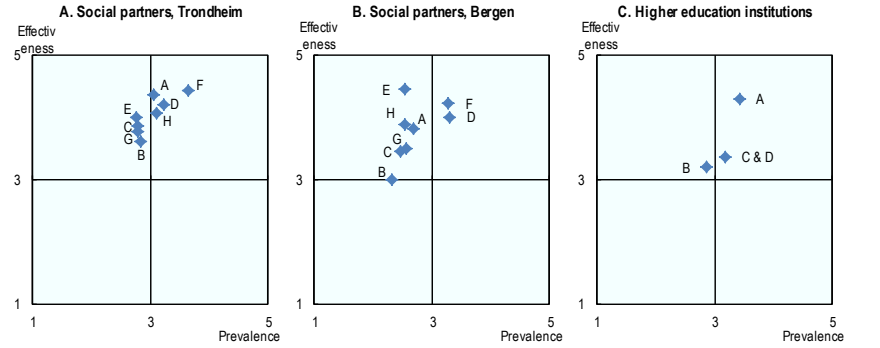


Source: Eurostat (2014), Community Innovation Survey, http://ec.europa.eu/eurostat/web/microdata/community-innovation-survey.

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Figure 5.9. Assessment of the prevalence and effectiveness of collaborative practices in Norway

Prevalence scale (1=Not at all common, 3= Somewhat common, 5=Very common); Effectiveness scale (1=Not at all effective, 3=Somewhat effective, 5=Very effective)



A. Integrated work-based learning
B. Collaboration to decide which programmes to offer
C. Collaboration to design programmes
D. Collaboration to deliver courses / programmes
E. Staff mobility between higher education instituions and social partners
F. Support for students' research projects relevant for social partners
G. Provision of infrastructure / instructional equipment
H. Collaboration on entrepreneurship education

Note: The average score of effectiveness and prevalence for each practice is calculated based on the answers of participants from three workshops in Oslo, Trondheim and Bergen in September 2017. Panel A summarises the answers provided by social partner representatives in Trondheim. Panel B summarises the answers provided by social partner representatives in Bergen. Panel C summarises the answers provided by higher education institution representatives in Bergen, Oslo and Trondheim. The workshops were organised by the OECD team as part of the in-depth analysis of the labour market relevance and outcomes of Norway's higher education system project.
Source: OECD workshops with stakeholder representatives of Norway's higher education system in Bergen, Oslo and Trondheim, September 2017.

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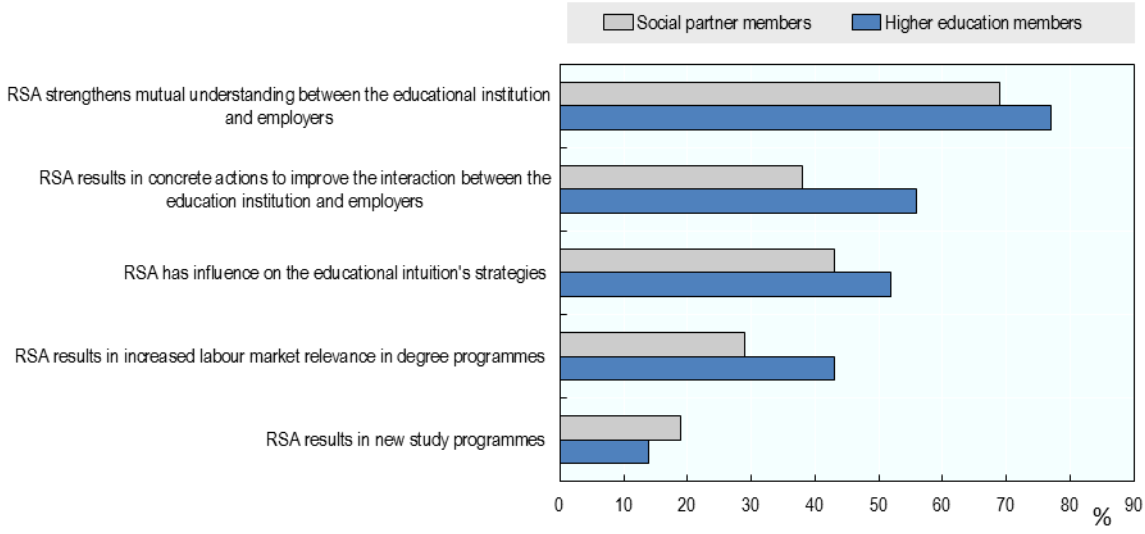
Role of social partners in the governance of higher education institutions

The key form of collaboration between individual higher education institutions and social partners in Norway are the RSAs. The Norwegian government created the RSAs specifically to facilitate a more structured and binding collaboration between higher education and the labour market in order to strengthen the labour market relevance of degree programmes and continuing education and share information. Currently, all public higher education institutions have an RSA, but there is wide variation in the quality of RSAs, and the collaboration is not as deep or effective as envisioned (Tellmann et al., 2017). The following issues were raised in the evaluation:

- Among participants, 40% found that the mandate for their RSA was not clear.
- Strong majorities felt that RSAs should be linked more closely to the degree programmes.
- Most RSAs met two to four times a year, but a few had only met once in the past calendar year.
- Two-thirds of members of RSA committees reported that their only interaction with higher education institutions was through the RSA committee.

- Almost a third of the committee members did not know how higher education institutions incorporate the advice of the committee.
- Fewer than half of the committee members felt that their work enhanced the labour relevance in degree programmes or contributed to the creation of new programmes or degree programmes (Figure 5.10).

Figure 5.10. Percentage of RSA members who agreed with the following statements



Source: Tellmann, et al. (2017), *Råd for samarbeid med arbeidslivet: En underveisevaluering*, https://brage.bibsys.no/xmlui/bitstream/handle/11250/2443321/NIFUrapport2017-9.pdf?sequence=3&isAllowed=y.

StatLink http://dx.doi.org/10.1787/888933727216

Some RSAs, for instance at the University of Stavanger and the NTNU, are using sub-committees at the programme level to better inform programme design and delivery, as any changes to the curriculum can happen only at that level. However, this does not occur across the system, as the government has given higher education institutions broad leeway to design the RSAs in a way that best meets their needs.

Social partners also participate as external members in the governing boards of Norwegian higher education institutions. The Universities and University Colleges Act 2005 sets a baseline requirement that four seats on the 11 person governance board for each higher education institution must be an external member (including social partners). This number can be decreased or increased with a vote from two-thirds of the board (Norwegian Ministry of Education and Research, 2005). The participation of social partners in governing bodies ensures actors with close links to the labour market are able to contribute to the decision-making process on an institution's strategy for education, research and engagement activities, management of the financial resources and assets, and oversight of its operations. In some cases, the external members are assigned by the Ministry of Education and Research.

Collaboration on curriculum design and delivery

The curriculum is at the core of higher education learning: in any field of study, a well-designed curriculum is an important step towards ensuring that students develop the right mix of skills to position themselves for labour market success. A curriculum designed by

pedagogical experts, but which reflects the input and feedback from social partners, stands a better chance of leading to strong labour market outcomes (Wilson, 2012).

Norwegian higher education institutions have a long tradition of collaboration with social partners on curriculum design in more applied fields of study, such as health, education and engineering. Some employers work very closely with higher education institutions to provide programmes that are directly linked to their enterprises. This often involves the joint development of the curriculum, as well as work-based learning and job placements for graduates.

There is much less collaboration in other fields of study, particularly the humanities, but some higher education institutions and employers are starting to work together on the curriculum design in these programmes. For instance, Telenor, the third largest enterprise in Norway, has progressively forged ties with academia, more specifically with the department of social sciences and humanities at the University of Oslo. The company has co-sponsored a research competition on communication in Social Anthropology, which helps students to develop additional skills as part of their curriculum. Together with other companies, Telenor also contributes to the bachelor's course "Anthropology in practice", which explores the applicability of theory outside academia. Telenor also actively recruits humanities graduates.

However, academic staff in Norway shared their reservations about involving social partners in the development of curriculum during workshops with the OECD review team. Social partners also expressed concerns about the ability of employers to effectively and reliably communicate to higher education institutions the types of programmes to offer, as individual firms may not have good insights into the broader labour market. On the other hand, social partners felt more confident about their abilities to help shape the curriculum by identifying key skills that should be developed within programmes.

Entrepreneurship education and start up support

All Norwegian higher education institutions should offer entrepreneurship education, either through designated study programmes or as integrated courses and topics within different programmes, such as economics, education, tourism, technology and other fields (Norwegian Ministry of Education and Research/Ministry of Local Government and Regional Development/Ministry of Trade and Industry, 2014). Some institutions, such as the University of Oslo, University of Stavanger, University of Agder and the NTNU, have developed units and/or centres to support entrepreneurship and innovation.

Other institutions are working together with peer institutions and social partners to maximise the opportunities that entrepreneurial education provides. For example, ENgage is a consortium of the NTNU School of Entrepreneurship, Nord University Business School, NTNU Experts in Teamwork, TrollLABS and Spark NTNU, that involves students using a collaborative approach to learning by working in teams across disciplines and industries to develop solutions to real world problems facing firms. ENgage emerges as a cutting-edge learning model that applies action-based learning, student-to-student learning, collaborative skills, rapid prototyping and student engagement. The programme provides train-the-trainer courses and activities for students in all disciplines aiming to develop entrepreneurial skills.

Higher education institutions, supported through the government, also seek to develop the entrepreneurial skills of their students through involving them in research and innovation activities. The Student Entrepreneurship (STUD-ENT) programme is among the most prominent Norwegian initiative, along with the placement of technology transfer offices in all regions of Norway that aim to encourage entrepreneurship among students, promote

a stronger entrepreneurship culture in higher education institutions, and increase the number of knowledge-intensive jobs in Norway (Research Council of Norway, 2018).

Work-based learning integrated into the curriculum

Embedding a component of work-based learning into the curriculum is usually developed in collaboration with employers, who will provide placements to students as part of the curriculum. Work-based learning typically includes field experience, mandatory professional practice, co-operative education placements, internships, applied research, project learning or service learning.

Work-based learning can help students develop relevant technical and professional skills using up-to-date equipment and work practices, as well as transversal skills such as teamwork, communication and negotiation, and organisational savvy, interpersonal sensitivity, and professionalism, which are especially difficult to develop in the classroom (OECD, 2012; Shoenfelt, Stone and Kottke, 2013). Work-based learning facilitates transition to the labour market by equipping graduates with a wider set of relevant skills and providing an opportunity for prospective employers to assess the potential of students as future employees.

Norway's higher education institutions, social partners and students consider work-based learning as one of the most effective but less common collaborative practices to support the labour market relevance of programmes (Figure 5.9). Employers and students believe especially that work-based learning can provide them with the right skills needed by the economy (Tellmann et al., 2017). In general, graduates with relevant work experience during their studies have a smoother transition to the labour market (Næss, 2011). The majority of these graduates confirm the strong role of this experience in developing practical skills for the labour market and learning about relevant working methods. In addition, two-thirds resume their studies with higher motivation to complete education, and almost half report having found employment through the contacts developed during their work-based learning placement.

Students overall want more work-based learning opportunities, but the availability of these depends on the level and field of study (Figure 5.11). Master's students are usually offered more opportunities than those in bachelor's programmes. Moreover, in some study programmes, notably health, education and often engineering, work-based learning is mandatory, and as such integrated into the curriculum: it provides study credits and higher education institutions are responsible for connecting students to potential employers.

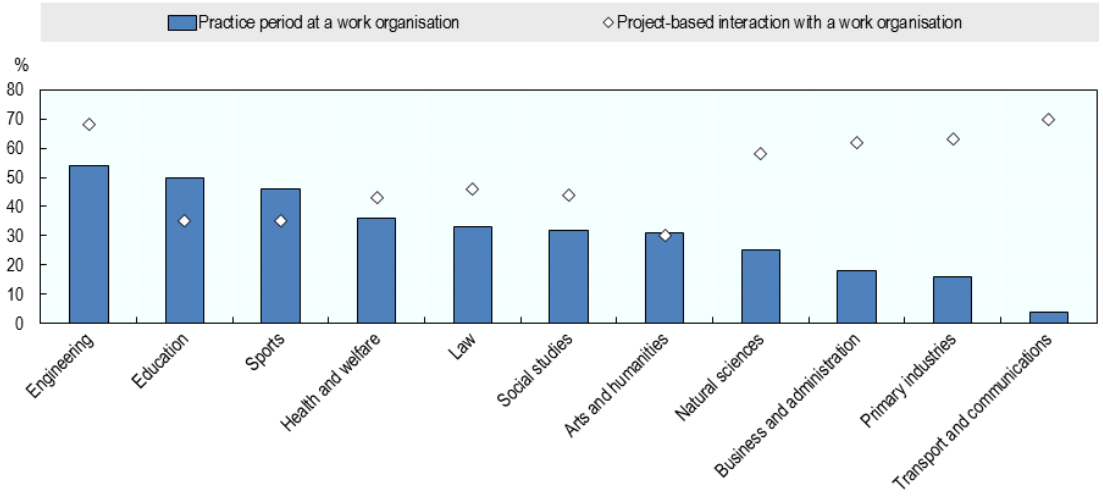
In other programmes, such as humanities, the provision of work-based learning is low or non-existent, even though the evidence shows that it can improve graduate labour market outcomes significantly (Thune and Støren, 2015). Some of these graduates are struggling with their transition to the labour market and end up working in jobs that do not require a higher education qualification (see Chapter 4). This suggests that these programmes could also benefit from partnerships with employers (Box 5.3).

Some Norwegian institutions have recognised the benefits of work-based learning across all fields of studies and are working closely with employers to develop opportunities for their students, notably the NTNU. Through an online portal created in 2013, NTNU's BRIDGE initiative aims to link employers with students across all fields of study for academic collaboration on a thesis, internships, part-time jobs or seasonal employment. The process has been formalised by the NTNU with the development of standard agreements between the student, the student's academic department, and the supervisor at NTNU and the firm (and a confidentiality agreement between the student and firm). In 2017, the programme counted 3 264 registered students, 362 registered employers and 28

academics. The breakdown of students by field of study shows a good spread across the different fields of study: 836 students from technology, engineering and architecture; followed by 313 students from social sciences and psychology; 249 from economics, management and administration; 241 from information technology and informatics; and 708 from different disciplines.

Figure 5.11. Work-based learning among Norway's master's students, by field of study

Percentage of all surveyed graduates, 2015



Source: Støren et al. (2016), *Kandidatundersøkelsen 2015: I hvor stor grad er nyutdannede mastere berørt av nedgangskonjunkturen?*, https://brage.bibsys.no/xmlui/handle/11250/2393490.

