



Enhancing employability

**Report prepared for the
G20 Employment Working Group**

**with inputs from
The International Monetary Fund**

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EXECUTIVE SUMMARY

Skill requirements are changing rapidly as a result of structural shifts

1. The speed and nature of globalisation, technological change and innovation, changes in work organisation and demographic trends take very different forms across G20 countries. But in all of them, they are affecting what kind of work is done, who carries it out and where and how it is carried out. These transformations are affecting many traditional jobs and employment relations while creating new job opportunities in emerging economic activities. Some of these shifts risk widening existing inequalities and marginalising some groups in the labour market. Labour market policies, as well as policies affecting markets for goods and services, can facilitate the required adaptation while offering support to the workers directly affected by changes so as to foster employability, productivity, innovation, and enhanced growth and a better share of its benefits.

Workforce employability is essential to turn structural change into an opportunity for all

2. Increasing the employability of the workforce in the face of ongoing and future structural changes can help foster innovation and the adoption of new technologies as well as boost productivity by speeding up the reallocation of labour from less-productive activities to more productive ones and improving the well-being of workers. Technology also provides the opportunity to expand access to new jobs and to make employment more inclusive. At the same time, it also opens opportunities for the creation of new businesses, and offers existing firms opportunities to access to new markets, expand sales and create more jobs.

Education and training systems, labour markets, workers and workplaces will have to become more adaptable

3. The flexibility and incentives of education and training systems and stakeholders¹ need to be enhanced to respond more promptly to emerging skill needs. The adaptability of the workforce – both workers and jobseekers – should be encouraged through the development of transferable skills,² broader vocational profiles and competency-based training delivered through programs that incorporate work-based learning, including quality apprenticeships. Employers need to work with education and training institutions to ensure the provision of relevant skills, including through apprenticeship places; provide on-the-job training to facilitate the upgrading and adaptation of skills; and adopt forms of work organisation that make the most of existing skills. The private sector can also be a key provider of skills

1 “Stakeholders” includes public and private sector actors, including firms, employer associations, and private training providers.

2 The term transferable skills refers to skills that can be used in most occupations – e.g. ICT skills, problem solving, team working, etc. – including core skills such as literacy and numeracy, which are essential in all occupations and required for learning new skills.

training, either within the firms or by offering services to other firms and individuals. A key to the success of private sector initiatives is ensuring that contracts are designed to provide the right incentives and cost-sharing mechanisms to meet the needs of employers and job seekers. Finally, institutional settings and incentives should encourage and support all stakeholders, including the private sector, to co-operate in efforts to assess and anticipate skill needs. This information should then feed into employment and education policies in an effective and timely way to ensure that training decisions and the content of training offered are responsive to identified and emerging shortages and the right incentives are in place for training providers to meet these needs.

Developing a set of concrete actionable principles

4. In the context of the challenges confronting G20 economies, a set of concrete actionable measures is proposed to improve the employability of each economy's workforce, making skills more transferable and workplaces more adaptable. The main objectives of these principles are to:

- Stress the importance of assessing and anticipating rapidly changing skill needs so that they can be addressed through responsive education and training systems, public or private;
- Reaffirm the importance of transferable skills for promoting labour reallocation in the face of structural change and ensure workers are ready to take advantage of new opportunities;
- Identify actions that countries could take to improve the employability of their workforce in a broader context of effective labour market policies and balanced employment protection legislation; and
- Highlight the importance of policy coherence through a whole-of-government approach with full stakeholder engagement, including the private sector, and strengthened interactions between the world of work and the world of education and training;
- Promote institutional reform in public training organisations and improved arrangements for how key stakeholders can come together to enhance local skill solutions, including through co-ordination mechanisms such as skill ecosystems/clusters and skills councils.
- Address market and/or government failures that might be reducing incentives to invest in training at the firm level.

5. These principles are summarised around four areas: i) anticipating skill needs and adapting policies accordingly; ii) reinforcing the role of training and work-based learning; iii) enhancing the adaptability of workplaces; and iv) promoting labour mobility.

Policies to enhance workforce employability

Anticipating emerging skill needs and adapting policies accordingly:

- Systematically collect and use robust and accessible information on current and expected future skills demands to provide timely information to relevant stakeholders on the content and type of education and training required
- Promote co-ordination mechanisms and social dialogue, including working groups, round tables and sector skills councils, to ensure a better collection, dissemination and use of skill needs information by all relevant stakeholders
- Where the demand for skills cannot be fulfilled by employers themselves, strengthen the incentives and enforcement of training systems to be responsive to demands, e.g. through performance contracts.

Reinforcing the role of training and work-based learning:

- Expand participation in work-based learning to promote successful transitions from school to work and improve the quality of skills development;
- Promote job retention and re-employment through retraining and active labour market programs in response to structural change;
- Enhance flexibility and governance within the TVET system at the local level to ensure that institutions and programmes adapt to the needs of employers, individuals, and the local labour market more generally;
- Foster the participation of individuals from disadvantaged groups – low-skilled, youth, migrants -- in life-long learning and employability programmes by addressing barriers to participation and providing appropriate incentives;
- Pursue a balance between responding to specific employer needs while developing more general transferable skills that will be beneficial to individuals throughout their working lives.

Enhancing the adaptability of workplaces:

- Foster a better use of existing skills by promoting innovation and the introduction of high-performance work practices
- Facilitate local and national partnerships which reduce policy silos and bring social partners together with training organisations and other intermediaries to design strategies which seek to improve the adaptability of workplaces

Promoting labour mobility:

- Tackle institutional barriers to labour mobility such as rules and regulations providing disincentives to change jobs and location.
- Facilitate required labour mobility between occupations and sectors through better skills assessment, skills recognition and re-training strategies for jobseekers.

