



BRIEFING NOTE

Skill mismatch in Europe

Europe's challenge is not just to improve skill levels, but to match people with the right skills to the right jobs

Working life is becoming much more complicated. The information revolution is gradually dispensing with many jobs that had seemed to be a permanent fixture of our societies, while the jobs it generates need an ever-widening skill base. Consequently, it is becoming more difficult to find the right people for the right jobs. Skill-intensive economic and technological change is making the issue of skill mismatch more prominent ⁽¹⁾.

It's not just a matter of having enough skilled people in the economy as a whole, although that is an important condition. Most of the new jobs the European economy is expected to create over the next decade will require high-level qualifications ⁽²⁾. The good news is that qualification levels are rising, particularly among young people and women.

It is estimated that, in 2020, 31.5% of all jobs will need tertiary-level qualifications and that around 34% of the labour force will have them. Some 50% of jobs will require medium-level qualifications and around 48% of the labour force will be qualified to that level. Around 18% of the labour force will have no or low level qualifications and 18.5% of jobs will need no or only low level qualifications. Given these trends, although not perfectly aligned, Europe does not seem to be doing so badly.

As with most things, however, the real problem lies in the details. The right balance between supply and demand also means that people need to be a good fit with their jobs. Although forecasted skill levels may be broadly in line, in 2020 the European labour market is likely to have a surplus of some skills and a shortage of others. People may have academic qualifications while employers may want vocational ones. Europe's challenge is not just to improve skills, but to match the people with the right skills to the jobs available.

Skill mismatch can contribute to unemployment and may reduce productivity and competitiveness. It appears in various forms such as skill shortages or skill gaps, but also applies to situations where the qualifications, knowledge and skills of an individual exceed the requirements of their job. 'Vertical' mismatch, commonly referred to as overeducation, occurs when an individual is employed in a job which requires a lower level of education. 'Horizontal' mismatch is when the type, rather than the level, of education or skills is inappropriate for the job. Those with specific degrees, for example, usually find better matched jobs than those with more general degrees.

In Europe, overeducation is estimated to average around 30% yet at the same time a substantial share of the labour force is undereducated. Overeducation is not, in itself, a problem. In a cultural sense it is, arguably, impossible for someone to be too well educated. Overeducation is also relative to the job. It does not mean that everyone is educated to a high level, or that an individual is educated to the wrong level. But under use of skills and competences is a real problem.

Skill mismatch: shortage, gap or obsolescence?

The varied meaning and features of different types of skill mismatch (Table 1, page 2) can result in different imbalances between skill supply and demand. Overall skill mismatch is influenced by the different phases of the economic cycle and by the relationships between different types of mismatch.

In times of economic prosperity, mismatches arise due to skill shortages, namely, where there are not enough people with a specific type of skill to satisfy demand. For example, during the 'dot.com' boom in the late 1990s and early 2000s, firms had trouble recruiting the information technology specialists they needed.

⁽¹⁾ Cedefop. *Skill supply and demand in Europe: medium-term forecast up to 2020*.

See: <http://www.cedefop.europa.eu/EN/publications/15540.aspx>

⁽²⁾ Cedefop. *The skill matching challenge – analysing skill mismatch and policy implications*.

See: <http://www.cedefop.europa.eu/EN/publications/15275.aspx>

Table 1. Types of skill mismatch

Overeducation	To have completed more years of education than the current job requires.
Undereducation	To have completed fewer years of education than the current job requires.
Overqualification	To hold a higher qualification than the current job requires.
Underqualification	To hold a lower qualification than the current job requires.
Overskilling	To be unable to fully use one's skills and abilities in the current job.
Underskilling	To lack the skills and abilities necessary to perform the current job to acceptable standards.
Skill shortage	Demand for a particular type of skill exceeds the supply of available people with that skill.
Skill surplus	The supply of people with a particular skill exceeds the demand for it.
Skill gap	The level of skills of the person employed is less than that required to perform the job adequately or the type of skill does not match the requirements of the job.
Economic skills obsolescence	Skills previously used in a job are no longer required or are less important.
Physical (technical) obsolescence	Physical or mental skills and abilities deteriorate due to atrophy or wear and tear.
Vertical mismatch	The level of education or skills is less or more than the required level of education or skills.
Horizontal mismatch	The level of education or skills matches job requirements, but the type of education or skills is inappropriate for the current job.
Crowding out/ bumping down	Better qualified workers are hired to do jobs that less qualified workers could also do, thus replacing (crowding out) less qualified workers from traditional employment possibilities for their level of skill. Bumping down refers to this process working from top to bottom, pushing less qualified workers to even lower level jobs. At the extreme some lower level workers may become unemployed.

Skill shortages can also arise if workers are undereducated or underskilled (or both). However, skill shortages can be addressed through training that enables undereducated or underskilled workers to carry out the full range of tasks in the higher level job. This is because skill shortages relate to a lack of individuals with the necessary skills and experience, rather than a lack of years of education.

Skill shortages that arise when workers are overeducated or overskilled are a clear signal that the education and training supply is poorly aligned with labour demand. This suggests that some rebalancing of post-compulsory

education and training provision would benefit both workers and firms. Inside companies, this problem takes the form of a surplus of education and skills in some occupations, but a shortage of the right people for others.