StatLink http://dx.doi.org/10.1787/888933727235

NTNU's CHAIN programme is a collaboration initiative with the United Nations Educational, Scientific and Cultural Organisation (UNESCO) that aims to reduce the gap between research, policy and practice by connecting the higher education system, the United Nations, civil society and the private sector. It invites researchers from different regions and disciplines to tackle health problems and advance the policy base through social innovation, which also allows for quasi-experimental studies while linking socio-economic status and health. Lastly, the Conceive Design Implementation and Operation programme provides students with the opportunity to undertake a placement with a company, even before having learnt the theory. Such developments are the result of the strong institutional relationships with employers.

Staff mobility between higher education institutions and the world of work

Norway's 2013 White Paper on research (*Lange linjer – kunnskap gir muligheter* 2013) stressed the need to increase academic staff inter-sectoral mobility. Inter-sectoral staff mobility can help build networking skills among academic staff, break down barriers between higher education and other sectors, and disseminate research into local businesses and communities. Academic staff who collaborate internationally can bring a global perspective and expertise to help address local issues. Free from the daily pressures of running a business, academics can be skilled at identifying and helping businesses address endemic problems. However, it is not common to have staff from other sectors working in higher education institutions, and they tend to be on an ad-hoc visiting basis, for example some business schools have "entrepreneurs in residence" (University of Oslo, 2017).

Box 5.3. Embedding work-based learning into the curriculum of arts, humanities and social sciences study programmes in the United States

In the United States, many higher education institutions have shifted their programme offering towards the provision of more career-related programmes and fewer arts and social sciences programmes, which have a more general application (Carnevale et al, 2015). Many remaining humanities and social sciences programmes have made concerted efforts to maximise the work-based learning opportunities for students as a way to demonstrate labour market relevance. This has often meant taking creative approaches to encourage students, faculty and employers to participate in work-based learning where traditionally opportunities and participation had been less well developed than other fields.

Small liberal arts colleges have been at the forefront of these developments because they see it as a way to improve their programme offering and effectively compete with larger institutions for students. At Rhodes Colleges, a private liberal arts college with just over 2 000 students in Memphis, Tennessee, 75% of students participate in an internship and 80% gain additional workplace experience through volunteering opportunities arranged by the college (Rhodes College, n.d.a).

The career services centre at Rhodes College is responsible for matching employers and students. The centre delivers various programmes that provide students and employers with work-based learning options to meet their needs, while reducing administrative and financial barriers to participation:

- **Academic Internships:** Unpaid internships where students earn academic credits. The internships are assessed by faculty to ensure that they provide a relevant and valuable academic and professional experience. If approved, a student spends 10 hours per week for a semester (140 total hours) in the workplace.
- **Paid Internships:** Work-based learning opportunities lasting 15 to 20 hours a week (during the academic year) or 40 hours a week (during the summer). Employers pay students and are required to provide the students with a mentor and meaningful project-based work that is relevant to the student's field of study.
- **Summer Service Fellowships:** Paid work experience with non-profit organisations over the summer. Students are given free housing on the college campus to facilitate participation. Work-based leaning is paired with visits to community and historical sites and group discussions on social issues to complement academic learning.
- **Third-party internship programmes:** Rhodes College partners with third parties to provide access to established internship programmes, e.g. the D.C. Connection Program, which allows Rhodes College students to apply for summer internships with the federal government in Washington, DC.
- **Alumni-supported work-based learning opportunities: These** draw on financial support from alumni to fund specific work-based learning opportunities. For example, the Buckman family, in conjunction with Rhodes College, administers the Mertie W. Buckman International Internship Program, which provides funding to support the travel, housing and salaries cost associated with students participating in international work-based learning opportunities (Rhodes College, n.d.b).

Sources:
Carnevale, A. et al. (2015), *Learning While Earning: The New Normal*, Center on Education and the Workforce, Georgetown University.
Rhodes College (n.d.a), "Internships", Rhodes College website, https://www.rhodes.edu/content/internships-0 (accessed on 20 May 2018).
Rhodes College (n.d.b), "Information for employers", Rhodes College website, https://www.rhodes.edu/content/internships-0 (accessed on 20 May 2018).

The Professor II initiative in Norway supports inter-sectoral mobility by allowing staff to occupy combined part-time positions in higher education institutions and other sectors.

Academic staff are able to hold a part-time position (up to 20%) as a Professor II or Associate Professor II in an institution other than their own. Experts from other sectors may also secure part-time positions in higher education institutions through the same programme. In this way, staff can work for different higher education institutions, public sector agencies and/or private firms.

In 2016, 1 669 people were employed part-time as Professor II at Norwegian higher education institutions (Frølich et al., 2018). Candidates for Professor II positions must meet the regulations for a full professorship and, once appointed, staff are subject to the same labour laws as other academic staff. However, these positions are only part-time on a fixed term basis. At the University of Oslo, the guidelines state that "a Professor II appointment will lead to the establishment of contact with an important subject community in another university or college or research institution, or with another co-operating partner within social affairs and the business world" (University of Oslo, 2017). During the OECD workshops, social partners stressed the importance of this collaborative practice for enhancing the labour market relevance of study programmes, and ranked it among the most effective practices.

Enabling factors and barriers to the use of collaborative practices

Higher education institutions are no longer "ivory towers", operating in isolation from society. Engagement with social partners plays a role across the whole system, but the degree to which higher education institutions work together with social partners varies and depends on many factors.

One factor that can enable or act as a barrier to collaboration with social partners is organisational culture. Some institutions, notably the NTNU, has a long tradition of collaboration with social partners through its governance structure, collaboration on programme design, provision of work-based learning, and its engagement with the Centre for Engaged Education through Entrepreneurship. As noted during the OECD workshops, other institutions, or parts of institutions, are more conservative in their approach to collaboration with social partners, especially where the overall academic culture favours research and theoretical learning over practical learning. Curriculum design is often one area where partnership is more limited, and academic staff sometimes feels that social partners have limited insights into teaching, learning and the skills that need to be developed.

Some employers also take a relatively conservative approach towards engagement with higher education institutions. They may expect higher education students to be fully trained for specific tasks and therefore do not see a role to play in training or aligning their efforts with the work done by higher education institutions. Firms in a competitive environment may also favour confidentiality or the need to protect intellectual property rights over the opportunity to partner with higher education institutions and students.

The capacity of firms to collaborate with higher education institutions is also an issue. Norway's economy is composed mainly of small and medium-sized enterprises, which often do not have the resources to fully engage with higher education institutions. Unlike large firms that have dedicated staff to manage outreach and human resource issues, small firms may struggle to manage relationships with higher education institutions, provide staff to teach a course, or take on and properly mentor a student through a work-based learning experience.

Institutions also face capacity issues, especially when it comes to work-based learning partnerships, which may not be seen as a key role for higher education intuitions. The curriculum for programmes that do not have a history of embedding work-based learning is often set and well-established. A work-based learning component needs to be

meaningful and well integrated into the curriculum to be effective, and a major reform of the curriculum requires resources. To gain the most benefits from work-based learning, higher education institutions need to monitor the skills students gain through the experience. And institutions need to select placements carefully to help ensure they align well with the curriculum. All of these actions require resources that higher education institutions may not have.

Lack of awareness can also be a barrier to collaboration. Employers and higher education institutions may not know how to reach out to each other, nor are they aware of the potential benefits to both parties of collaboration. Small firms in particular may be unaware of opportunities to collaborate and may even lack knowledge about their own medium to long-term skills needs. Awareness is also an important factor among students, who may not be aware of the important benefits that work-based learning can bring in terms of economic outcomes, skills development, and transition to the labour market.

Incentives can also play a role in encouraging broader collaboration. There are regulatory requirements for collaboration between social partners and higher education institutions in Norway. However, there are no financial or tax incentives to encourage employers to participate in work-based learning or to compensate them for the resources such collaboration requires. Employers may be more likely to take up these responsibilities if incentives were provided in recognition of the public benefits of their private action.

There are few incentives for academic staff to partner with employers. Career progression in academia favours research over teaching or engagement activities. This can act as a discouragement to inter-sectoral mobility and other forms of engagement (Vandevelde, 2014). A powerful incentive, therefore, may be to include employer engagement as a criterion in academic staff performance evaluation, particularly for promotion or tenure. Incentives might include the reduction of teaching time for staff members that are active in engagement, and internal and external recognition.

Implications for public policy

As noted in Chapter 2, Norway's economy is changing and evolving in ways that will privilege those with advanced skills. To match the labour market demand for skills, higher education institutions in Norway need to engage in a range of practices and partnerships that enable them to respond to these needs. The expansion of the higher education system in its current form risks not being sufficient to meet the future labour market demand for skills.

At present, higher education institutions in Norway do, to a varying degree, engage in practices and partnerships that support labour market relevance and outcomes, and there are many examples of innovative approaches. However, the application of these practices is uneven, and gaps exist across the broader higher education system.

There is significant potential within the higher education system to expand, in particular through: the use of labour market information; increase the provision of academic support services and career guidance; grant higher education institutions additional autonomy over the admissions process; and develop more and better collaboration with employers, especially in the formation of work-based learning opportunities for students. These approaches are especially effective in supporting the development of professional and transversal skills, improving non-completion rates in higher education, and supporting a more efficient transition to the labour market for graduates.

Higher education institutions have significant discretion in how they develop and implement these types of practices and partnerships, but the government has a key role to play through the use of public policy to create the frameworks and conditions for these

practices. This is especially true currently, as practices and partnerships are at sub-optimal levels.

Complacency on the part of higher education institutions and policy makers could run the risk of a higher education system in the medium-term that is misaligned from the skills needs of the labour market. If there is a will, policy makers in Norway and higher education institutions, as well as other stakeholders, are well-situated, through existing structures, capacity and policy tools, to create an environment that facilitates and guides the use of effective practices, and to support more broadly the labour market relevance and outcomes of higher education.

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Chapter 6. Enhancing labour market relevance and outcomes through policy

This chapter examines the approaches that Norwegian policy makers use to steer the higher education system towards greater labour market relevance. It focuses on how well these levers are working and where new policy responses may be required. Evidence from formal evaluations, recent OECD reviews on related topics, as well as evidence gathered as part of the OECD review team's interviews and workshops with key stakeholders are used to ascertain the effectiveness of current policy approaches and to identify where gaps exist. The chapter also provides international examples that Norway may wish to consider when thinking about ways to better support the labour market relevance of its higher education system.

As seen in Chapter 5, the Norwegian higher education system does not appear to make sufficient use of many practices that can effectively help students develop labour market relevant skills, including innovative learning and teaching, career guidance, academic and remedial support, the use and provision of labour market relevant information, work-based learning, and other forms of collaboration between higher education institutions and social partners.

There are no real barriers to the usage of these practices in the Norwegian higher education system. The key factor preventing more widespread use of practices to help students develop labour market relevant skills appears to be the lack of a general consensus within the higher education system on the need to align higher education with labour market needs. Higher education actors, students, and social partners alike are generally satisfied with the current performance of the system. This is supported by the generally good labour market outcomes currently experienced by Norwegian higher education graduates, as seen in Chapter 4.

However, without more widespread use of these practices, students risk graduating without the skills they need for the future labour market and society. Certain groups of graduates currently find it difficult to transition to the labour market, and they could be more at risk in the future as Norway's economy transforms and employers look increasingly for stronger, broader and more advanced skills.

Norway has recognised these risks and the importance of improving the labour market relevance of its higher education system as the economy transitions, as noted in the 2017 Quality Culture White Paper:

> *One of the main objectives of this white paper is for students to receive an education that will be relevant to their working lives. This is perhaps more important than ever as we find ourselves in the midst of a significant transition. Within a short space of time, thousands of jobs have disappeared from the oil and gas sector, so we need employees with ideas on how to create new value in other sectors. At the same time, a study shows that about one-third of the employed labour force in Norway could experience automation or digitisation of their current duties. This change will not affect just the low-skilled occupations – all*

professions will be affected (Norwegian Ministry of Education and Research, 2017a).

The White Paper notes that reforms to higher education cannot be driven solely by parliament, and suggests that higher education institutions must take the largest share of the responsibility, including in the development of labour market relevant skills, on the basis that institutions know how best to achieve the necessary changes:

This white paper, therefore, is also a clear invitation to higher education institutions to take a leading role. What can they do to ensure that students not only graduate with skills that are in demand in today's labour market, but also have the ability to adapt and renew themselves? How can they guarantee that students will make innovative, attractive and productive employees who will help to shape society for the next 20 to 30 years? Our answer is that programmes of study have to be based on research and developed in close collaboration with the working life and with the students themselves. How this is best accomplished in practice, however, is a task for higher education institutions to take on for themselves (Norwegian Ministry of Education and Research, 2017a).

Given the lack of consensus within the system on the role of higher education in developing labour market relevant skills, the government may need to provide more direction and drive reforms that enhance the labour market relevance and outcomes of the system, rather than leave it to higher education institutions and others to drive change.

Current policies to support labour market relevance and outcomes

One of the key factors in steering higher education is an articulate vision for the system supported by the co-ordinated use of policy levers and effective performance monitoring and evaluation (OECD, 2008). When assessing the effectiveness of policies, it is therefore important to also remember that policy levers do not operate in isolation. A coherent strategy using a mix of policy levers is often required to deal with the complex nature of higher education and its multiple stakeholders. Individual policy levers interact with others that are directly aimed at addressing the issue, as well as broader higher education policy levers that have an indirect effect.

Policy levers to enhance labour market relevance and outcomes in higher education

Norway has fewer policy levers focused on labour market relevance and outcomes in higher education than many other OECD countries (OECD, 2017a). Policy makers have developed a small number that are directly targeted at improving labour market relevance and graduate outcomes (Table 6.1). However, Norway has developed a range of other policy levers predominantly aimed at improving the quality of higher education, and these may also affect the labour market relevance and outcomes of the system indirectly.

Building consensus on the role of higher education in developing labour market relevant skills and outcomes for graduates

In Norway, the Ministry of Education and Research uses a dialogue-based approach, focused at the strategic level, as its primary means for steering the higher education system (Elken, Frølich and Reymert, 2016). This approach has built high levels of trust between the government and the higher education system and could be used more effectively to build a consensus on the role of higher education in developing labour market relevant skills and helping graduates achieve good outcomes in the world of work.