These policy actions should be embedded in strong labour market activation strategies that motivate and help jobseekers to find work in new and emerging occupations and industries. They should also be implemented in the context of balanced labour market institutions, including employment protection regulations that encourage rather than discourage mobility while providing adequate employment security for workers.

INTRODUCTION

6. During its presidency of the G20, China has decided to focus the preparations of the G20 Labour and Employment Ministers Meeting (LEMM) on the concept of “Innovation: Decent work, Enhanced Employability, and adequate job opportunities” (IDEA). Under this banner, three key themes were proposed for the G20 Employment Working Group (EWG) to discuss and develop policy principles: I. Adopt pro-employment macro-economic policies; II. Enhance employability; and III. Promote decent work. To inform these discussions, the international organisations were asked to prepare a background report on each theme. Accordingly, the OECD was asked to take the lead in preparing a paper on the second theme, Enhancing Employability. The result is the following paper which has been prepared in cooperation with the ILO and the World Bank, and with inputs from the IMF.

7. The objectives of this paper are to set out the challenges confronting G20 economies and develop a proposal for a set of concrete actionable measures that are needed proposed to improve the employability of each economy’s workforce, making skills more transferable and workplaces more adaptable. The paper begins with an overview of the major challenges that are putting jobs at jeopardy and which risk widening existing inequalities and further marginalising disadvantaged groups in the labour market. The key policy responses that are required to meet these challenges are then set out according to four key areas: i) Anticipating emerging skill needs and adapting policies accordingly; ii) Reinforcing the role of training and work-based learning; iii) Enhancing the adaptability of workplaces; and iv) Promoting labour mobility. Under each area, a selection of informative country policy examples is provided and some general policy principles are identified, drawing on these examples for inspiration.

The challenges facing G20 economies

8. The speed and nature of globalisation, technological change and innovation, changes in work organisation and demographic trends assume very different facets across G20 countries. But in all countries, they are affecting what kind of work is done, who carries it out and where and how it is carried out, transforming many traditional jobs and work relations and creating new job opportunities in emerging activities. However, some of these changes risk widening inequalities and marginalising some groups in the labour market. Labour market policy as well as policies affecting markets for goods and services can facilitate the required adaptation while offering support to the workers directly affected by changes so as to foster productivity, innovation and potential growth and better share of their benefits (World Bank, 2016; Dabla-Norris et al., 2015).

9. Across countries, substantial changes in skill needs are challenging education and labour market policies and institutions and contributing to skill mismatch and shortages.³ In most G20 countries, large shares of employers complain that they cannot find workers with the skills that their businesses require. At the same time, in many countries, a number of college graduates face difficulties in finding job opportunities matching their qualifications and their competences and many lower skilled workers find

³ In this paper, skill mismatch refers to discrepancies between the skills possessed by workers and those required by the job they hold. Skill shortages, on the other hand, refer to situations in which employers cannot find workers with the required skills.

increased competition for employment. While genuine skill mismatches do not explain all of these imbalances, skill demand and supply policies have a role to play in ensuring a better balance between skills of workers and the needs of employers.

10. Essentially, training systems, governments, individuals and employers will have to become more adaptable and responsive to changing skill needs. For employers, this means: working with education institutions to ensure the provision of relevant skills and the availability of apprenticeship places; providing on-the-job training to prevent skills obsolescence; and adopting forms of work organisation that make the most of existing skills. For employees and job seekers, adaptability translates into better employability through the acquisition of skills that are relevant to labour market needs and transferable to different sectors and technologies. The flexibility of education and training systems needs to be enhanced to respond more promptly to emerging skill needs. The adaptability of the workforce should be encouraged through the development of transferable skills, broader vocational profiles and competency-based training delivered through work-based learning, including quality apprenticeships. Finally, governments can promote adaptability through the provision of quality career-guidance systems, by ensuring that labour market institutions and policies boost demand and encourage job creation and addressing market and government failures that keep employers from being able to adapt on their own (e.g. access to credit to fund in-house training programmes, or certification standards for certain skill categories).

Section 1: Anticipating emerging skill needs and adapting policies accordingly

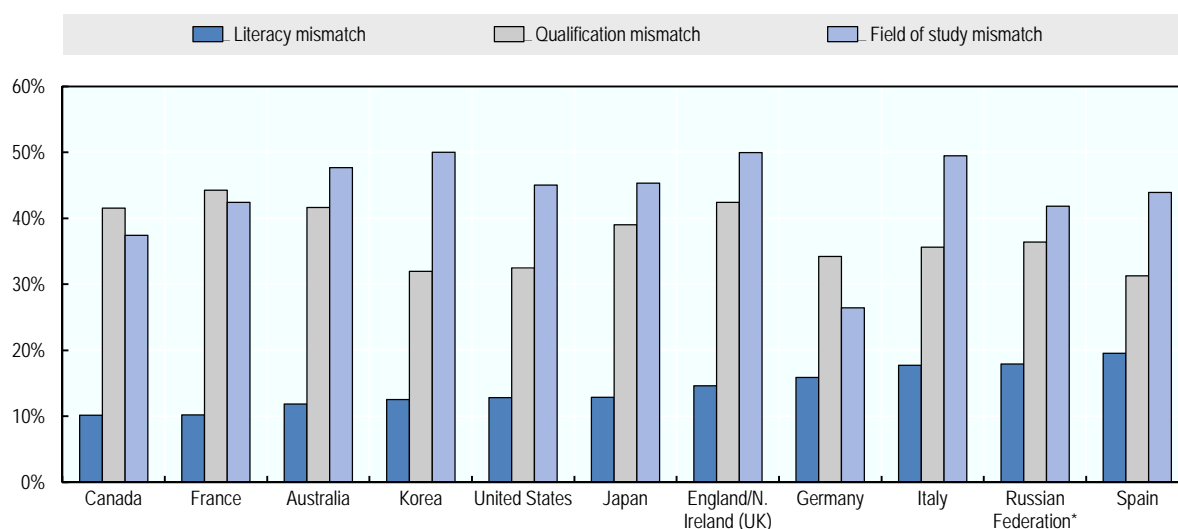
Changing skill requirements can result in temporary skill imbalances