In difficult economic times, highly qualified people are more likely to take lower level jobs. There may be some advantages to firms employing someone in a job for which they are overeducated, but evidence shows that individuals feel trapped and unsatisfied in lower level jobs. In addition to their own skills not being adequately used, overqualified people crowd their lower skilled counterparts out of the job market. This situation

can continue even after economic recovery sets in. A UK study showed that the percentage of graduates that were overskilled for their jobs decreased only very slowly, from 31% after graduation to 24% after two to four years.

Skill gaps relate to a company's current employees and are specific to the firm's requirements. Skill gaps can arise due to technological changes - for example, the growing demand for environmentally conscious 'green' skills - or changes in standards or procedures introduced by legislation. Such changes can lead to even overeducated and overskilled workers not having the mix of skills required by the firm. Yet skill gaps are most likely to occur when workers lack basic skills. This is more likely to be the case with overskilled workers than with overeducated workers, who have a high level of educational attainment. To address skill gaps, the training offered must fully equip a worker to carry out the job in question.

As Europe's population ages, 'skill obsolescence' is likely to become more significant. A process rather than a state, skill obsolescence occurs when skills depreciate due to ageing, lack of use at work, or technological change. Unsurprisingly, evidence indicates that skill obsolescence is more apparent in high-tech than in low-tech industries and greater for more educated workers. A Dutch survey found that 30% of skills in their sample had become obsolete with a half-life for competences in the range of 10 to 15 years.

Who is affected by skill mismatch?

Different people are prone to different types of skill mismatch. Older workers are likely to suffer more from physical (technical) skill obsolescence as age can wear down physical or mental skills and abilities. Young workers, as new entrants in the labour market, tend to other types of skill mismatch, such as overeducation, which is linked to a lack of work experience. A Dutch study from 2002 found that overeducation decreased from 41.7% for people aged 15-19, to 27% for those aged 30-44, to 18% for those aged 49-64. Other studies report similar results. In addition, studies of skill mismatch among ethnic minorities in Britain have found overeducation to be higher for non-whites than for whites.

It is not clear if gender affects skill mismatch. It is possible that women's higher turnover rates may lead employers, when hiring for particular jobs, to require higher ability from women relative to men. But the evidence of skill mismatch being a more serious problem for women than for men is mixed. Studies of skill mismatch among people with disabilities are notable by their absence.

Tackling skill mismatch

There are several underlying causes of skill mismatch. Incomplete information in the labour market, differences between people and transaction costs can lead to people being mismatched with their jobs. Underinvestment in training, and education and training systems that are not responsive to labour market needs, also contribute to the problem.

Tackling mismatch through better labour-market information and efficient job placement services should be a priority for policy-makers. The issue of underinvestment in training and unresponsive systems is, however, more difficult.

Deciding in which skills to invest is tricky. Should people focus on generic skills to prepare for different jobs and so reduce potential skill gaps? Or should they concentrate on specific skills that can reduce skill shortages and open access to related jobs, but may leave one vulnerable to economic or technological change? A judicious balance of both is needed. Where that balance lies, however, and how it affects different people and firms at different times is not clear.

One way to help find that balance is to identify emerging skill needs more accurately and at an earlier state. European and national forecasting is one such step. But enterprises also need cost-effective tools to forecast their own skill needs more regularly and accurately, including spotting the differences between skill shortages and skill gaps.

The significance of this becomes apparent if one looks at the latest continuing vocational training survey ⁽³⁾. Despite the very clear trend towards more knowledge- and skill-intensive jobs and an ageing workforce, the most common reason enterprises give for not providing training is that they see no need to do so. This reason is given more often than lack of time or cost in most Member States. The question is – how do companies know? Even among those that provide training, only 26% assess their future skill needs.

Filling the knowledge gap on skill mismatch

Matching skills and jobs is particularly challenging in a world where jobs increasingly need a broader skill base as tasks become more varied and change more often. The number of jobs that do not require some

⁽³⁾ Cedefop: *Employer-provided vocational training in Europe*
See: <http://www.cedefop.europa.eu/EN/publications/15390.aspx>

knowledge of information technology is dwindling, while the need for 'green skills', or at the least to be more environmentally conscious at work, is growing.

To tackle skill mismatch effectively, we need to know more about it. Studies on skill mismatch in Europe show that it is pervasive, but data are very patchy. How to measure skill mismatch is a central concern; but so too is which aspects to measure. For example, is it better to measure over- and underskilling rather than over- and undereducation? To develop policies to improve skill matching and better align the skills emerging from European education and training systems to the needs of innovation-driven economies we need better Europe-wide data. One way of collecting it could be to introduce a new module containing questions on mismatch in existing European large panel surveys once every three years.

It is unrealistic to assume that labour markets can work without temporary imbalances. The duration of skill shortages and skill gaps depends on their level and complexity. But skill mismatches that take time to resolve, or become entrenched, lead to real economic and social losses. In the short term, the effect of the economic crisis of 2008-09 is likely to make mismatch problems more acute as structural changes accelerate changes to job content and the skills required.

Cedefop research on skill mismatch

The prominence of skill mismatch as a core challenge on many policy agendas, including the European Commission's New skills for new jobs initiative, inspired Cedefop to analyse this issue systematically. Its report, *The skill matching challenge: analysing skill mismatch and policy implications* (op. cit) is the first in a series bridging the worlds of research, practice and policy. Skill mismatch disproportionately affects specific groups on the labour market. New empirical research is now examining the impact of skill mismatch among ageing workers, and migrants and ethnic minorities. Cedefop is also starting to analyse skill obsolescence. The aim is to add to our knowledge and understanding of what factors affect the obsolescence of different types of skills, in order to provide the evidence base that can shape lifelong learning policies