Table 6.1. Policy levers to enhance labour market relevance and outcomes in higher education

Relevance to graduate labour market outcomes	Policy levers	Targets
	Regulatory policy levers	
Direct	Accreditation and quality assurance: labour market relevance requirements	Higher education institutions (HEIs)
	Mandated minimum number of places in fields where there are labour market shortages	HEIs
	Mandated collaboration between HEIs and social partners	HEIs; social partners
	Performance agreements (varies by institution)	HEIs
Indirect	Admissions policies: selectivity; centralised admissions processes; age criteria; recognition of prior learning and work experience	Students
	Mandated study contracts	Students
	Institutional mergers	HEIs
	Lifelong learning: requirement to provide study leave to employees	Students
	Merit system for teaching staff (to be introduced)	HEIs
	Norwegian Qualifications Framework for Lifelong Learning	HEIs, students, social partners
	Funding policy levers	
Direct	Targeted funding for student places	HEIs
	Student financial assistance (teachers in northern regions)	Students
Indirect	No tuition fees	Students
	Performance-based funding	HEIs
	Student financial assistance	Students
	Targeted funding to support learning and teaching (e.g. Centres for Excellence in Education Initiative)	HEIs, students
	Lifelong learning: free basic skills training and language training for immigrants	Students
	Information policy levers	
Direct	Collection and dissemination of labour market data for students and HEIs	HEIs; students; social partners
	Awareness campaigns	HEIs; students; social partners
	Career guidance	Students
	Organisation policy levers	
Indirect	Strategic planning	Policy makers
	Establishment/use of government and/or independent agencies for specific functions in higher education	HEIs, students
	Stakeholder consultation	HEIs, students, social partners

The relationship between the Ministry for Education and Research and higher education institutions is fostered through different forms of stakeholder engagement. At the highest level, the Prime Minister and the Ministry of Education and Research host an annual meeting with stakeholders to discuss priorities for higher education and research. Participants include the rectors and senior management from all higher education institutions, experts on higher education and research, and representatives from other ministries.

The Ministry of Education and Research also hosts an annual high-level dialogue (Kontaktkonferansen) with the national and global education and research community to discuss various matters. Participants in the dialogue include the Norwegian Association of Higher Education Institutions (Universitets-og høgskolerådet), a co-operative body for higher education institutions in Norway; chairs and rectors of all Norwegian higher education institutions; parliamentarians; and other stakeholders.

The Ministry of Education and Research also uses biannual governance meetings and formal correspondence to communicate with the boards of each of the public higher education institutions (Elken, Frølich and Reymert, 2016). The first meeting between policy makers and higher education institutions is held prior to the beginning of the fiscal year and is an opportunity for higher education institutions to discuss activities of the past year, plans for the upcoming year, their institutional profile, and alignment with the ministry's priorities.

Following this meeting, the ministry provides higher education institutions with a letter which outlines their funding for the year. Depending on where higher education institutions are in the performance agreement cycle, they may also receive their performance agreement. The performance agreement outlines key objectives that the institution should strive to achieve over the course of a three-year period. The ministry meets with each institution during the year to discuss progress towards achieving these goals. Each institution is required at the end of the year to report data to the Database for Statistics on Higher Education (DBH) and to present an annual report to the ministry. This information is used by the ministry to develop an annual report on the state of higher education and to develop an annual feedback letter for institutions about their annual performance (Larsen et al., 2017).

Broader stakeholder engagement is fostered through public inquiries (Norges offentlige utredninger), proposals for legislation and regulations, and government-sponsored official reports and white papers on specific issues. In the case of official reports, all citizens are invited to participate in consultation hearings (utredningsinstruksen). Concerned stakeholders are invited to provide input on the development of white papers and are often asked to respond to key questions to help foster discussion and test and refine proposals.

These forums and stakeholder consultations provide an excellent opportunity for the ministry to emphasise the important role higher education plays in developing labour market relevant skills and ensuring good outcomes for graduates. This dialogue could help build a consensus within the system on the need to make more use of effective practices to develop these skills and ensure all students receive "an education that will be relevant to their working lives" (Norwegian Ministry of Education and Research, 2017a).

The positive interaction of a stakeholder dialogue of this nature with other policy levers would help ensure that they meet their aims of improving the labour market relevance of higher education and graduate outcomes.

Policies outside the higher education domain that can affect labour market relevance and outcomes

Policy makers also need to take into account policies outside the higher education domain that can affect the labour market relevance and outcomes of higher education, and how these broader policies may interact with those aimed at the higher education system (Table 6.2).

The choice of policy levers depends on a range of contextual issues. These include the structure and characteristics of the higher education system; how the system is governed or steered; and its broader social and economic context. This applies when considering multiple policy levers used together. Various combinations of policy levers may be more effective in some contexts than others.

This chapter looks at the effectiveness of current policy levers in Norway through the lens of two key aims that can enhance the labour market relevance and outcomes of the higher education system:

- Aligning higher education with the changing needs of the labour market.
- Helping students succeed in higher education and the labour market.

In order to do achieve these aims, government objectives need to be effectively co-ordinated across agencies, ministries and different levels of government. This chapter concludes with an examination of how effective these objectives are co-ordinated in the Norwegian context.

Table 6.2. Policies outside the higher education domain that can affect labour market relevance and outcomes

Policy area	How policies affect labour market relevance and outcomes of higher education
Schools	• Lack of co-ordination between levels of government in the schools sector could affect student preparedness for higher education.
Employment	• Co-ordinated wage structures and settlement processes between employers and trade unions and resultant compressed wages could reduce incentives to participate in higher education. • Labour laws that promote permanent contracts and protect existing employees can make it difficult for new graduates to enter the labour market or find jobs that match their skills levels.
Skills assessment and anticipation	• Lack of co-ordination in the collection and dissemination of labour market information could reduce its effectiveness for the higher education system.
Regional and local policies	• Shared arrangements for school education between national, regional and local governments diffuses the responsibility for the provision of school education, which requires co-ordination between the levels of government to ensure alignment between the skills developed in upper secondary school and the skills needed to succeed in higher education. • Increasing engagement with higher education institutions by regional governments may cause co-ordination issues with the national government, which has its own agenda and approach to higher education.
Immigration	• Well-designed immigration policy that supports the acquisition of the Norwegian language, deeper integration into the social life and culture of Norway, and flexible visa and hiring procedures can attract the best international students and academics, which can have a positive effect on the internationalisation of the higher education system and the competitiveness of the economy.
Innovation	• Innovation policy can affect skills development and labour market outcomes by shaping both the supply of skills (e.g. enhancing the skills of students who participate in research) and the demand for skills (e.g. fostering new technology and business processes).
Housing	• High levels of home ownership can hinder student and graduate mobility; high rents in metropolitan areas could discourage students from participating in higher education.

Aligning higher education with the changing needs of the labour market

Ensuring students develop the high-quality skills needed in the labour market

One of the core missions of higher education is to produce graduates with strong professional and discipline-specific knowledge and skills. Implicit in this is the expectation that higher education will also help students develop solid transversal skills. The importance of these transversal skills was recognised in the White Paper on Quality Culture in Higher Education (Meld. St. 16), which noted that the majority of occupations in 2020 will require expertise that is not considered crucial in today's world. Consequently, Norway needs professionals who are capable of exercising ethical reflection, creative problem solving and critical thinking; and who are able to manage complex and ambiguous information at the same time as collaborating across geographical, academic and cultural boundaries. The ability of higher education to develop higher-level professional and discipline-specific skills along with a strong mix with transversal skills is a challenge for Norway as its economy continues to diversify and transform.

Norway's government uses a range of measures, such as the accreditation process and performance agreements, mandated collaboration with social partners, and support quality

in learning and teaching, work-based learning and lifelong learning, to enhance the labour market relevance and outcomes of higher education. However, to ensure that the system is keeping pace with the changing skills needs of today and in the future, higher education institutions will need to be further encouraged to engage in effective practices to develop the high-quality skills needed in the labour market.

Accreditation and quality assurance

Higher education institutions are required to demonstrate the labour market relevance of their programmes as part of the programme accreditation process, as outlined in the regulations on academic supervision of education quality in the Universities and University Colleges Act (2005). In 2011, programme accreditation regulations were revised to include criteria on academic and discipline relevance (Kantardjiev and Haakstad, 2017). Section 4.2 of the regulations requires higher education institutions to describe the relevance of each programme for working life and/or continued studies by outlining the skills developed in the programme and how those skills align with the labour market (Nord University, 2011). The assessment of the labour market relevance of programmes is often informed through dialogue with employers, but there are concerns about the robustness and validity of this consultation process (Kantardjiev and Haakstad, 2017).

The regulations were further revised in 2017 to place a greater emphasis on labour market relevance. Programmes now "must be professionally updated and clearly relevant to further studies and/or work life" (Norwegian Ministry of Education and Research, 2017b). The requirement to demonstrate labour market relevance is thus one of several quality criteria examined during the accreditation process conducted by Norwegian Agency for Quality Assurance in Education (NOKUT) at the institution level and by accredited institutions at the programme level. In addition, the regulations state clearly that institutional accreditation conducted by NOKUT must include one representative from "social or working life", which ensures that the perspective of social partners is captured during the accreditation process (Norwegian Ministry of Education and Research, 2017b).

While the regulatory policy levers used in Norway are relatively non-intrusive, when policy makers use more prescriptive policy levers, such as these, they ensure that the action is informed and underpinned by strong consultation processes that build consensus.

Collaboration between higher education institutions and social partners

A key policy lever in Norway to help higher education institutions work better together with social partners is the mandated co-operation between higher education institutions and social partners through the Councils for Co-operation with Working Life (RSAs). The RSAs were created in 2011 by the Norwegian government to facilitate a more structured and binding collaboration between higher education and the world of work and strengthen the labour market relevance of degree programmes and continuing education and share information.

The establishment and operation of the RSAs are outlined in guidelines developed by the Ministry of Education and Research, but higher education institutions have some flexibility in their approach. For instance, each RSA must include social partners and student representatives, but they may also have representatives from other sectors, particularly from non-governmental organisations. They can be created within a single institution or jointly with other institutions. The RSA can also be added to existing forums.

Overall, Norway's social partners and their umbrella organisations want to play an active role in the RSAs (Turmo and Ellingsen, 2016). As a result, an evaluation of the RSAs shows that they meet their primary goal of fostering dialogue and understanding between higher education and the workplace. In addition, almost 70% of external stakeholders on the councils are supportive of more work-based learning opportunities for students (Tellmann et al., 2017). However, the RSAs have not had as much success in terms of enhancing the labour market relevance of higher education, which is the key objective. In addition, collaboration is not as deep or effective as envisioned (Tellmann et al., 2017).

Various shortcomings limit the effectiveness of the RSAs. The flexibility in the guidelines can lead to innovative, individualised approaches, but it has also led to significant variation in the quality and effectiveness of the RSAs. As RSAs are institutionally focused, there are few avenues for sharing good practice and peer learning across the higher education system. The variation across the RSAs and their different approaches could be turned into a strength, but there appears to be no mechanism to support peer learning between RSAs, which could help make the practice more effective across the higher education system. In addition, to better inform programme design and delivery, collaboration should also take place at the programme/faculty level, which does not currently occur with the RSAs. Canada's experience with programme-level collaboration may provide valuable insights on how to improve the RSAs (Box 6.1).

These two regulatory policy levers (i.e. the inclusion of labour market relevance criteria in programme and institutional accreditation and the requirement to collaborate with social partners through the establishment of RSAs) generally work well together and reinforce each other's individual impact. The requirement to establish RSAs helps higher education institutions meet the criteria for programme and institutional accreditation. However, their combined value could be strengthened if the RSAs were more effective and there were more opportunities to share good practice across the higher education system.

Another key mechanism to build collaboration between higher education institutions and social partners is staff mobility between the two sectors, which enables academics to work outside the system for a certain period of time, and for workers in the public and private sector to work inside the system. However, there is limited use of this practice, and no institutional plans to use it beyond a few key fields where it is well-established (Frølich et al., 2018). This type of arrangement may be constrained by the appointment and promotion regulations for teaching and research academic posts, such as the requirements of a certain minimum qualification to teach and the role of research in career progression should social partners personnel wish to stay long-term in the academic profession.

Performance agreements

Norway began using performance agreements as a regulatory tool to steer the higher education system in 2016, following the recommendation for multi-year performance agreements by an expert panel in 2015 (see Box 6.2). The most recent round of higher education mergers, which reduced the number of institutions from 33 to 21, was the final impetus for the introduction of performance agreements (Larsen et al., 2017). By providing clearer institutional profiles and a greater understanding of the roles different institutions play within the higher education system, the agreements address the concerns about the fragmentation of the higher education system identified in the Stjernø Commission in 2008 (Reichert, 2009). The primary goals of the performance agreements are therefore to enhance the quality of higher education and support institutional diversity within a cohesive system, while giving institutions flexibility in how they will achieve these goals.

Box 6.1. Effective programme-level collaboration between higher education and social partners in Canada

Canadian colleges offer a wide range of study programmes from short-cycle at ISCED level 5 to doctorate programmes at ISCED level 8. To ensure the participation of social partners in curriculum design and development at the programme level in higher education, most provincial governments of Canada have passed legislation requiring colleges to establish "programme advisory committees" (PACs).

The use of PACs is most prescriptive in the province of Ontario, Canada's largest jurisdiction. In 2002, the Ontario government implemented the Ontario Colleges of Applied Arts and Technology Act, which requires boards of governors at all public colleges to establish a PAC for each programme or cluster of programmes. These PACs generally consist of 5 to 12 members and are composed of college staff, students and a "cross-section of persons external to the college who have direct interest in and a diversity of experience and expertise related to the particular field occupation area addressed by the programme" (Ontario Ministry of Training, Colleges and Universities, revised 2009). Individual PACs are able to tailor their mandates, but they generally provide a venue for social partners to:

- Identify and validate the skills that graduates from specific programmes need to find employment in associated occupations.
- Provide suggestions for content to be included in the programme to maintain its labour market relevance.
- Support the development of programme performance indicators.
- Review the feasibility of new programmes, including part-time and customised opportunities for learning.
- Provide insight and advice into professional issues, emerging legislative issues, employment trends, technological change and new developments related to the programme's labour market relevance.
- Suggest and support experiential educational opportunities in companies, including field placements, clinical experience, co-operative experiences, and student field trips to develop key labour market relevant skills.
- Recommend and advise on employment opportunities for both students and graduates.

A survey of PAC members from Ontario and other Canadian jurisdictions found that PACs are delivering on their key mandate, and the vast majority of PAC members felt that PACs currently play an essential role in higher education and that this would increase in the future (Knowledge in Power Consulting Inc., 2017). External members on PAC reported a high level of participation in programme design and delivery:

- 91% reported to have provided input to curriculum development, reviews, and updates.
- 86% contributed to evaluations of existing programmes.
- 83% facilitated students' exposure to work-based learning.
- 77% identified requirements for new programmes.
- 69% helped to establish programme objectives.
- 66% advised on the enhancement of learning materials and technical equipment.

A telling success of the PAC system is that higher education institutions in Ontario which have transitioned from colleges to universities have decided to maintain their PACs even though they are no longer required by law (Knowledge in Power Consulting Inc., 2017).

Sources:
Knowledge in Power Consulting Inc. (2017), *Academic-Employer Connections in Colleges and Institutes: The Role of Program Advisory Committees*, Colleges and Institutes Canada, Toronto.
Ontario Ministry of Training, Colleges and Universities (revision 2009), Colleges of Applied Arts and Technology: Framework for Programs of Instruction, Minister's Binding Policy Directive, Ontario Ministry of Training, Colleages and Universities, Canada.

Box 6.2. Evaluation of Norway's performance funding model for higher education institutions

The basis of the current system for funding higher education institutions in Norway was developed in 2002 as part of a broader quality reform, and in response to the growth in student numbers and costs in higher education. The major change to the funding system was the introduction of performance-based funding (OECD, 2006).