11. Substantial changes in skill needs are likely to generate skill shortages and mismatch (Figure 1), at least in the short term, as policy measures to respond to emerging skill needs take time to yield results. In most countries, training systems lag behind changes in demand for skills. In others, upward trends in average educational attainment are unmet by demand in the short run. For some young people, this may be part of the process of “job-shopping” to find the best job that suits their skills.

12. These skill imbalances can be costly: for instance, skill shortages can constrain the ability of firms to innovate and adopt new technologies while skill mismatches reduce labour productivity due to the misallocation of workers to jobs (Adalet McGowan and Andrews, 2015). Individuals are also affected as skills mismatch can bring about a higher risk of unemployment, lower wages, lower job satisfaction and poorer career prospects (OECD, 2013a).

Figure 1. Incidence of skills, qualification and field-of-study mismatch

Percentage of workers mismatched by skills in literacy, qualification or field of study,***



(*) The sample for the Russian Federation does not include the population of the Moscow municipal area. The data published, therefore, do not represent the entire resident population aged 16-65 in Russia but rather the population of Russia excluding the population residing in the Moscow municipal area. More detailed information regarding the data from the Russian Federation as well as that of other countries can be found in the Technical Report of the Survey of Adult Skills (OECD, 2013).

(**) Qualification mismatch arises when the highest qualification held by the worker differs from the qualification that he/she considers necessary to get his/her job at the time of the interview; Field of study mismatch arises when workers are employed in a field that is unrelated to the area of their studies (see Montt, 2015 for a more detailed explanation); Literacy mismatch arises when workers have a higher (lower) level of literacy – assessed through a literacy test as part of the PIAAC Survey of Adult Skills (2013) – than the highest (lowest) observed for workers in a similar job (see Pellizzari and Fichen, 2013).

Source: Survey of Adult Skills (PIAAC) (2012), Table A4.25 for skills and qualification mismatch and Montt (2015) for Field-of-Study mismatch.

Most countries assess existing and future skill needs to address skill imbalances

13. The ability to assess and anticipate skill shortages and mismatches is crucial and has become a major policy concern. The G20 Skill Strategy adopted by the G20 Leaders in Antalya last year and the G20 Training Strategy (2010) both recognise the importance of understanding changing skill needs in order to ensure a better alignment between skill demand and supply.

14. The role of the government is not about predicting and systematically subsidising the acquisition of new skills; it is about generating and disseminating information -- a public good -- about the demand for different types of skills. Systems and tools to produce this information exist in many countries although exercises vary along several dimensions (Table 1). In most cases they provide reliable evidence to address skill imbalances. The most common approaches include medium-term occupational forecasts or assessments of current skill needs inferred from labour market information or vacancy surveys (OECD, 2016a). In many countries, more than one exercise is carried out as each approach/method presents its specific advantages and disadvantages. For instance, Canada carries out analyses of existing skill shortages along with medium to long-run forecasts to identify future skill needs and imbalances. This enables the government to tailor immediate policy intervention (e.g. identify migration opportunities or

develop short-term worker training schemes) as well as long-term policy orientations (e.g. develop apprenticeship programmes in certain fields) (Box 1). Finally, skills assessment and anticipation exercises are often carried out by Statistical Institutes and public employment services. However, this is not always the case, with employers organisations playing a crucial role in the collection of qualitative information on skill needs at the sectoral level in some countries (see the case of Brazil, discussed in Box 1).

Table 1. **Key features of skills assessment and anticipation exercises**

Dimensions	Options observed across countries
Skill proxy used: few countries can measure needs in specific skills; proxies for skills are used in most cases	qualification levels and type; field of study; occupations
Time span	Immediate/existing shortages Short-, medium- or long-term projections
Method of assessment and anticipation	Quantitative models or qualitative surveys, foresights, scenarios, Delphic methods, tracer studies
Scope	Geographical scope: national, regional, local Sectors and specific occupations covered (e.g. green, ICT, trade)
Frequency	Regular (monthly, quarterly, yearly, once in several years) Ad hoc (e.g. rotating to cover some sectors)
Bodies in charge	Ministries (education, employment, economy) Statistical institutes Public employment services Social partners (unions, employers' organisations) Others (e.g. universities, research institutes, consulting firms)

Source: Summary of information included in OECD (2016a), *Getting Skills Right*, forthcoming.

