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Training the next generation

How can we adapt apprenticeships for 21st-century labour markets?

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In ancient Babylon, the Code of Hammurabi required artisans to train the next generation of craftsmen. Today's policymakers continue to look to apprenticeships as a powerful means of ensuring that learning meets the needs of the workplace.

To realise their full potential, apprenticeships need to adapt to the requirements of 21st century economies. A

▲ **Ironworker apprentices practise their welding skills at a training facility in West Virginia, US. Although apprenticeships were traditionally focused on trade and craft occupations, many countries have developed apprenticeships for new sectors, reflecting the shift from manufacturing to services in the wider economy**

few decades ago it might have been enough for apprentices to learn a narrow set of technical skills. Today, successful transition into a first job is not enough. Graduates of apprenticeships must also have the capacity to continue learning throughout their careers, as some jobs disappear, others are radically re-shaped and new ones emerge.

The popular image of an apprentice is often of a young man working in construction or manufacturing. This reflects the apprenticeship landscape in some countries, where apprenticeships remain concentrated in trade and craft occupations. But as OECD economies have witnessed a shift in employment away from manufacturing and towards services, a number of countries have developed apprenticeships in new sectors. In Australia, more people now start non-trade apprenticeships than those in trade occupations. In Germany and Switzerland, the most popular apprenticeship occupations include business and administration, sales and retail.

The challenge: benefits versus cost

In many countries, enthusiasm about the potential of apprenticeships has not translated into widespread use. One common challenge is how best to engage employers and ensure that they offer sufficient training places. Often governments try to solve this problem through financial incentives, but this can be ineffective.

A better approach is to focus on the way in which apprenticeship schemes are organised, as their content, length and financial arrangements affect both employers and apprentices. The challenge for policymakers is to design schemes that are adapted to a particular context. They need to recognise that the optimal design may vary depending on the country, sector, occupation, firm type or learner. One size won't fit all.

A multi-year OECD study has focused on what international experience and empirical research tell us about how to design apprenticeships that both work for employers and are attractive to learners. In this, it is important to focus on the dynamics of costs and benefits of apprenticeships to employers.

Offering an apprenticeship involves various costs for an employer: apprentice wages, supervisor wages, and the costs of material and equipment. These are counterbalanced by benefits. The challenge is to design schemes that ensure that benefits exceed costs to employers, so that they are keen to offer apprenticeships.

Some of the benefits can be reaped during the apprenticeship programme itself. Already on day one, an apprentice can do unskilled work: a restaurant will benefit when its apprentice cook peels potatoes, for example. But at the initial stages apprentices spend much of their time learning, so employers typically make an investment.

As the apprentice becomes more and more skilled, they can do more and more skilled work, such as baking a soufflé. Towards the end of the apprenticeship programme, skilled apprentices can

contribute to production, but still cost less than skilled workers. This period is essential, as it helps employers recoup their initial costs.

It is desirable to allow for apprentice wages to vary across sectors and occupations, as the costs of offering apprenticeships and the productive contribution of apprentices vary greatly across occupations. The length of an apprenticeship matters too – it needs to be long enough so that employers can benefit from apprentices' productive work, but not so long that apprentices become exploited as cheap labour. Social partners like employers' associations and trade unions are very well placed to guide decisions about the key features of apprenticeships. Involving them in the design and implementation of schemes is essential for successful programmes.

Policy efforts can focus on making it easier and cheaper for employers to offer

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contribute to production, but still cost less than skilled workers. This period is essential, as it helps employers recoup their initial costs.

An additional benefit often comes at the end of the apprenticeship programme: employers can select apprentices who work well and recruit them as employees. This way employers do not have to pay for job adverts or interview candidates. Former apprentices can also skip much of the introductory training that others would need. Retaining former apprentices also minimises the risk of making the wrong recruitment decision, as the employer already knows how the person performs at work.

Shifting the balance

There are several ways of ensuring that apprenticeships bring sufficient benefits to employers while also sustaining their quality so that they are attractive to learners.