In 2014, the government established an expert panel to review the funding system and determine whether it was meeting the following goals:

- Stimulating quality development in teaching and research.
- Contributing to diversity within the higher education system.
- Fostering higher education engagement with society and business.
- Raising institutional autonomy and accountability.
- Encouraging a cost-effective use of resources.
- Providing long-term financial stability for key research programmes, while encouraging competition for grants in Europe and internationally (Norwegian Ministry of Education and Research, 2015).

The expert panel found that the overall funding model was operating well, but that small improvements to the system could be made (Norwegian Ministry of Education and Research 2015). However, the panel noted that the funding model was developed at a time when the key goal was to encourage more people to participate in higher education, and suggested that the emphasis should be moved to quality, completion, internationalisation, and collaboration between higher education stakeholders (Norwegian Ministry of Education and Research, 2015).

Among the key findings, the panel noted that the funding system did not promote differentiation in institutional profiles, as it provided similar incentives for all institutions. To help ensure diversity in the system, the panel recommended:

- Introducing three- to four-year performance agreements with a portion of the fixed component of the block grant linked to the agreements. The agreements should encourage institutional differentiation and quality improvements through the development of quality in education and research, collaboration with industry and society, and institutional profiles.
- Maintaining the existing percentage of funding provided through the fixed or basic component of the higher education block grant as it has facilitated institutional autonomy.
- Maintaining the distribution in funding between institutions on the basis that it reflected legitimate historical and structural decisions which were aligned with the unique missions and mandates of individual institutions.

As a result of this recommendation, the government amended performance funding in 2017 to create indicators that reward higher education institutions that increase their number of graduates and revenue from third parties. The government also provided additional performance funding to encourage the further use of international exchanges, including the ERASMUS+ programme (Norwegian Ministry of Education and Research, 2017c).

Sources:
Norwegian Ministry of Education and Research (2017c), *Orientering om statsbudsjettet 2018 for universitet og høgskolar: Mål for universitet og høgskolar, budsjett og endringar i løyving og finansieringssystemet*, Norwegian Ministry of Education and Research.
Norwegian Ministry of Education and Research (2015), Finansiering for kvalitet, mangfold og samspill: Nytt finansieringssystem for universiteter og høyskoler, Norwegian Ministry of Education and Research.
OECD (2006), *Funding Systems and Their Effects on Higher Education Systems: National Study – Norway*, prepared by N. Frølich, Nordic Institute for Studies in Innovation, Research and Education, OECD Publishing, Paris.

The government has taken an incremental approach to the implementation of the performance agreements, starting with five higher education institutions in 2016. By 2019, all higher education institutions will have a performance agreement in place. This approach will allow policy makers and institutions to learn from the process and adjust it before it is fully implemented.

The performance agreements are developed through extensive dialogue between the ministry and each higher education institution in order to achieve consensus on institutional objectives. The point of departure is the institution strategy, and there are no mandatory indicators. The qualitative and quantitative indicators are measures suggested by the institutions themselves (Larsen et al., 2017).

The current performance agreements support labour market relevance directly by requiring the five institutions to deliver programmes that develop certain skills needed in the labour market and use certain practices, such as collaboration with social partners and international exchanges, which can enhance the labour market relevance of programmes and outcomes of higher education. They furthermore support labour market relevance by ensuring institutional diversity and the development of a wide range of skills (Table 6.3).

Table 6.3. High-level objectives in initial performance agreements

Østfold University College	University College of Southeast Norway	Norwegian University of Science and Technology (NTNU)	University of Oslo	University of Stavanger
Develop co-operation with institutions in the Oslo/Akershus region Offer five-year teacher education to ensure the region's access to qualified teachers Develop a clearer competence profile for the university and increase co-operation across the institution	Develop integrative digital administrative procedures and processes, and learning and teaching methods to connect staff, social partners and students Develop and strengthen interaction and integration with knowledge-intensive businesses to develop new work-oriented education programmes and research and development activities Develop and strengthen co-operation between the university and the field of practice	Raise the quality of the study portfolio through co-ordination and efficiency Strengthen the pedagogical competence and develop a system of educational merit Plan a future-oriented, integrated campus that can be a model for future public developments in Norway Increase innovation activity and partnerships with industry clusters Raise the quality of research through an. emphasis on scientific publication with high quality and international impact	Increase education quality and internationalisation Increase research activity in Horizon 2020 Increase international research, education and innovation co-operation	Increase innovation, entrepreneurship and knowledge, including in areas of energy, sea, smart cities and health technology Increase volume of students' innovation and entrepreneurship activities linked to working life Strengthen digital competence and increase internationalisation in teacher education Promote internationalisation and international mobility

Source: Norwegian Ministry of Education and Research (2016), Statsbudsjettet for 2017 kap. 260 - Tildelingsbrev for Høgskolen i Østfold, Sørøst-Norge, Norges teknisk-naturvitenskapelige universitet (NTNU), Universitetet i Oslo og Universitetet i Stavanger.

Funding is not currently linked to the objectives in the performance agreements and they are not contracts in the legal sense. However, the agreements are part of the ministry's annual letter to higher education institutions outlining the funding allocation for the year,

and the ministry has indicated that it intends to link performance agreements and funding in the future, as recommended by the expert panel (Larsen et al., 2017).

The staged approach to implementing the agreements across Norway is designed to help policy makers and institutions learn from the process before it is fully implemented. This could provide an opportunity to make them more systematically targeted towards improving the labour market relevance and outcomes of higher education. Norway could examine how other countries use labour market outcome indicators and promote practices such as work-based learning to improve the labour market relevance of higher education through the performance agreements.

Quality in learning and teaching

Targeted funding to support quality in learning and teaching

The Centres for Excellence in Education Initiative (SFU) is a key measure to improve the quality of higher education and foster more innovative learning and teaching. The Centres for Excellence were initially proposed by the Stjernø Committee in 2008 and were formally launched in 2010 by the NOKUT. The centres play an important role in enhancing the labour market relevance of higher education by developing and disseminating good learning and teaching practices in their particular domains and building stronger interactions between students, academic staff, employers, relevant professional bodies and the wider society (NOKUT, 2016).

The Centres for Excellence are based in higher education institutions which operate independently or in partnership with other organisations. Funding is provided on a competitive basis with proposals assessed by an expert panel established by NOKUT. The panel makes recommendations to the NOKUT Board, which is the decision-making body. The three rounds of funding in 2011, 2013 and 2016 have led to the establishment of eight Centres for Excellence in Education across Norway:

- bioCEED – Centre for Excellence in Biology Education (University of Bergen, University Centre at Svalbard (UNIS) and Institute of Marine Research)
- CCSE – Centre for Computing in Science Education (University of Oslo and University College of Southeast Norway)
- CEFIMA – Centre of Excellence in Film and Interactive Media Arts (Norwegian Film School, Inland Norway University of Applied Sciences)
- CEMPE – Centre of Excellence in Music Performance Education (Norwegian Academy of Music)
- Engage – Centre for Engaged Education through Entrepreneurship (Norwegian Institute of Science and Technology and Nord University)
- ExcITEd – Centre for Excellent IT Education (Norwegian Institute of Science and Technology and Nord University)
- MatRIC – Centre for Research, Innovation and Coordination of Mathematics Teaching (University of Agder)
- ProTed – Centre for Professional Learning in Teacher Education (University of Oslo and University of Tromsø)

The Centres of Excellence have successfully aligned programmes with broader higher education strategies, supported relevant research in their areas of teaching, and led to

better and more collaboration among academic staff (Carlsten and Vabø, 2015). However, the centres' work has not been integrated enough into the institutions.

Establishing a Centre for Excellence dedicated more broadly to learning and teaching in higher education could raise the importance of quality teaching and ensure that all discipline areas have access to information and good practices on how to improve learning and teaching across higher education.

A new agency will promote quality in universities and university colleges, tertiary vocational education and artistic research through national and international incentive schemes. The new organisation, which took effect in January 2018, is made up of three public sector agencies, the Norwegian Centre for International Cooperation in Education (SIU), the Norwegian Agency for Digital Learning in Higher Education (Norgesuniversitetet) and the Norwegian Artistic Research Programme (PKU). The agency will also be responsible for establishing a new national arena for quality in higher education, and will take over responsibility for the Textbook Committee from the Norwegian Association of Higher Education Institutions (UHR) and for the Centres for Excellence in Education Initiative (SFU).

The new agency continues to facilitate access to higher education; support flexible modes of teaching and learning by stimulating the creative and competent use of information and communication technology (ICT) and better understanding of the skills needs of society and labour market and the role of technology use in higher education to develop those skills. In 2016, the agency's predecessor organisation (the Norwegian Agency for Digital Learning in Higher Education) established an Expert Group for Work and Digital Learning, composed of academics, employers, trade union representatives and students, to support greater labour market relevance in higher education. The expert group is developing and disseminating information on how higher education institutions can use digital learning methods to strengthen education co-operation with social partners and contribute to the development of labour market relevant skills (Norwegian Agency for Digital Learning in Higher Education, n.d). The expert group also undertakes research on innovative technology-based education.

Merit system to promote high-quality teaching in higher education

In its response to the White Paper of Quality Culture, the government requires higher education institutions to develop pedagogical merit systems to encourage more teaching initiatives and reward high-quality teaching based on documented results. This approach is in its infancy, but all institutions are aiming towards implementation in the coming years. Introducing a merit system that rewards academic staff for their teaching skills, including in the recognition of quality teaching as a criterion in academic career progression, should promote innovative learning and teaching. However, the government should ensure that this initiative is evaluated to assess its effectiveness.

Measuring student engagement

Surveying students on their engagement with the study process can provide greater incentives to implement innovative practices at institutions that aim to raise the quality of learning and teaching. The student satisfaction survey, Studiebarometeret, conducted by NOKUT gathers information and views from students on a range of quality issues that capture some key elements of engagement on a periodic basis, such as participation in work-based learning, prevalence of certain teaching approaches, and exposure to internationalisation. However, the survey does not include questions that focus on how much students engage with different practices that could help them develop labour market relevant skills on a regular basis or in any great depth.

A number of other OECD countries collect information on student engagement at the programme, field of study and/or institutional level (Box 6.3). This additional information would provide greater help for students in their choice of study. It could also be a useful measure of the quality of learning and teaching in institutions and could be included in performance agreements.

Box 6.3. National Survey of Student Engagement in the United States

In the absence of data on learning outcomes or learning gain in higher education, the labour market outcomes of higher education graduates and student satisfaction surveys often become the de facto measures of the quality of higher education institutions. While these tools provide useful information for prospective students, higher education institutions and governments, they do not provide any detail about the factors and activities in higher education underlying labour market outcomes or student satisfactions results.

Student engagement surveys, which contextualise the results of student satisfaction surveys and labour market outcomes, can provide more nuanced information to support quality assessments and support institutional planning. Student engagement surveys achieve this by asking students about their behaviour and approaches to learning, and about the learning and teaching practices in higher education and the support provided by institutions.

The National Survey of Student Engagement (NSSE) in the United States, for instance, seeks detailed information from both first-year and senior students in four thematic areas:

- Academic challenge, e.g. higher-order learning, reflective and integrative learning, learning strategies, quantitative reasoning.
- Learning with peers, e.g. collaborative learning and discussions with diverse others.
- Experiences with faculty, e.g. student-faculty interaction and effective teaching practices.
- Campus environment, e.g. quality of interactions and supportive environment.

Responses to these thematic areas provide stakeholders with detailed information about students and higher education institutions. This information has been particularly useful to higher education institutions as they seek to improve learning, teaching and overall quality. Several universities have publically documented their actions to improve quality in the wake of their NSSE results, and many of these actions are provided to NSSE so that they may be disseminated to other higher education institutions.

In 2018, around 500 American higher education institutions participated in NSSE, and it has been administered in higher education institutions in other OECD countries, such as Canada, Mexico and the United Kingdom. Ireland, seeking to gain a better understanding of its students and higher education system, developed the Irish Survey of Student Engagement (ISSE) based on the NSSE.

Sources:
National Survey of Student Engagement (n.d.a), "Participating institution search", National Survey of Student Engagement Website, Center for Postsecondary Research, Indiana University School of Education, http://nsse.indiana.edu/html/participants.cfm (accessed on 20 May 20118).
National Survey of Student Engagement (n.d.b), "Engagement indicators", National Survey of Student Engagement Website, Center for Postsecondary Research, Indiana University School of Education, http://nsse.indiana.edu/html/engagement_indicators.cfm (accessed on 20 May 20118).

Work-based learning

As discussed in Chapter 5, work-based learning is one of the most effective ways students can develop skills valued in the labour market. However, there are no policy levers directed at ensuring the use of work-based learning in the Norwegian higher education system. Some programmes, such as health, teacher education and engineering, have a long tradition of integrating workplace practice periods in the curriculum. In contrast,

work-based learning is particularly low in other fields of study, such as arts and humanities.

With the notable exception of the health and education sectors, the broad public sector, including the national and regional government administration, government agencies, and other organisations that are fully or partly financed by public funding, do not provide work-based learning to students, despite employing almost 50% of all higher education graduates (Næss, 2011). Based on its employment profile, the public sector could engage primarily students in the arts and humanities, social sciences, and law during their studies to convey a range of skills to these students that would facilitate their transition to the labour market. Arts and humanities and social science are the two fields of study with relatively weaker labour market outcomes in Norway (Støren and Wiers-Jenssen, 2016), and could benefit most from work-based learning (Thune and Støren, 2015). A stronger involvement of the public sector through internships and project-based and research assignments would also benefit the government in its hiring practices by creating a pool of highly skilled individuals with previous experience in the workplace. The government could encourage more widespread use of work-based learning in programmes where it is uncommon through performance agreements with institutions.

Norway's private sector, particularly large companies, are keen to offer training and internship places to higher education students, as trainees may be future recruits. However, the majority of Norway's employers in the private sector consist of small and medium-sized enterprises (SMEs) and they find it difficult to offer work-based learning due to a lack of resources. SMEs are more likely to lack the financial resources to invest in work-based learning, despite the possibility of high returns on investment. They also have worse access to information and more co-ordination problems with their workers than larger firms.

SMEs are unlikely to benefit from tax subsidies to encourage work-based learning as many have only limited or no tax liability. Therefore, the Norwegian government needs to encourage greater co-operation between SMEs so that they can share administrative expenses and be in a better position to reach out to higher education institutions with offers of internships, research projects and other work-based learning opportunities for students. This would help SMEs build networks and relationships with higher education institutions, which could lead to greater involvement in applied research and other projects.