Box 1. Skills assessment and anticipation systems: examples from Canada and Brazil

Canada is a country where multiple skills assessment and anticipation exercises are carried out to provide a comprehensive picture of existing and future skill needs:

- Canada takes part in OECD's PIAAC and PISA surveys and carries out a *Test of Workplace Essential Skills*. Taken together, these three surveys provide a measure of students' and workers' skill levels in a number of skill domains.
- Canada's National Occupational Classification (NOC) contains detailed skills requirement for each occupation – updated every five years – and is the platform used to translate data from the national labour force survey and from the Canadian Occupational Projection System into meaningful labour market information;
- Apprenticeships are monitored through the Registered Apprenticeship Information System (RAIS).
- Labour shortages are identified annually, beginning in 2013, by means of an occupational tightness model.
- The Canadian Occupational Projection System (COPS) develops every two years a 10-year national-level occupational forecasts; most provincial governments carry out mid-term forecasts. Annual employment outlooks (forecasting to 3-years as part of regional LMI) are produced for 520 occupations at the regional and sub-regional level.

These information systems draw from both quantitative and qualitative sources and focus on a range of skill-related measures: qualification levels and qualification types (RAIS, NAS, COPS), specific generic or information-processing skills ("Essential Skills Framework"), and occupation. The exercises involve relevant ministries, public and private employment services/agencies, trade unions the central bank and other stakeholders. In addition, skills assessments are also carried out by large employers and sector-specific organisations to inform their strategic and workforce planning (OECD, 2016a).

Brazil's model of skills anticipation has proven highly successful and has been replicated in a number of other developing and emerging economies (Costin, C., 2015; Campbell, M., 2012; ILO/Cinterfor and SENAI, 2013; and Silva et al. 2015)). What makes the Brazilian approach stand out is the fact that the private sector takes a lead role both in developing skills forecasts and in the provision of training itself - which ensures a closer alignment between the supply of skills and the needs of employers. The system is driven by employers in various sectors and is known as the S-System. It includes, among others: SENAI (Serviço Nacional de Aprendizagem, or the National Industrial Apprenticeship Service) – a network of not-for-profit secondary level professional schools established and maintained by the Brazilian Confederation of Industry; SENAR – the National Rural Apprenticeship Service; SESI – the National Social Services for Industry; and SENAC – a vocational education institution. SENAI plays a central role by working together with a range of stakeholders (universities, businesses, science and technology centres, sector experts, etc.) to forecast the qualified labour needs of industry over a five-year period. The exercise consists of a number of interrelated activities which assess trends in technology, emerging occupations and occupational trends, new forms of work organisation, and educational gaps. The results of the exercise feed into the planning of training activities, but also into the offer of technological services to businesses to help them improve their competitiveness. The close alignment between the provision of training and business needs results in very positive labour market outcomes for training participants: 80% of SENAI graduates find employment within six months after graduation.

15. In countries where skills assessment and anticipation exercises do not exist or are only very basic, capacity building for those who are/could be in charge of skills assessment and anticipation is very important. The ILO, ILO-ITC, ETF and Cedefop have developed an interagency training course on skills anticipation and matching delivered regularly at the ILO-ITC in Turin. The same agencies also developed a compendium of guides on skills anticipation and matching (CEDEFOP, ETF, ILO, 2015).

Information on skill needs can feed into a number of different policy domains

16. Skills challenges are common across several policy domains, thus information on skill needs has the potential to inform various policy dimensions and contribute to developing a systematic and comprehensive policy response to imbalances. As far as employment policy is concerned, the outcomes of skills assessment and anticipation exercises are commonly used to update occupational standards (which provide a guide for employers about the skills, training and experience needed to carry out a job) to design apprenticeships, re-training courses and on-the-job training programmes (Box 2) and, more generally, to formulate employment policy (ILO, 2012; ILO, 2015a). For example, in the United Kingdom, skills anticipation and assessment exercises feed into the National Occupation Standards to facilitate the rapid development of standards in new occupations or occupations with changing skill requirements. In Turkey, these exercises are used to design apprenticeships in occupations and industries with greater demand for skilled labour. In addition, some countries – for example, France and Italy – skill needs information is used to help in the transition to a greener and increasingly digital economy.

17. In education, skill needs information is commonly used to inform curriculum development and set the number of student places in upper-secondary, post-secondary and tertiary education programmes, including TVET programmes. In other countries, assessments of existing and future skill needs and other types of labour market information, particularly at the local level, feed into career guidance to inform students' choice, based on labour market prospects.

18. Information on emerging skill needs is also used in some countries to develop and update selective migration policies. Australia draws upon their analyses of job vacancies and contacts with employers to identify occupations in current and future shortages in order to facilitate migration of workers with the relevant skills. Similarly, the United Kingdom's Migration Advisory Committee uses general labour market information to identify occupations experiencing shortages to advise the government on immediate skill needs.

19. Finally, social partners (trade unions and employers) often use the outputs of skills assessment and anticipation exercises to advise their members, support the development of their own training programmes or influence employment or education policy.

Box 2. How information on existing and future skill needs can shape employment policy: examples from France, Turkey and the United Kingdom

France, along with few other G20 countries, such as Germany, Italy and Turkey, makes an explicit use of the results of skills assessment and anticipation exercises to develop a policy response to the challenges related to the transition to a greener economy. As an example of the interest on 'green skill needs' in France, the "Ministère de l'écologie, du développement durable et de l'énergie" (the Environment Ministry) created in 2010 the National Observatory of green occupations (*L'observatoire national des emplois et métiers de l'économie verte*, Onemev) to identify and better understand the skills needs of the green economy in the context of the reorientation of the French national economic model. Specific and ad-hoc analyses on green skill needs have been carried out through employers and job seekers' surveys. Similarly, current skills anticipation and assessment exercises also model the impact that policy intervention – such as, for example, the introduction of a "carbon tax" – may have in encouraging the creation of employment in green occupations.

Box 2. How information on existing and future skill needs can shape employment policy: examples from France, Turkey and the United Kingdom (cont.)