The design features of apprenticeship schemes can be adjusted. Apprentice pay

apprenticeships. Building up infrastructure that underpins apprenticeships can be very effective. This may include creating organisations that help match apprentices to companies, support employers with administrative tasks or offer targeted training to apprentice supervisors.

In Australia, group training organisations fulfil these functions and, if necessary, rotate apprentices between different firms. In Norway, training offices supervise training firms, train supervisors and deal with administrative tasks. Reducing the burden associated with apprenticeships can be particularly helpful in efforts to engage small and medium-sized enterprises. These firms often lack dedicated human resources departments and struggle to cover the whole skillset targeted by the apprentice's curriculum.

Enhancing employers' ability to manage apprentices can also help them achieve a favourable cost–benefit balance. In countries and sectors with a long tradition

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of apprenticeships, firms have much tacit knowledge about how to meet the twin goals of learning and production. Indeed, many employers were once apprentices themselves.

Building learning into productive work can benefit firms while delivering the same learning outcomes for apprentices. For example, after observing their supervisor, an apprentice might practise the skill by doing real work rather than doing simulations. Research found that between 2000 and 2007, German firms who took this approach halved the time apprentices spent on non-productive activities, increased the share of productive work, and maintained training quality.

The scope for learning through productive work varies across occupations. A would-be electrician must undertake substantial training before touching the wires. But whenever possible, learning should be integrated into productive activities. Rigorous assessments at the end of an apprenticeship can verify that learning was effectively integrated into – and not replaced by – productive work.

Apprenticeships can offer a powerful learning environment, but their potential is often not fully exploited. Tradition matters, but it is not everything: schemes can be adapted to country contexts and apprenticeship know-how can be built up over time. Lessons from international experience can help countries unlock apprenticeships' potential. ●

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4 QUALITY EDUCATION

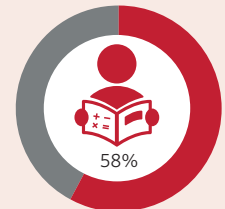


Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all



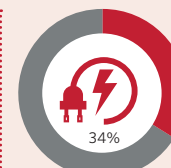
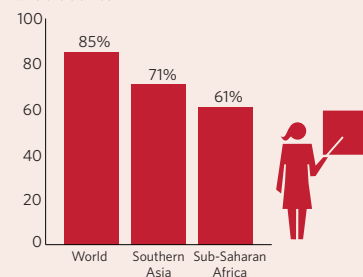
617 million

An estimated **617 million** children and adolescents of primary and lower secondary school age worldwide – **58 per cent** of that age group – are not achieving minimum proficiency in reading and mathematics

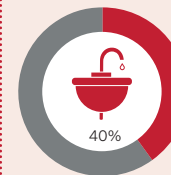


More trained teachers are needed for quality education

Percentage of primary education teachers who are trained



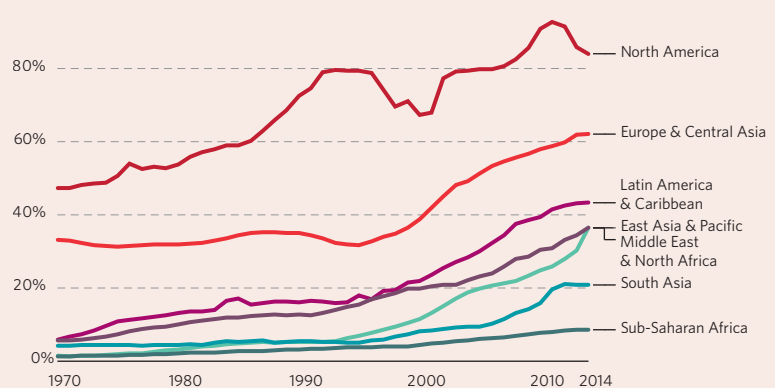
In 2016, only **34 per cent** of primary schools in LDCs had electricity



Less than **40 per cent** were equipped with basic hand-washing facilities

Source: The Sustainable Development Goals Report 2018, UN

Gross enrollment ratio in tertiary education



Source: World Bank



Target 4.3: by 2030 ensure equal access for all women and men to affordable quality technical, vocational and tertiary education, including university