Lifelong learning and continuing education

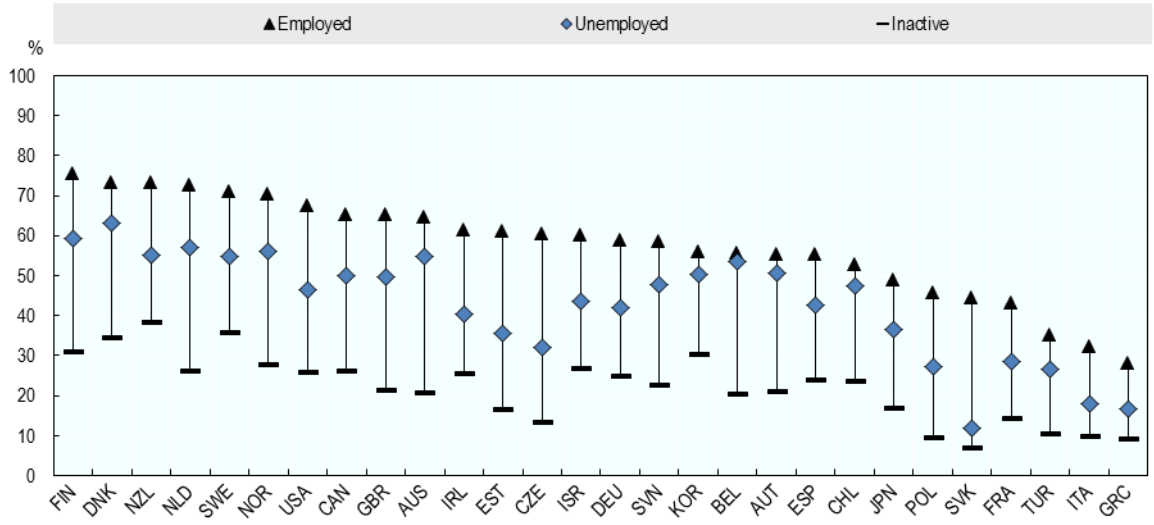
Norway has a well-developed lifelong learning policy that offers opportunities to start or continue higher education later in life. It includes:

- Admission to higher education for adults based on age and the recognition of prior learning and work experience.
- The ability for employees to take up to three years of unpaid leave to pursue studies if they have worked for at least three years and have been employed by the same employer for the last two years.
- Student access to financial assistance.
- The provision of career guidance at the regional level.
- Free basic skills and language training for immigrants.

Norway has one of the highest rates of adult participation in education and training among OECD countries (Figure 6.1).

Figure 6.1. Adult participation in education and training, by employment status

Percentage of adults, 25-64 year-olds, 2012 or 2015



Note: Data for Belgium refers to Flanders and data for the United Kingdom refers to England and Northern Ireland.
Source: OECD (2017b), *OECD Skills Outlook 2017*, http://dx.doi.org/10.1787/9789264273351-en.

StatLink http://dx.doi.org/10.1787/888933727254

Higher education institutions also provide continuing education for adults through *etterutdanning* courses, which do not have any exams or credits, and *videreutdanning* courses, which include evaluation and awards credits. A key feature that differentiates continuing education programmes from a bachelor's or master's programme is that they are usually offered as short-cycle programmes (ranging from 5 to 30 credits). Participation in continuing education normally requires the same admission requirements as regular higher education programmes. Continuing education students can use the credits they accumulate through the *videreutdanning* courses towards a degree.

Continuing education in Norway is funded by the government and the private sector, although costs are usually covered by the students themselves on the basis that they undertake courses while they are working (Bjerkaker, 2016). As of 2016, the number of part-time students in continuing education (21 852) was more than double the number of full-time students (9 972) (Bjerkaker, 2016).

In 2014, students enrolled in continuing education courses that did not involve exams or credits (*etterutdanning*) in the following areas: management and organisation development; health and sports; humanities, religion and faith; ecology, environment, leisure and farming; languages; social science and politics; maths, industry and technics; economy and ICT; sales and services; and transport and communication (Bjerkaker, 2016).

Continuing education courses in the more formal *videreutdanning* strand that requires exams and provides students with credits are offered in a range of fields of study. For example, the Norwegian University of Science and Technology currently offers Applied Computer Science; Information Security; Interaction Design; Oil and Gas Technology; Product and System Design; Ship Design; Simulation and Visualisation; Sustainable Manufacturing; and International Business and Marketing (NTNU, 2018).

The flexibility provided by continuing education helps Norwegians develop new skills and undertake periodic training to update their existing skills and meet changing labour market needs without necessarily enrolling in a complete degree programme. The importance of continuing education was recognised in the Norwegian Strategy for Skills Policy 2017-2021, which highlights the need for further development of continuing education in vocational colleges and higher education institutions (Norwegian Ministry of Education and Research, 2017c).

Ensuring the system offers a broad range of qualifications

Advances in technology, enhanced global competition, and the changing structure of work are driving the transformation of Norway's economy towards one that is more knowledge and service-based which, in turn, shifts the demand towards higher-level skills and qualifications. Even the traditional sectors of Norway's economy, such as oil and gas, shipbuilding, and aquaculture, are adjusting their skills requirements in response to technological change. The health, education and social services sectors of the economy have seen the largest growth in employment share in recent years, and these fields are projected to be in demand in the future. To exploit opportunities arising from these developments in a high-cost labour market, and to ensure that nobody is left behind, Norway's higher education system will need to produce not only more graduates with higher-level skills and strong skills mixes, but also maintain a broad range of qualifications. Norway could also supplement its domestic talent by attracting international talent to its higher education system in order to meet the demand for skills.

Norway has a range of policy levers at its disposal to achieve these goals. It uses performance agreements to ensure institutional diversity, and a range of regulatory and funding levers to encourage enrolment, pathways and completion across the higher education system and in certain fields of study.

National Qualifications Framework for Lifelong Learning

The Norwegian Qualification Framework for Lifelong Learning (NKR) supports labour market relevance by facilitating the transition between all levels of education and training both inside and outside of Norway, and by demonstrating to social partners the skills that graduates have upon the successful completion of their programme. Social partners have been closely involved in the development of the NKR as they see it as an important tool to strengthen the dialogue between education and training and the labour market (CEDEFOP, 2017).

However, the NKR is not consistently applied in practice and the sectors of the Norwegian education system are organised in silos. This can impede flexible transitions from upper secondary education to short-cycle tertiary education with a vocational orientation at the ISCED 5 level, and from academic programmes at the ISCED 6 level and above to ISCED 5 programmes and reverse (OECD, 2014).

The NKR was referenced to the European Qualifications Framework (EQF) in 2014, at which time the EQF advisory group raised questions about the levelling of qualifications at levels 5 and 6, particularly the relationship between the certificate for post-secondary vocational education and training (level 5.2) and the partial bachelor (level 6) (CEDEFOP, 2017). This risks creating confusion among employers about the different qualifications in Norway, particularly multinational organisations or those located outside Norway.

Institutional diversity

The higher education system in Norway is moving away from the binary divide as university colleges merge with universities or apply to become universities in their own right (Arbo and Bull, 2016) (Figure 6.2). The Norwegian government has encouraged the merger of universities and university colleges as a way of enhancing competitiveness for resources and students (including through greater geographic coverage), to amalgamate similar study programmes and achieve efficiency, and to strengthen performance.

It has been shown that mergers in various higher education systems have resulted in larger and more comprehensive institutions that provide stronger academic programmes and better support services, more choice for students, and a greater capacity for organisational flexibility (Harman and Harman, 2003). The mergers in Norway are bringing together students and staff within and across a range of fields of study. This can provide more opportunities for innovation in learning and teaching, as well as preparing future professionals for inter and cross-sectoral collaboration after graduation.

But there is also a risk that the mergers could reduce the diversity of the higher education system. The absorption of smaller university colleges, which provide a range of programmes that are largely professional and vocational in nature, into larger, comprehensive, multi-campus universities could result in a smaller range of educational programmes on offer in the future. The performance agreements could be used to ensure that the mergers maintain the broad range of qualifications currently on offer. It will be important to monitor and evaluate the effectiveness of the performance agreements in achieving this goal.

As noted above, one of the primary goals of the performance agreements is to support institutional diversity within a cohesive system, while giving institutions flexibility in how they will achieve these goals. The performance agreements could therefore be used to ensure that the mergers do not result in a loss of the broad range of qualifications currently on offer. It will be important to monitor and evaluate the effectiveness of the performance agreements in achieving this goal.

Short-cycle programmes

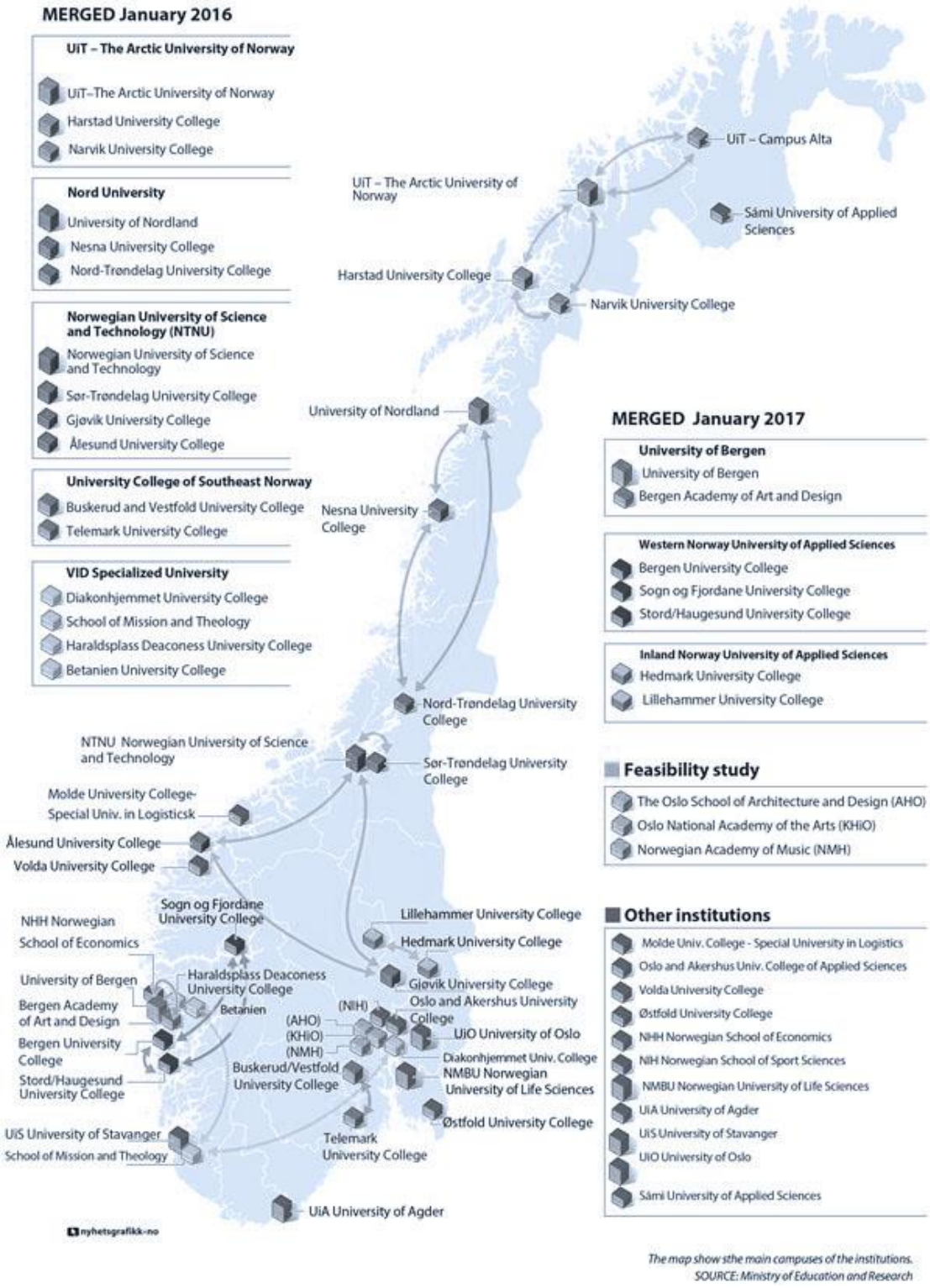
The whole range of higher education qualifications, including short-cycle qualifications are needed by Norway's labour market, and the delivery of short-cycle programmes is one of the priorities of the current Norwegian government.

Norway has signed up to the Bologna Process and is thus a member of the European Higher Education Area (EHEA). As part of this process, it has adopted a standard qualification structure, which is important for student mobility. However, despite this standardisation, higher education institutions continue to offer unique and diverse qualifications, such as short-cycle or partial bachelor's programmes (60 credits) at the ISCED 6 level (the University College Degree or Høgskolekandidatgrad), to meet labour market needs. These programmes develop more applied skills and are mainly delivered through the university colleges. Nonetheless, as noted above, it is unlikely that partial bachelor's programmes are recognised outside Norway, which could limit the mobility of their graduates and opportunities in other labour markets.

On the other hand, unlike many other countries in the OECD or the EHEA, Norway does not consider short-cycle tertiary education programmes at ISCED 5 level to be part of the higher education system. Many short-cycle qualifications at ISCED 5 level in Norway are delivered in the vocational education and training sector through tertiary vocational colleges. These short-cycle education programmes at ISCED 5 can provide important qualifications for occupations that bridge the gap between skilled trades and the

professions. They are often designed to provide students with professional knowledge, skills and competencies through practically based and occupationally specific programmes that prepare students to enter the labour market.

Figure 6.2. Mergers of public higher education institutions in Norway



Source: Norwegian Ministry of Education and Research.

Advanced level programmes

Higher-level qualifications will be increasingly important in Norway as it moves from a resource-based to a knowledge-based economy and many jobs become automated, however, Norway's attainment rates at master's and doctoral levels lag behind the OECD average and neighbouring countries. Students may need to be more aware of the importance of these higher qualifications to meet future labour market needs.

To encourage people in the labour market to upgrade their skills through advanced studies, the Research Council of Norway (RNC) developed the Public Sector PhD scheme in 2014 in addition to the existing Industrial PhD scheme in the private sector. These programmes provide financial support to public sector institutions and companies engaged in market-oriented activities, which allow their employees to take a doctoral degree relevant to their area of responsibility. The Industrial PhD scheme, in particular, is designed to support long-term, industry-oriented research that has the same level of scientific merit as the general doctoral degree education. Norway also encourages completion at the doctoral level through performance-based funding.

The 2012 evaluation of doctoral degree programmes in Norway shows that they are consistently regarded as high-quality programmes with good work and learning conditions for doctoral candidates (Thune et al., 2012). However, the relatively high age for first-degree graduates from higher education, a recent decline in the number of doctoral places funded by RCN, and the comparatively low financial returns to advanced studies in Norway may be discouraging students from undertaking or completing advanced degrees. In 2015, the earnings for master's and doctoral graduates were only 57% higher than the earnings of upper secondary education graduates in Norway, compared to an average of 98% across the OECD (OECD, 2017c). In comparison, the premium for a bachelor's degree was 13% higher than that of upper secondary education.

Norway's compressed wage structure also reduces the financial incentives for individuals to take part in higher education, particularly at master's and doctorate levels. More targeted incentives may be needed to attract students into advanced studies.