Skills assessment and anticipation exercises inform the development of apprenticeship programmes across OECD countries. **Turkey**, for instance, promotes apprenticeships in occupations and industries where skills assessment and anticipation exercises highlight an increasing demand for specific skills. Priority is given, for instance, to work-based learning programmes in shortage occupations as determined by the Provincial Employment and Vocational Training Boards' skills assessment and anticipation analyses. These analyses also feed into the development of re-training programmes and ALMPs.

Skills assessment and anticipation information is used to update countries' occupational standards, providing a guide for employers about the skills, training and experience needed to carry out a job. In the **United Kingdom**, for instance, skills assessment and anticipation information is used to develop the National Occupation Standards to facilitate the rapid development of standards in new occupations or in occupations with changing skill requirements. This information, in turn, helps firms from the respective sectors identify the skills and corresponding qualifications needed for a particular job. Occupational standards, for instance, are widely used both by organisations/bodies developing and awarding qualifications, and also by employers and other stakeholders to underpin their human resource management processes and strategic business developments. The same information is also used by policy makers to update education curricula.

Similarly, the **Russian Federation** is promoting a system of skill needs anticipation for the specific purpose of developing and upgrading occupational standards and TVET programmes. The Ministry of Labour in collaboration with the Ministry of Education, the Agency for Strategic Initiatives, National Presidential Council on Vocational Qualifications, association of employers and trade unions, and training providers, prepared a list of 50 prospective vocational occupations facing shortages in the labour market, primarily in high-tech industries. Developing and upgrading occupational standards and TVET programmes for these occupations is a defined priority for state agencies. Furthermore, the Agency for Strategic Initiatives and the Moscow School of Management Skolkovo develop and publish regular Atlas of Emerging Jobs which defines emerging occupations and skills by 2020 and 2030 in key industries of the Russian Economy. The Atlas also identifies 74 jobs of the future in 19 industries and jobs that are likely to become obsolete by 2020 and 2030. The skills and occupations of the future are identified by means of rapid foresights in direct interaction between the world of work and training

Source: OECD (2016a), ILO (2015b), and ILO-MSM Skolkovo (2016, forthcoming).

Three broad challenges need to be overcome to ensure that information on skills needs is used more widely and effectively

20. First, the characteristics of exercises to identify emerging skill needs are often not aligned with their potential policy uses: the way skills are defined may not map on to useful policy making variables; the output may be too technical; or the results may not be sufficiently disaggregated at the regional, sub-regional or sectoral levels. Second, the key stakeholders may not be sufficiently engaged and, when they are, disagreements about skills needs and the required policy response may arise, requiring consensus-building.

21. Concerning the first issue, linking skill needs exercises to more specific policies may help to overcome some of these challenges, but at the risk of losing wider relevance. The governance of skills assessment and anticipation exercises lies on a spectrum ranging from those that are user/policy-driven to those that rely on independent agencies. User/policy-driven exercises are narrower in scope as they are geared to very specific policy objectives and carried out by the end-users of the information (e.g. public employment services in France and Turkey carry out skills assessment and anticipation exercises to inform their policies and programmes). In contrast, some exercises are produced by independent agencies for a more general

use. Between these two extremes lie a set of exercises led by independent agencies, but with end-users (e.g. ministries or social partners) involved in an advisory capacity, as is the case in exercises carried out by Skills Councils in Canada and the United Kingdom (Box 3).

Box 3. The role of Skills Councils in skills assessment and anticipation exercises

Skills councils are employer-led tri-partite organisations involving representatives from employers, workers and government or educational institutions. They are generally publicly funded, but can receive some additional funding from private sector members. Several countries have established such sectoral councils (either at the national or regional level), commissions or committees. Skills councils are usually independent organisations that provide a platform for the discussion of the skills-related challenges of specific sectors or regional areas, as well as the development of joint policy responses. They provide recommendations on education and labour market policy, which can be general in nature, or specific to a certain region, sector or individual education and training institution and its programmes. One of their tasks is to monitor the labour market in the relevant sector and forecast which skills will be needed. These councils are generally involved in the provision of training, thus translating their sector-specific knowledge into education and training courses.

In **Canada**, more than 30 Sector Councils (linking stakeholders from the business, labour and education communities, among others) examine current and projected skills needs. These councils help in the design and implementation of policies to assist firms and workers in adjusting to current and future skill needs and have been instrumental in the design of national occupational standards and certification programmes. Among some examples, BuildForce Canada, originally created in 2001 as the Construction Sector Council, is a national industry-led organization that works with the construction industry to provide information and resources to assist in the management of workforce requirements. Similarly, the Information and Communications Technology Council (ICTC) works with industry's stakeholders with the aim of providing information on the industry sectors in which skilled workers are predominantly employed, such as types, intensity and number of employees. Other councils, to various extents, provide analyses and insights on the skills needs of the mining sector (Mining Industry Human Resources Council), energy sector (Petroleum Human Resources Council of Canada) and the tourism sector (The Canadian Tourism Human Resources Council). In addition to that, the Canadian agency for Employment and Social Development (ESDC) has asked the Council of Canadian Academies to study how well Canada is prepared to meet future skill requirements in STEM fields. ESDC has also linked information from ICT sectors to feed into the Temporary Foreign Workers Programme.

In the **United Kingdom** sector skills councils are employer-led organisations that define occupational standards and job competencies. This information helps firms from the respective sector identify the skills and corresponding qualifications needed for a particular job. Skills councils are also instrumental in organising apprenticeships and connecting training providers and firms, hence facilitating training provision and helping increase the number of places available.

The **European Commission**, as part of its *Agenda for New Skills and Jobs*, supports the setting up of European Sector Skills Councils to anticipate the skills needs in specific sectors more effectively and achieve a better match between skills and labour market needs. The councils are meant to provide more and better information about the skills situation in each sector. They are also meant to help develop skills governance settings in each sector and national skills policies by encouraging: national stakeholders to cater more effectively to the needs of individual sectors; organisations active in the same field to learn from each other; and all stakeholders concerned to share information and experience (European Commission, 2010).

In **South Africa**, Sector Training and Education Authorities (SETA) established in 23 sectors are in charge of the development of a series of sector skills plans to implement the National Skills Development Strategy. SETAs ensure alignment of industry needs to the provision of training and skills development. They are generally funded from skills development levies paid by employers in the sector. SETAs are multi-stakeholder bodies that include representatives of government, organized employers and workers, education and training organisations, civil society and employment services. Their functions including promoting employability of workers entering the sector, facilitating training in the sector and monitoring its quality, identifying skills that are needed in the industry, particularly those that are scarce or critical, accrediting training providers, implementing projects that will help to close the skills gap.

Source: OECD (2016a), <http://seta-southafrica.com/>.

22. Regarding the second challenge, information about skills needs is most effectively used in policy making when there is good co-ordination across ministries and strong stakeholder involvement. Effective collaboration usually involves clear leadership and allocation of responsibilities amongst those involved, as well as the engagement of organisations that are representative of their base (e.g. sectoral organisations, trade unions or employer organisations). A variety of mechanisms have proven successful in helping to reach consensus. These include: working groups (as the case of the inter-ministerial skills working groups in United States), or round tables with specific objectives and realistic timelines. Skills Councils can also improve co-ordination (Box 3) in a similar way as done by independent bodies such as national skills advisory groups in Germany or the National Skills Development Agency in India.

ACTIONABLE PRINCIPLES

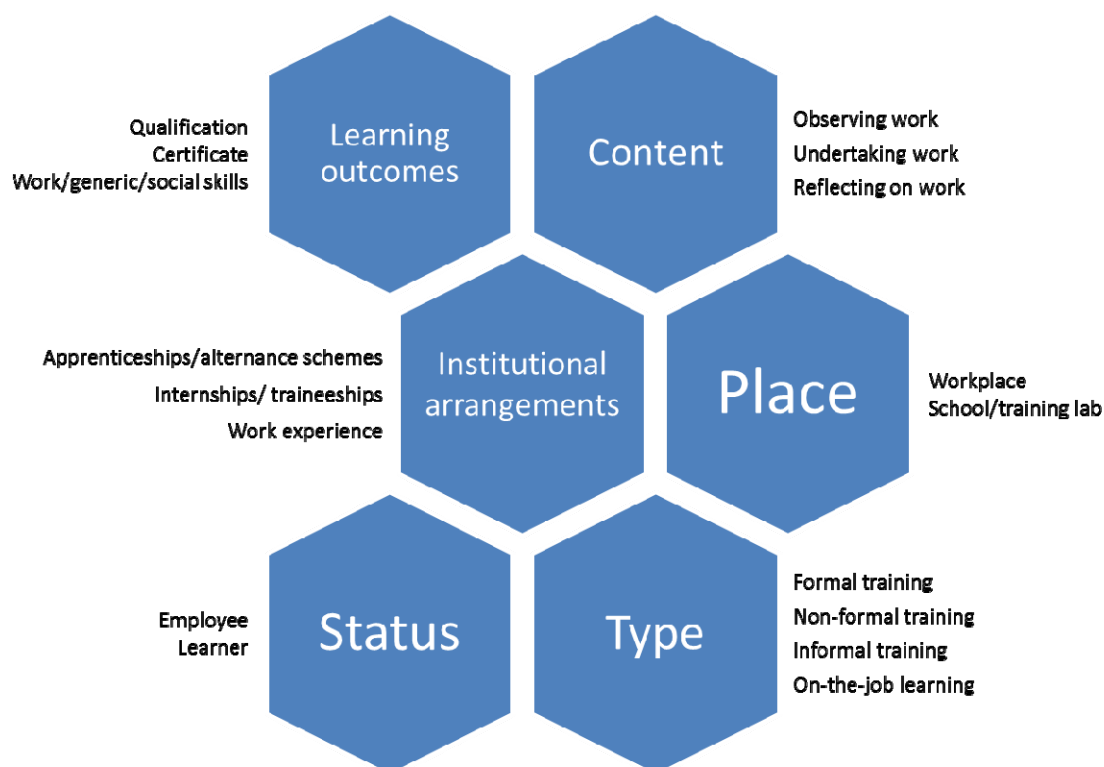
- Systematically collect and use robust and accessible information on current and expected future skills demands to provide timely information to relevant stakeholders on the content and type of education and training required
- Promote co-ordination mechanisms and social dialogue, including working groups, round tables and sector skills councils, to ensure a better collection, dissemination and use of skill needs information by all relevant stakeholders
- Where the demand for skills cannot be fulfilled by employers themselves, strengthen the incentives and enforcement of training systems to be responsive to demands, e.g. through performance contracts.