Attracting international talent

As noted in Chapter 5, international student mobility and other forms of internationalisation are important ways of developing important transversal skills that are valued in the labour market. Incentives to increase international student exchanges were announced in the 2016 budget and are included in the performance-based funding for higher education institutions. This measure is supported by the new public sector agency that has taken on the role of the Norwegian Centre for International Cooperation in Education (SIU), which promotes internationalisation in education in Norway.

International higher education students can also fill important skills shortages in Norway's labour market and, in turn, contribute to economic development, but as a small country, attracting and retaining international talent can be a challenge. Norway is among the OECD countries with the smallest proportion of international students across all levels of higher education, although international students at the doctoral level make up 20% of the entire cohort (OECD, 2017c).

Norway could follow the example of another non-English speaking country, the Netherlands, to attract international talent, particularly at more advanced higher education levels (Box 6.4). The Netherlands has developed a comprehensive strategy, known as the "Make it in the Netherlands", which supports the acquisition of the Dutch language, deeper integration into the social life and culture of the Netherlands, and flexible visa and hiring procedures. This strategy was informed by an evaluation which showed that

retaining 20% of international students would bring an additional EUR 740 million to the treasury in 2012 (Funk and Walenkamp, 2013). Norway has recently extended the job search permit for international students and researchers from 6 to 12 months, but other regulatory barriers exist, such as the requirements for a minimum salary and a financial deposit (Deloitte, 2016).

Box 6.4. Attracting international talent to the Netherlands

International students choose their destination based on a range of factors, including the language of instruction, support services and future prospects. English-speaking countries, such as the United States, the United Kingdom and Australia, host the largest number of students, but France, Germany and the Russian Federation also attract significant numbers (OECD, 2017c).

While France and Germany host the majority of international students in the European Union, and are far ahead of other European countries, the next most popular destination in Europe is the Netherlands, which mainly attracts European students (57% of its international students) (OECD, 2017c). Internationalisation has been a priority for the Netherlands over the last 10 years and has been the subject of two key white papers: The Borderless Good in 2008 (Dutch Ministry of Education, Culture and Science, 2008) and Into the World in 2014 (Dutch Ministry of Education, Culture and Science, 2014). Current measures to promote internationalisation include:

- The Dutch government funds an international network of Netherlands Education Support Offices (Neso) in 11 countries to promote Dutch higher education and encourage the mobility of students and academics. Neso offices are operated by EP-Nuffic, an independent, non-profit organisation for internationalisation in education.
- Dutch higher education institutions must sign a Code of Conduct (*Gedragscode Internationale Studenten*) before they can recruit international students or use services offered by the Neso offices. The code of conduct was introduced in 2006 to ensure the quality of international education in the Netherlands. Institutions undertake to abide by the rules in the code, including those relating to the recruitment and admission of international students and the provision of information and education. A national committee monitors compliance with the requirements in the code of conduct. The list of institutions which have signed the code is published on the DUO website, which administers the register (NUFFIC, 2015).
- The Dutch government provides scholarships to support both inward and outward mobility. The list of scholarships available are published on the Study in Holland website (www.studyinholland.nl/).
- Since 2007, Dutch students have been able to maintain access to student financial support while studying at a recognised programme in another country.
- Non-EU students are able to receive a student visa for the duration of their studies plus three months following graduation. Dutch higher education institutions are required to monitor the progress of student visa holders in their programmes and report to the Dutch Immigration and Naturalisation Service. Students need to gain a minimum of 50% of their annual course credits every year to stay in the country and continue their studies.
- International students on a student visa are legally allowed to undertake paid work for up to ten hours a week during term time and 40 hours a week during holiday periods, provided that they have obtained a separate work permit.
- EP-Nuffic provides prospective international students with generic information on studying in Holland through the Study in Holland website, a database of all international and English-taught programmes and courses offered by Dutch institutions, and a database of available scholarships. EP-Nuffic also provides information to Dutch students interested in studying abroad through a dedicated campaign, *WilWeg*.
- EP-Nuffic has developed an action plan to attract and retain international students

entitled Make it in the Netherlands. It aims to: ensure international students feel welcome; increase the number of international students interested in immigrating to the Netherlands, especially in top priority sectors; and keep strong ties with international alumni upon their return to their countries of origin. The five steps to achieve the main goals are: promotion of Dutch as a foreign language; streamlining student recruitment with labour market prospects, including simplifying the process for international students to join the Dutch labour market; cultural integration through customised programmes that bring international and local students together; simplifying regulatory matters and improving communication with international students to ease their transition into the Dutch culture; and promoting regional diversification by funding pilot projects in different parts of the country and supporting diversified approaches that reflect the particular needs of each region (NUFFIC, n.d.).

Sources:

Dutch Ministry of Education, Culture and Science (2014), *Into the World: Letter on the government's vision on the international dimension of higher education and VET*, Dutch Ministry of Education, Culture and Science, the Hague.

Dutch Ministry of Education, Culture and Science (2008), The Borderless Good, Dutch Ministry of Education, Culture and Science, the Hague.

NUFFIC (2015), *Education in the Netherlands: The Dutch education system described*, Organisation for Internationalisation in Education.

NUFFIC (n.d.), "Make it in the Netherlands, Study and work in Holland", The Dutch Organisation for Internationalisation in Education website, http://www.nuffic.nl/en/study-and-work-in-holland/make-it-in-the-netherlands (accessed on 27 March 2018).

OECD (2017c), *Education at a Glance 2017: OECD Indicators*, OECD Publishing, Paris, http://dx.doi.org/10.1787/eag-2017-en.

Allocation of student places

Mandated minimum number of student places

Some countries link the provision of higher education to the labour market by controlling the number of student places available in the higher education system. This can be done by allocating a specific number of places by field and level of study to higher education institutions, or by imposing floors or caps on the number of places. For instance, Austria, Canada, Denmark, and Poland cap the number of places available in higher education programmes with weak labour market demand and outcomes.

Norway does not generally impose floors or caps on places in higher education, and leaves higher education institutions to set the number of places they offer in various fields of study and at different levels. However, in some limited cases, policy makers ensure that higher education institutions maintain a minimum number of places in certain programmes to address skills shortages in the labour market and to meet societal needs. Since 2014, the Ministry of Education and Research has directed 26 higher education institutions to maintain or increase the number of places available in teacher education and health programmes to reach a combined total of 7 381 positions in teacher education and 6 939 in health programmes in 2017 (Norwegian Ministry of Education and Research, 2017d).

Additional student places to help meet labour market needs

Parliament may provide targeted funding to institutions outside the main funding process to address specific skill shortages. For instance, the 2017 national budget earmarked funding for the creation of 500 new study places in the ICT fields of study and 70 new

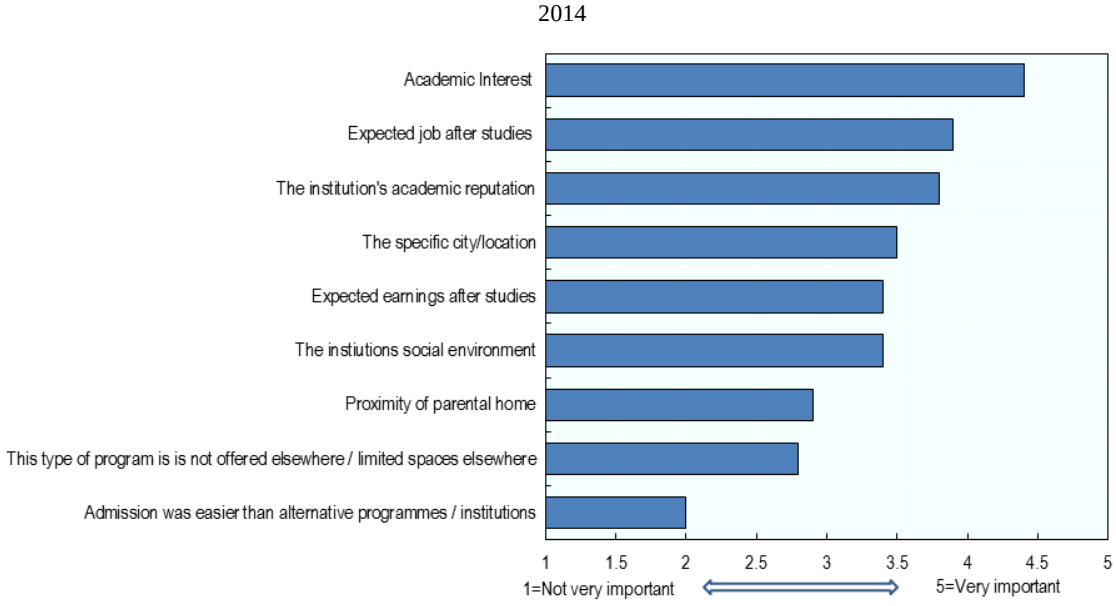
places for primary teacher education (Norwegian Ministry of Education and Research, 2016). In 2018, the national budget provided funding for 30 additional study places at Molde University College for its logistics programme, and another 30 places for vocational teacher education at the Oslo and Akershus University College of Applied Sciences (Norwegian Ministry of Education and Research, 2017c).

Helping students succeed in higher education and the labour market

Ensuring students have the information needed to make informed choices

Many factors play a role in shaping a student's decision about what to study in higher education (Figure 6.3). However, these factors can be shaped by government actions, such as the collection and dissemination of labour market relevant information, the provision of career guidance, and funding.

Figure 6.3. Factors that influence Norwegian students' choice of study



Source: Damen, M.-L. and S. Hamberg (2015), Studiebarometeret 2014: What explains students' overall satisfaction? A review of the main findings of the 2014 Norwegian national student survey, https://www.nokut.no/globalassets/studiebarometeret/2015/damen_marie-louise_hamberg_stephan_studiebarometeret_2014_what_explains_students_overall_satisfaction_6-2015.pdf.

StatLink http://dx.doi.org/10.1787/888933727273

Timely and reliable information about the labour market, including information about jobs that are currently in demand, jobs that are projected to be in demand in the future, earnings associated with different occupations, and the professional, technical and transversal skills that jobs require, can play an important role in shaping Norway's higher education system. This information can be used effectively by all actors within the higher education system to better align higher education to the labour market.

Labour market information – if reliable and effectively disseminated – can complement or enhance nearly all other levers that focus on labour market relevance and outcomes. Information is an essential complement for some levers: for instance, demand-driven funding (e.g. vouchers) will not work effectively unless students have sound information

(including good information about labour market needs and graduate outcomes) upon which to base their decisions.

It is uncertain whether Norwegian students respond most to general labour market information, institutional surveys, media coverage or advice from school teachers, family, or friends. Nonetheless, prospective students are also likely to consider their abilities and interests when making a decision about what to study. Therefore, providing them with information on specific programmes and institutions, including how students are learning and what they are achieving in these programmes, can be very helpful in deciding what and where to study. However, this information is not necessarily available at the institutional and study programme level in Norway. The government website (www.utdanning.no) could be expanded to provide richer and more detailed information to help guide students and thus make it a more effective online tool. This should include additional information on anticipated skills needs beyond the projections of the future demand for certain types of occupation as forecasted by Statistics Norway. It should also provide detailed labour market outcomes data by programmes and institutions and not just field of study (Box 6.5).

A 2013 evaluation of the career guidance services in Norway found that while three-quarters of surveyed students were aware of the utdanning.no website, only half have actually used it (IPSOS MMI, 2013). During OECD review team research in Norway, the Nordic Institute for Studies in Innovation, Research and Education identified the provision of more and better labour market information to help students make informed choices as one of the major policy challenges for Norway.

The White Paper on Quality Culture in Higher Education (Meld. St. 16) noted that Norway's prospective students needed better labour market information to make informed choices about programmes in higher education (Norwegian Ministry of Education and Research, 2016). In response, the government is planning to develop a single web portal to bring all the data sources together to make it easier for users to find information. It will be important to ensure that the portal is user friendly for students and that students are aware of the site and how it can be used to inform their study choices.

The Norwegian government has recently run several awareness campaigns to disseminate labour market relevant information to prospective students, especially to encourage enrolment in teacher education, nursing and some programmes in the science, technology, engineering and mathematics (STEM) domains. These campaigns are often timed to run during the lead-up to the application period for higher education. Some advertisements are specifically targeted at groups that are traditionally under-represented in key programmes and their related occupations in the labour market. For example, some advertisements have encouraged female students to pursue a career in STEM, and others have encouraged immigrants to enrol in health care programmes.

Career guidance

In Norway, the 1998 Education Act (amended in 2014) guarantees that all students within the secondary school system have access to career guidance to get advice on their choice of education and vocation, information about educational pathways in Norway and abroad, and knowledge about the labour market (Euroguidance, n.d.). Individual schools have flexibility for setting up their career guidance offering, but regulations require guidance staff to be up to date on educational options and labour market needs; however, no specific background or qualification is required for guidance counsellors.

Career guidance at schools is supported by the follow-up service (Oppfølgingstjenesten) for youth aged 16-21 who are not in education or work. The follow-up service offers career counselling and advice to young people on jobs, training and other ways to develop

skills, including basic skills training and programmes that lead to academic and professional qualifications. Young people can also access regional career guidance offices run by the Norwegian Agency for Lifelong Learning (OECD, 2014). However, the Office of the Auditor General of Norway (Riksrevisjonen) found that there was a lot of variation in the follow-up practices of students who had dropped out of upper secondary school: few students who received follow-up services were given concrete objectives, and there was not effective co-operation between the different follow-up services (Office of the Auditor General of Norway, 2016).

Box 6.5. Effective online tools to support student choice: The United Kingdom and Australia

The United Kingdom and Australia maintain government-sponsored websites that include information about graduate labour market outcomes broken down by study programme and higher education institution.

Unistats (www.unistats.ac.uk) has been the official website for comparing information about higher education study programmes in the United Kingdom since 2007. It is owned and operated by the four UK higher education funding bodies: the Office for Students in England, the Department for the Economy Northern Ireland, the Higher Education Funding Council for Wales, and the Scottish Council. The website allows users to search and compare programmes by field of study, qualification level, study mode (in-class versus online, full-time versus part-time), location and information on opportunities to study abroad. The website also provides:

- Student satisfaction results on each programme (where possible) from the National Student Survey (NSS).
- Information on jobs and salaries of graduates from specific programmes from the Destinations of Leavers from Higher Education (DLHE) survey.
- The share of students who continue in the programme after the first year of studies.
- Information on accreditation and relevant standards.
- A link to the institution website for information on the programme content, structure, teaching methods, assessment and tuition costs.

In 2015, the Australian Department of Education and Training launched a website to provide prospective students with information on Australian higher education institutions from the perspective of recent students and graduates. The Quality Indicators for Learning and Teaching (QITL) website (www.qilt.edu.au) includes information on the experience of students and how satisfied they are with the quality of teaching, learning resources and support services; how satisfied recent graduates are with their undergraduate and graduate programmes; the outcomes of graduates moving into full-time employment (including employability rates and median salary); and the views of employers (the direct supervisors of students) on the attributes of recent graduates, including their transversal and professional skills and work readiness. Prospective students can compare data between two distinct areas: institutions and field of study.