Section 2: Reinforcing the role of training and work-based learning

Work-based learning plays a crucial role to ensure that skills acquisition is in line with skill requirements at work, enhancing the employability of participants

23. Work-based learning refers to formal and informal learning that takes place in a work-based environment and provides individuals with the skills and competences needed to successfully obtain and keep jobs and progress in their professional careers. It includes apprenticeships, internships, traineeships and work-experience programmes, which are often associated with classroom learning, as well as more general on-the-job learning for workers in enterprises (Figure 2). It includes both institution-based training programs such as pre-employment technical and vocational trainings (TVET); training-related active labour market programs (ALMP); and in-house, firm-based, or on the job training (Sanchez Puerta et al., 2015).

Figure 2. Building blocks of a conceptual framework for Work-Based Learning



Source: Draft policy framework for work-based learning of the Inter-Agency Group on TVET.

24. In all these forms, work-based learning plays a crucial role to ensure that skills acquisition is in line with skill requirements at work. On-the-job training can also be a powerful instrument for employers to up-skill and re-train their workforce in the face of rapidly changing skill needs and to address skill shortages and reduce skill mismatch for new recruits lacking essential competences. A substantial amount of a person's lifetime human capital is accumulated after individuals leave formal schooling and while on the job. The evidence shows that there is a strong and positive correlation between the incidence of job training at the worker or firm level and productivity. At the worker level, several country studies for the developing world suggest that wage returns to workers may be as high as 20 percent per training episode. At the firm level, the incidence of job training is linked to higher firm productivity, a more skilled workforce, and more frequent technology adoption (Almeida, Behrman & Robalino, 2012).

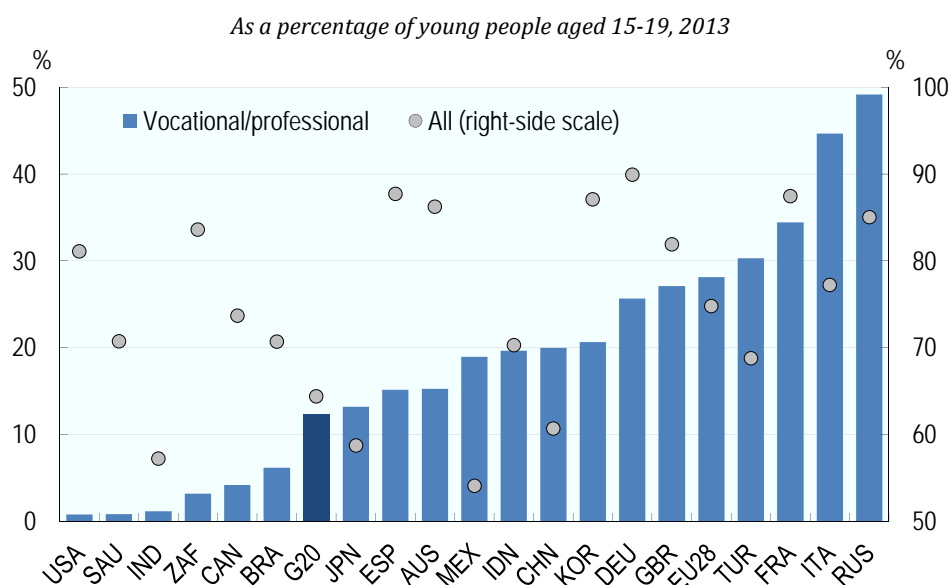
25. At the same time, more evidence and continued monitoring and evaluation efforts are needed to continue to learn what works and what does not in work-based learning provision. The returns to investment in TVET, for instance, vary widely across systems and over time, suggesting that the performance of pre-employment TVET is context-specific. Among OECD countries there is some evidence that, on average, the employability of students graduating from TVET and from general tracks are similar

but students graduating from general tracks tend to earn higher wages.⁴ However, there is considerable variation in these results across countries and within countries across students according to field of study. Hence, it remains a priority to continue to monitor the impact of work-based learning programs and make information on outcomes available to stakeholders, including the government, private sector, and potential students.

Participation is low in many G20 countries

26. Despite its potential benefits in improving workers employability, participation in work-based learning remains limited in many G20 countries. In particular, while youth stand to gain significantly from participating in TVET programmes in terms of improved job prospects after graduation and smooth school-to-work transitions, very few enrol. In the G20 on average, just over 12% of youth aged 15-19 were enrolled in TVET programmes in 2013 (Figure 3). Country figures vary from close to zero in the United States, Saudi Arabia and India to 45% and 50% in Italy and the Russian Federation, respectively. Similarly, incidence of on-the-job training remains low in many countries (Almeida, Behrman & Robalino, 2012; Figure 4 below).

Figure 3. Enrolment by type of programme (vocational and all) in G20 countries, 15-19 year olds



Note: G20 is the weighted average of the G20 countries not including Argentina.

Source: OECD Education Database; Eurostat for the European Union; and OECD estimates based on the National Sample Survey 68th round (NSS 68) for India. For South Africa, young people aged 15-19 in education are estimated using the Quarterly Labour Force Survey while data on youth in vocational programs are based on the OECD Education database.

27. Increasing participation requires significant efforts in making TVET more attractive to youth and ensuring that courses are designed in co-operation with employers so that curricula are in line with their

4 However, isolating the effect of TVET is difficult as student characteristics, some of them unobservable, influence both the likelihood of selection into TVET and the level of labour earnings. Students following the TVET track typically have lower test scores and come from less favourable parental and family backgrounds than their peers in the general track. See (Sanchez Puerta et al., 2015) and (Almeida, Behrman & Robalino, 2012).

skill needs and that pathways out of TVET into higher education exist. One important aspect in this respect is raising the profile and improving the image of TVET which is often perceived as a selection-by-failure route – i.e. it is the choice made by those who fail in general education. Improving the quality of TVET is key to a better image and requires monitoring programmes' ability to place participants in jobs (Sanchez Puerta et al., 2015). However, it is also important to share information concerning the labour market prospects that TVET offers with prospective students and their parents. The outcomes of skills assessment and anticipation exercises are crucial to inform career guidance along with other labour market information such as wages. Finally, the inclusion of white-collar occupations in apprenticeship training (as done in Germany), the expansion of TVET programmes to higher education and their integration with R&D in enterprises (as done by SENAI in Brazil) are instrumental to making work-based learning more attractive to young people.