Sources:
Australian Government Department of Education and Training (n.d.), Quality Indicators for Learning and Teaching (QILT) website, http://www.qilt.edu.au/ (accessed on 27 March 2018).
Department for the Economy in Northern Ireland/Office for Students/Higher Education Funding Council for Wales/Scottish Funding Council (n.d.), Unistats website, https://unistats.ac.uk/ (accessed on 27 March 2018).

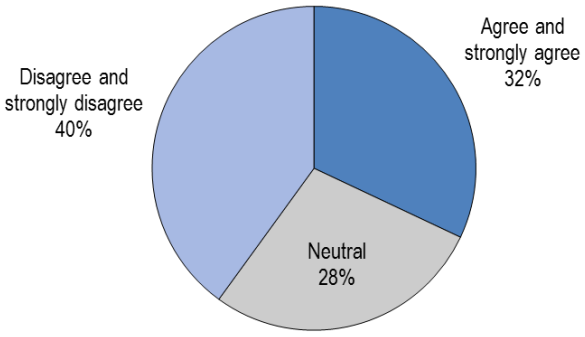
There are also signs that students are not getting clear information about higher education programmes and their labour market relevance. In a recent student survey, only one in three students in higher education state that they are aware of the labour market opportunities available to them (Figure 6.4).

The Norwegian Strategy for Skills Policy 2017-2021 stressed the importance of career guidance in meeting Norway's skills needs. It noted that knowledge about future skills needs must be put to use in career guidance services, and be made available to people who are about to make choices related to education and employment. It also emphasised

that career guidance early in the educational pathway may prevent and reduce dropout rates and poor choices in secondary education and later studies, as well as counteract traditional gender choices (Norwegian Ministry of Education and Research, 2017c).

Figure 6.4. Student awareness of labour market opportunities in Norway

Responses of students to the statement "You know what your opportunities will be like in working life when you graduate", 2016



Note: The figure presents the responses of bachelor's and master's students in some of the arts and humanities and social sciences fields of studies, including languages and literature, ethics and philosophy, regional and cultural studies, media and information, theology/religion, history and management and administration.
Source: Kantardjiev, K. and J. Haakstad (2017), Working Life Relevance in Norwegian discipline-oriented programmes, knowledge status and student perceptions, https://www.nokut.no/contentassets/5c0dd71da3cf49da98e9675673cceda1/kantardjiev_haakstad_working_life_relevance.pdf.

StatLink http://dx.doi.org/10.1787/888933727292

To improve career guidance in Norway, Skills Norway has been tasked with establishing a national e-guidance centre that makes career guidance available to the entire Norwegian population through professional career advisers by chat or phone (Skills Norway, 2017).

In addition, the committee, appointed by the government in 2015 to develop a comprehensive system of career guidance, recommended greater clarity in the roles of career counsellors at schools and the establishment of full-time positions where possible (Norwegian Ministry of Education and Research, 2016). The committee also recommended that staff who teach the educational choice subject or who act as career counsellors need to have appropriate training and qualifications in career counselling. They found that better collaboration between employers and the Norwegian Labour and Welfare Administration regional career counselling offices would help improve the quality of career guidance.

Ensuring students complete their study programmes

The time-to-completion and overall completion rates represent a pertinent labour market issue in Norway, as the Nordic economic model is predicated on high labour force participation in order to support the social welfare system. In addition, certain economic sectors are currently experiencing shortages that need to be timely filled in by graduates from the higher education system.

Concerns about low completion rates in higher education have led to a range of measures being used to help ensure students complete their programmes and gain a higher

education qualification, including admissions processes, mandated study contracts, performance-based funding, and student financial assistance.

Admission to higher education

As discussed in Chapter 5, Norway's admission process at the bachelor's level and for long first degree programmes at public higher education institutions is highly regulated and centralised, with the upper secondary school certificate (*generell studiekompetanse*) the main entry criterion for most programmes. Although admission is not open and applicants are not guaranteed a place in their preferred programme or institution, or even a place in higher education at all, 83% of applicants obtained a place in higher education in 2016 (Norwegian Ministry of Education and Research, 2017e). The admission process is more competitive for programmes such as medicine, dentistry and fine or performing arts, but less so in other fields of study.

The general ease of access and uniform standards raise questions about how well the admission process ensures the preparedness of students for higher education. Around 15% to 25% of the non-completion rate at the bachelor's level can be attributed to individuals who were poorly prepared for academic programmes (Hovdhaugen and Aamodt, 2009). In contrast, for master's and doctoral programmes, the ministry sets up minimum requirements, but Norway's higher education institutions can set additional or stricter admission standards to ensure that students have the skills needed to succeed in their studies.

The government has introduced new measures to raise the skills of school students and reduce dropout rates by improving the quality of teachers. The GNIST (SPARK) initiative is a national partnership between the Ministry of Education and Research, key stakeholders, the municipalities and regional governments aimed at increasing the quality and status of the teaching profession, teacher education, and school leadership. The initiative commenced in 2008 and includes a yearly teacher recruitment campaign. Stricter requirements for entry to teacher education programmes have been introduced as a follow-up to this initiative. Prospective teacher education students must now demonstrate stronger mathematics skills, a minimum competency in the Norwegian language, and complete a five-year master's programme.

Some academics believe that preparedness can be improved by giving higher education institutions more autonomy over admission requirements, especially in study programmes with elevated non-completion rates. Others suggested during meetings with the OECD review team that simply raising students' awareness of the skills requirements for certain programmes and higher education institutions could have an effect (Box 6.6).

Study contracts

To encourage more students to remain in higher education and complete their studies, higher education institutions are required to develop a study contract with students who have been admitted to courses of 60 credits or more (Universities and University Colleges Act [2005], Section 4-2).

The study contract requirement, which has been in place since 2003, outlines the responsibilities and obligations for both parties, and allows each party to better monitor progress towards completion. However, higher education institutions manage and develop these study contracts at the institutional level. A recent evaluation of the study contracts found that many higher education staff and students did not recognise that the key purpose of the contracts was to help students complete their studies within the prescribed period of time. Furthermore, the evaluation found that institutions frequently did not follow up on students until they had fallen considerably behind in their studies, often by

as much as an entire semester. The evaluation found the lack of common guidelines regarding the use of study contracts and the consequences for various regulations and practices was problematic. In addition, the different uses of study contracts across institutions and different reporting procedures made it difficult to monitor their effectiveness. The evaluation panel made a series of recommendations to address these issues, including more frequent monitoring of academic progress and more timely interventions to address problems early (Nordhagen, Dahle and Skjervheim, 2016).

Box 6.6. Aptitude tests to increase student preparedness for higher education in the Flemish Community, Belgium

In 2017, the Flemish Community in Belgium launched a mandatory, non-binding test for students in the final year of secondary school to help them choose a higher education programme that matches their strengths and interests. The test aims to raise students' awareness of the skills requirements for succeeding in higher education and certain fields of study. The ultimate goal of the test is to reduce dropout rates from higher education and time to complete studies.

The test is administered through a website and users have a choice of different modules such as "Basecamp", "Who am I", and "What do I want to do?" to help them understand their own interests, strengths and the professional opportunities in different fields of study. Prospective students can also take cognitive tests which assess their language, mathematics and reasoning skills. The website provides automatic feedback online that students can use to discuss options with their parents, teachers and career counsellors. As of March 2018, the Columbus website had been used by more than 18 000 students.

The test takes three hours to complete all modules. Schools can decide on the exact timing of delivering the various modules, but students cannot undertake the test at home (VLUHR, VLOR, Onderwijskiezer and Vlaams Ministerie van Onderwijs en Vorming, n.d.). Data is collected at the national level, since students must register with their Belgian national register number in order to participate.

The next steps for the Columbus test will include encompassing the transition to the labour market. At its pilot phase, Columbus was applied to engineering and teacher training programmes, but in the future it will be expanded to other higher education programmes (Department of Public Governance and the Chancellery, 2017).

Sources:
Department of Public Governance and the Chancellery (2017), *Flemish Reform Programme 2017*, Department of Public Governance and the Chancellery, Government of Flanders.
VLUHR, VLOR, Onderwijskiezer and Vlaams Ministerie van Onderwijs en Vorming (n.d.), Columbus website, https://columbus.onderwijskiezer.be/ (accessed on 27 March 2018).

Student financial assistance

Norway views free tuition in public higher education institutions and access to loans and grants through the State Educational Loan Fund (Lånekassen) as a way of making higher education accessible across all fields of study and stages of an individual's lifecycle. By law, therefore, public higher education intuitions in Norway are not allowed to charge students tuition fees. Norway is one of only six OECD countries (Sweden, Finland, Denmark, Estonia, the Slovak Republic, and Turkey) where higher education in public institutions is free of charge. In most Nordic countries, the existing high levels of taxation are widely accepted on the presumption that a wide range of social services, including free higher education, will be provided.

The State Educational Loan Fund ensures equitable access to education to all students by removing additional financial barriers to higher education. Through grants and loans to students, the fund ensures students, irrespective of geography, age, gender, skills, or socio-economic background, have the necessary financial support to cover living costs and therefore avoid student poverty, long hours spent earning money and/or being forced to rely on family support while studying. In this way, the fund supports the development of a highly-qualified workforce to meet the needs of Norwegian society. The amount of financial assistance provided to students does not vary by field of study or geographic location.

The fund is also used to encourage students to complete their studies. By providing a form of student debt relief, the government encourages students to complete their studies and enter the labour market. Since 2002, students have been able to convert up to 40% of the loan into a grant if they complete their programme in a timely manner. This recent reform follows a 1990-1995 initiative, the "turbo" reform, which converted 10% of a loan into a grant for those who completed their programme on time. The initiative of the 1990s contributed to a 10% increase in timely completions (Gunnes, Kirkebøen and Rønning, 2013). However, the most recent reform has improved completion rates only modestly: a total of 3% increase at the bachelor's level and no change at the master's level since 2008 (Statistics Norway, 2017a). The programme may be less effective than the reform of the 1990s partly because students are now able to earn more money without affecting the amount they receive via the student loan fund. As a result, there might be greater incentive now for students to work during their studies, which can have an effect on their time to complete education (OECD, 2016a).

The government also uses the Norwegian State Educational Loan Fund to encourage students to enrol in certain fields of study and work in specific occupations and regions after graduation. In particular, graduates who live and work in northern Norway are able to convert 10% of their student loan (to a maximum of NOK 25 000 per year) into a grant every year. The measure is also valid for recent medicine graduates working in select municipalities of central Norway. The government is encouraging students to enrol in teacher education programmes that prepare them to be primary school teachers. Teacher education graduates who work as primary school teachers for at least three of the first six years after completing studies will be able to have up to NOK 55 000 of their loan converted into a grant from 2025. In the meantime, teachers who specialise in science, foreign languages or the Sami language can receive another NOK 50 000 in debt relief, and those who work in Northern Norway can receive up to NOK 20 000 in debt relief (Norwegian State Educational Loan Fund, 2018).

There are no evaluations of these initiatives, but the number of graduates who receive incentives for working in northern Norway has declined from 6 183 in 2014 to 5 779 in 2016 (Norwegian State Educational Loan Fund, 2016). The remoteness of the area and structure of the economy make it difficult to attract people to the region, and the additional 10% reduction in student debt may not be a sufficient incentive for graduates to move there.

The State Educational Loan Fund is considered one of the most accessible and generous student financial assistance programmes in OECD countries (Lånekassen, 2018). It provides:

- 106 340 NOK (just under 14 000 USD) annually.
- An extended period of support for 11 months.
- A monthly housing allowance of NOK 4 447 for students living away from their parents' home.
- A high level of debt forgiveness.

- Low interest repayment rates, ranging between 2.168% and 2.969%.
- Near universal access.

However, the financial assistance package may not be sufficient to cover the living costs, especially rental expenses, of students in some metropolitan areas. The average monthly rent ranges from NOK 7 150 for a one-room rental unit to NOK 9 880 for a three-room rental, and these rents can be as much as 30% higher in Oslo (Statistics Norway, 2017b). High rental prices can place a stain on students' finances and make them work longer hours to cover their expenses, which can affect their ability to complete education and acquire the skills and qualifications they need to succeed in the labour market.

Performance-based funding

As with other policy levers, labour market relevance and outcomes are only one aspect of the broader quality agenda supported through performance-based funding. However, the indicators used in performance-based funding in Norway can influence the labour market relevance of higher education by encouraging a range of behaviours in higher education institutions. They can:

- Ensure their students complete their studies and graduate.
- Support international student exchanges to help students develop key transversal skills that are valued in the labour market.
- Raise diverse sources of funding, including through collaboration with social partners.

Norwegian higher education institutions are provided with funding through a block grant consisting of two parts: a fixed component (68%) and a performance-based component (32%). The fixed component is based on the academic profile, size and historical factors of institutions and typically covers salaries, equipment and other current expenditures. The performance-based funding is based on a range of indicators.

Performance-based funding was introduced in 2002 to provide incentives to improve performance in a range of areas (Table 6.4). Evaluations of the higher education funding model between 2005 and 2010 suggested that Norwegian higher education institutions respond well to performance incentives. While some reviews recommended a number of adjustments to the funding model, they found that it worked in accordance with the objectives set by parliament and that there was no basis for making sweeping changes (Norwegian Ministry of Education and Research, 2015).

Table 6.4. Weighting and type of funding for each performance funding indicator

Indicator	Percentage of performance funding	Funding type
Study credit points obtained by students (based on the number of European Credit Transfer and Accumulation System [ECTS] credit points)	63%	Open-ended budget
Number of graduates	15%	Open-ended budget
Number of doctorate graduates	5%	Open-ended budget
Funding from the European Union	5%	Fixed-limit budget
Research publication points	5%	Fixed-limit budget
Funding from Research Council of Norway	3%	Fixed-limit budget
Private and public revenue	3%	Fixed-limit budget
International students exchanges	1%	Open-ended budget

Source: Norwegian Ministry of Education and Research.

The expert panel that reviewed the funding model for universities and university colleges in 2015 noted that the existing model provided rewards for completed European Credit Transfer and Accumulation System (ECTS) credits, and therefore the incentive to enrol additional students regardless of whether students complete a degree or not. The panel therefore recommended the introduction of an indicator on the number of graduates to provide institutions with an incentive to ensure students complete higher education (Box 6.2). However, the largest component of the performance-based funding formula (63%) remains the number of ECTS credit points obtained by students, and still provides a strong incentive to enrol students, regardless of their preparedness for higher education and choice of field of study.

The expert panel also suggested a new indicator on public and private revenue to encourage more diverse sources of funding, including through greater engagement with social partners.

Co-ordinating across government to enhance labour market relevance and outcomes

Norway uses a number of agencies to steer or play a major role in the higher education system (see Chapter 3). The use of agencies can allow for more flexible and focused attention than if action was taken directly from the ministry. However, the creation of too many agencies can occasionally lead to institutional rivalries, administrative burden, lost accountability and potential for mission overlap. The lack of co-ordination among the different agencies and bodies on the collection and dissemination of labour market relevant information is particularly pertinent and requires policy action.

In Norway, policy making responsibility is shared among the three different levels of government and their associated agencies. This vertical governance structure can have significant advantages, but also requires significant co-ordination between policy makers to ensure that all levels of government are working effectively and efficiently towards complementary goals. Collaboration between levels of government will take on new importance in Norway as local governments are increasingly empowered to take greater responsibility for skills policy (Norwegian Ministry of Local Government and Modernisation, 2017).

Ensuring better co-ordination and use of labour market information

Norway develops a wide range of labour market relevant information (Table 6.5), but these various data sources are not easily accessible to policy makers, employers and individuals, and not used jointly and systematically for the skills assessment and anticipation process. This is a key issue identified in the White Paper on Quality Culture in Higher Education (Norwegian Ministry of Education and Research, 2017a), and the Norwegian Strategy for Skills Policy 2017-2021 (Nasjonal Kompetansepolitisk strategi 2017-2021) (Norwegian Ministry of Education and Research, 2017c).

The lack of co-ordination among the different agencies and bodies on the collection and dissemination of labour market relevant information in Norway hinders its effective use. Currently, the government is not using all labour market information available when making decisions about the allocation of resources across the higher education system, or in developing strategies to address critical skills gaps. Higher education institutions are not using this information to guide the programmes they offer, to develop curriculum, or identify the skills that should be developed through their programmes in order to give graduates the best chance to succeed in the labour market. Students are not aware of many of the data sources and, as a result, do not fully utilise the available information when choosing which programme to study. Employers are not developing partnerships

with higher education institutions because they lack the systematic information to identify where they need to play a more active role.

Table 6.5. Labour market data sources available in Norway and other OECD countries

	Employer surveys	Surveys of workers or graduates	Quantitative forecasting models	Sector studies	Qualitative methods	Labour market information system	Other
Australia	X	X	X	X	X	X	X
Austria	X	X	X	X	X	X	X
Belgium (Flanders)		X	X	X	X	X	
Belgium (Wallonia)				X	X	X	X
Canada	X	X	X	X	X	X	X
Chile	X			X	X	X	
Czech Republic			X	X			
Denmark	X	X	X	X	X		
Estonia			X				
Finland	X		X		X	X	
France	X	X	X	X	X	X	
Germany	X	X	X	X	X	X	X
Greece	X			X		X	
Hungary	X				X		
Ireland			X	X		X	
Italy	X	X	X	X			
Japan	X	X		X		X	X
Korea	X	X		X	X	X	
Netherlands	X		X	X	X	X	
Norway	**X**	**X**	**X**	**X**	**X**	**X**	**X**
Poland		X				X	
Portugal	X	X		X	X	X	
Slovak Republic						X	
Slovenia	X						X
Spain		X		X	X	X	
Sweden	X	X	X	X	X	X	
Switzerland							
Turkey	X	X		X	X	X	
United States		X	X		X	X	X

Source: OECD (2016b), *Getting Skills Right: Assessing and Anticipating Changing Skill Needs*. http://dx.doi.org/10.1787/9789264252073-en.

In response to the recommendation in the National Skills Policy Strategy 2017-2021, the Government of Norway launched the Official Norwegian Committee on Skills Needs (Kompetansebehovsutvalget) in May 2017 to provide an assessment of Norway's future skills needs and labour market data sources. To achieve this goal, the committee is bringing together experts from working life, government and higher education to examine existing evidence, data sources and to foster dialogue. The committee has a three-year mandate and its first report was published in February 2018 outlining the key skills

challenges in Norway that the committee will examine over the next two years (Norwegian Ministry of Education and Research, 2018).

As noted above, the government has committed to developing a higher education web portal in response to the White Paper on Quality Culture in Higher Education. The web portal will provide field of study-level indicators using data from a number of different sources. This will go some way to addressing the fragmentation of information available to the higher education system (Norwegian Ministry of Education and Research, 2017a). However, better oversight and co-ordination of all relevant higher education and labour market data through a dedicated agency or body would help ensure that the information is robust, relevant, and easily accessible to all users.

Ensuring better co-ordination across levels of government

Shared responsibility for school education across levels of government

The governance of the Norwegian school system is shared between the national government and the other two levels of government (local government or municipalities and regional government) as part of the country's general policy towards decentralisation. The national government defines the overall goals for education, adopts the legal framework, and determines structures and organisation. The Ministry of Education and Research formulates national education policy including acts, regulations and curricula. Within this framework, the school owners (regional governments, municipalities and private providers) are responsible for implementing education activities, organising and operating school services, allocating resources, and ensuring quality improvement and development of their schools. The 19 regional governments are responsible for upper secondary schools. The 430 municipalities run pre-schools and primary and lower secondary schools. The only exception is Oslo, the largest local authority, which runs both primary and both levels of secondary schools (Nusche et al., 2011).

Norway's school performance is mixed by international standards. Norway's secondary school students score above average in the Programme for International Student Assessment (PISA) test of reading and around the OECD average in science and maths, and these results have only shown modest improvements over time. In addition, there is a relatively high dropout rate from school, with around 20% of young people not completing upper secondary education. Overall, 15-year-old students in Norway are not satisfied with their learning environments compared to many other OECD countries (OECD, 2015). The middle-ranking performance of school students, as assessed by PISA, suggests that some students in Norway may not be as well prepared for higher education as they could be.

The high dropout rate from school has been recognised as a key priority in Norway for some time, and is being addressed through a suite of programmes: the New Possibilities-Ny GIV initiative (2010-13), and the current Programme for Enhanced Completion of Upper Secondary Education and Training, which includes a series of intervention initiatives to help students at risk of dropping out complete upper secondary education and gain a certificate (generell studiekompetanse). Responsibility for implementing the initiatives rests with the regional governments. However, past intervention programmes have not been a success due to lack of political will, money, implementation, monitoring and local ownership.

Effective career guidance at the secondary school level can help students make good choices about higher education programmes, but it is not offered systematically, nor sufficiently co-ordinated across the various levels of government, and it is usually poorly staffed. Career guidance in secondary school is provided through a subject on "education

choice" in lower secondary school and through a mandatory event in the last year of upper secondary school where students get assistance in completing their applications for post-secondary and higher education. These services are provided by teaching staff who take on the role of career counsellors, either on a part-time or full-time basis. These teachers may or may not have any training and expertise in career counselling.

Devolving authority for school policy from the national government to regional and municipal governments brings the responsibility for the provision of school education closer to its constituents, but it requires co-ordination between the levels of government to ensure consistent implementation, quality and equity across all regions and municipalities. However, issues around co-ordination and which level of government has responsibility for related issues may be contributing to poorer outcomes in school.

For instance, responsibility for implementing the intervention initiatives to help students at risk of dropping out complete upper secondary education and gain a certificate (the generell studiekompetanse) rests with the regional governments. However, there have been concerns that the interventions have not been successful due to the "one-size-fits-all" approach which does not reflect the unique needs of students and their regions and the lack of funding, monitoring, or local ownership. In addition, the implementation of the intervention initiatives has been hampered by a lack of collaboration between the different levels of government.

Regional and local policy

While Norway is a unitary country with a population of 5.2 million, subnational governments are responsible for 33.8% of public expenditures, ranking Norway the 15th most decentralised country in the OECD with regards to public spending (OECD, 2016c).

Regional and local policy is therefore an important part of Norway's economic agenda. Similar to other OECD countries, this has meant that the national government plays an increasingly supportive role in the economic development of rural and remote regions. The 2013 White Paper on rural and regional policy sought to preserve the distinctive features of Norway's settlement pattern by using human and natural resources throughout the country to support national prosperity and equal living conditions. The 2017 White Paper, Urban Sustainability and Rural Strength, reiterates this approach with new objectives for Norway's regional and rural development policy (Norwegian Ministry of Local Government and Modernisation, 2017).

The national government also has an important role to play in regional and local policy due to its responsibilities for higher education. Higher education makes a considerable direct economic contribution to regional and local economies. Higher education institutions employ people in the regions and are customers and suppliers of local goods and services. Their staff and student expenditure have a direct effect on income and employment in the cities and regions. They not only educate people in the area, but also contribute to the development of knowledge-intensive jobs, which enable graduates to find local employment and remain in their communities. Through research activities they create and apply knowledge, often with their local and regional communities. They engage in partnerships with local industries, communities and stakeholders (OECD, 2017d).

Maintaining a good geographic distribution of higher education institutions is therefore an important policy in a country such as Norway. The presence of a higher education institution can help reduce the outflow of skilled talent from rural and remote areas to larger metropolitan areas. The importance of maintaining campuses across different regions and municipalities has been recognised throughout the institutional mergers over recent decades. However, despite these efforts to curb the inter-regional brain drain, on

average, one-third of higher education applicants list an institution in Oslo as the preferred location to pursue their studies, not least because of the strongest graduate outcomes in the region (Norwegian Ministry of Education and Research, 2017e).

Traditionally, regional governments have had a weaker connection with higher education institutions compared to national government. But this is gradually changing. The 2014 OECD National Skills Strategy project in Norway prompted the national government to invite regional governments to develop skills strategies in collaboration with relevant partners (OECD, 2014). In the 2017 White Paper, Urban Sustainability and Rural Strength, the government's policy for regional and rural development includes a number of initiatives involving higher education institutions:

- Incentives for increased and more effective interaction between the tertiary education sector and the labour market, industry and society by emphasising such co-operation in the funding of the sector.
- Strengthened collaboration and co-ordination at the regional level through further development of regional strategies for growth and access to skills (Norwegian Ministry of Local Government and Modernisation, 2017).

However, increased engagement with higher education institutions by regional governments may cause co-ordination issues with the national government, which has its own agenda and approach to higher education. The future roles of national and regional governments and higher education in the regions may change under ongoing reforms that aim to assign new powers and responsibilities to regional governments (Norwegian Ministry of Local Government and Modernisation, 2017).

Innovation policy

Innovation policy can affect skills development and labour market outcomes by shaping both the supply of skills (e.g. enhancing the skills of students who participate in research) and the demand for skills (e.g. fostering new technology and business processes). Many factors, including trade policy and business climate, play a role in shaping innovation policy, but one of the most important drivers of innovation is investment in domestic research.

In Norway, each of the 15 ministries of the national government has their own funding and processes to support the research institutes associated with their portfolio. However, nearly half of all research funding is allocated from the Ministry of Education and Research and the Ministry of Trade, Industry and Fisheries to the Research Council of Norway (RCN), which in turn disperses funds to higher education institutions.

In 2015, the RCN provided almost NOK 8.5 billion in funding to support research and research infrastructure. This investment in research supports the types of innovation that strengthen existing pillars of the economy (e.g. oil and gas, shipbuilding, fisheries and aquaculture), supports the development of emerging sectors and the diversification of the economy, and enhances the skills profile, productivity, competitiveness of industry, and the skills needed to take advantage of new labour market opportunities.

The RCN, together with the Ministry of Education and Research and the Ministry of Trade and Industry, also fund technology transfer offices (TTOs) located in all regions to help to commercialise research and development and bring products and services to the market.

The Ministry of Education and Research has provided further incentives for research and collaboration with social partners through a recent modification in the performance funding available for higher education institutions. As of 2017, higher education

institutions can access additional funds based on their reported income from the RCN, regional research grants (including European Union funding) and income from both public and private third parties.

In addition, Innovation Norway, a state-owned company and national development bank under the auspicious of the Ministry of Trade, Industry and Fisheries, helps companies, especially start-ups and SMEs, to expand their businesses and gain access to networks and financial support. Innovation Norway also plays a key role in the Norwegian Innovation Clusters initiative, which aims to support collaboration, innovation and competitiveness in key sectors of the economy and key regions of the country. A key aspect of the programme is to facilitate firms' access to higher education research and graduates, which can facilitate the transition of graduate researchers to the labour market.

Overall, the efforts of the RCN and Innovation Norway facilitate the development of labour market relevant skills through advanced research and greater collaboration between higher education and social partners. However, the OECD Reviews of Innovation Policy on Norway noted a number of key issues around the governance of the innovation system, and noted that Norway's governance structure does not favour co-ordination and agenda setting (OECD, 2017d).

Implications for the labour market relevance and outcomes of the higher education system

The dialogue-based approach for steering the higher education system in Norway establishes a framework for policy regarding the labour market relevance and outcomes of higher education. However, the Norwegian approach to steering the higher education system towards greater labour market relevance has not been as ambitious as it could be or needs to be to meet the labour market changes and challenges on the horizon.

Part of the restrained response could be explained by the labour market relevance of higher education being framed as one aspect of a broader quality agenda, rather than as a stand-alone goal. The focus on a broader quality agenda also reflects concerns of higher education stakeholders that the system could be steered too aggressively towards labour market issues at the expense of other key priorities in higher education. This means that labour market relevance is often overshadowed by other policy goals, which may or may not have an impact on labour market relevance. In addition, although the aforementioned collaborative approach is important, it may trade off ambitious policy responses in exchange for greater consensus.

As a result, Norway's current suite of policy levers for steering the higher education system towards greater labour market relevance is much more limited than in many other OECD countries. The use of funding levers is modest with respect to steering institutions and students towards greater labour market relevance. Information is made available, but is passive and not necessarily incorporated into decision making, and labour market information and indicators are not tied to other policy levers. The regulatory lever is aligned to general rather than specific labour market outcomes, and action is not always co-ordinated across different levels of government. More could be done to strengthen the coherence and robustness of existing policy to better serve the needs of students, the labour market and society, now and in the future.

Until there is greater consensus on the role of higher education in developing labour market relevant skills in students, and ensuring graduates have good labour market outcomes, the Norwegian government may need to take a greater role in driving reforms in this area.

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Higher Education in Norway

LABOUR MARKET RELEVANCE AND OUTCOMES

The higher education system in Norway generally produces graduates with good skills and labour market outcomes. This success can be largely attributed to Norway's robust and inclusive labour market and recent higher education reforms to improve quality. However, some Norwegian students have poor labour market outcomes and past success is no guarantee of future success, especially as the Norwegian economy upskills and diversifies. This report provides advice and recommendations to improve the labour market relevance and the outcomes of higher education in Norway. The analysis finds that there is an opportunity to expand work-based learning opportunities, improve career guidance, and do a better job of using innovative learning and teaching practices to improve labour market relevance across the system. The report concludes that Norwegian policy makers have a larger role to play in steering the system. Policy makers can set the conditions for greater labour market relevance by strengthening the mechanism for collaboration between higher education institutions and employers, ensuring better coordination and use of labour market information, and redoubling efforts to support quality learning and teaching. This report was developed as part of the OECD Enhancing Higher Education System Performance project.

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