28. Low incidence of on-the-job training points to a number of problems that affect workers and employers. These usually involved imperfections in labour and capital markets, coordination failures, as well as decision making problems.⁵

29. Participation of employers in planning VET provision and its content is also key to ensure that the skills acquired respond to existing or foreseen labour market needs. This issue is discussed in more detail below.

TVET and apprenticeship systems need to be agile and flexible in responding to evolving labour market needs and technological changes within the workplace

30. TVET programmes in initial education play a key role in promoting work-based learning and, together with apprenticeships, should provide graduates with the transferable skills that facilitate job mobility and reduce the risk of skill obsolescence. Developing transferable skills and ensuring lifelong learning for all presents major challenges for training systems as they require greater emphasis on learning by doing, working in teams and thinking creatively and the need for reliable and efficient assessment methods so that the skills developed can be properly recognized and valued by employers.

31. Unfortunately, while high youth unemployment has encouraged many countries to strengthen and modernise their TVET and apprenticeship systems, recent research highlights the limited progress in implementing reforms to improve transferable skills in TVET (Box 4).

⁵ Almeida, Rita; Behrman, Jere; Robalino, David. 2012. The Right Skills for the Job? Rethinking Training Policies for Workers. Washington, DC: World Bank

Box 4. Progress in improving the acquisition of transferable work skills in TVET

UNESCO (2015) concludes that TVET systems do not sufficiently support the development of core skills. In a cross-country analysis in the Asia–Pacific region, UNESCO (2014) summarized the major challenges to implementation as being:

- Disagreement on responsibility for imparting transferable skills in TVET;
- Rigid and heavy curricula that impede innovative teaching and learning;
- Lack of capacity to develop and/or apply innovative teaching methods; and
- Lack of adequate assessment methods.

In a report focusing on assessment of transferable skills, the European Commission noted that implementation of key competences in schools and training institutions is a complex and demanding process, and the presence of strong political commitment is not in itself enough to achieve the goal of effective transferable skills development (EC 2012). Several reports on the extent to which generic skills have been integrated into TVET systems have demonstrated that while various skills may be prioritized and identified in qualification or curriculum profiles, corresponding arrangements for delivery, assessment and reporting of these skills are often lacking.

CEDEFOP (2015) observed that in all EU member states, key competencies are part of TVET curricula, whether as discrete subject areas, as underlying principles/learning outcomes across a range of subject areas, or as integral elements of vocational subjects. It further noted that more than 50 per cent of EU countries have included key competencies in the level descriptors of their national qualification frameworks.

In the **Philippines**, a national set of core skills (basic competencies) have been agreed and training regulations specify that at each programme particular level they must be completed before the trainee can proceed to the specialized competencies. Whilst there is no centralised national assessment of core skills, TVET institutions are required by TESDA to assess the basic competencies separately using assessment tools developed by TESDA or the institutions themselves. Trainers in public institutions are guided on how to introduce core skills into classroom/institution training modules and there is evidence that private institutions provide training programmes for teachers and trainers on how to deliver and assess core skills. Capacity-building programmes for institution managers that address core skills to some degree are also available (ILO 2015c).

In **India**, whilst there is no agreed national set of transferable skills within the emerging competency-based qualifications system, stand-alone TVET curriculum modules seeking to impart employability skills exist under the Craftsman Training Scheme (CTS) and Modular Employability Skills (MES) framework of the Ministry of Labour and Employment which are supported by discrete instructional materials and separate assessment tools. (ILO 2015b).

32. Institution-based training programs could benefit from having more contestable markets for training provision. This can be achieved by levelling the playing field for private companies by ensuring that laws and institutions favour the presence of both public and private providers of training. This would foster competition and innovation in training programs. In many countries, training providers are often public, and they are paid based on inputs or outputs (such as the number of people trained) rather than on their performance or outcomes (such as the number of people who got jobs after training). Having both public and private companies would increase competition and potentially training quality (See Box 5 for an example of Queensland, Australia) (Sanchez Puerta et al., 2015).

33. The experience of countries such as Australia, which introduced a fully contestable market for VET, shows that when contestability is introduced into a training market, it must be done alongside strong regulatory mechanisms. Importantly, there need to accurate and readily available quality signals. This enables students and employers to make informed decisions about their choice of provider. Any delays in implementation of both sufficient regulatory and transparency mechanisms can lead to subpar training providers taking advantage of a lack of scrutiny and public financing. Clear and transparent eligibility

criteria for training providers need to be in place and an independent assessment of whether these criteria are met should be periodically conducted (Sanchez Puerta et al., 2015).

Adaptation of TVET to local market needs is essential to make the system more flexible and responsive to change

34. Tailoring TVET programmes to local economic and labour market needs can be facilitated through a number of mechanisms. There are a number of policy tools for tailoring the mix of sectors and occupations covered by TVET provision in a local area (Box 5). These include developing a “menu” of courses nationally, in which local providers have flexibility to decide on which programmes to deliver; allowing for customized programmes to be delivered locally as long as certain parameters are met (e.g., a demand from local employers which is based on sound labour market gap analysis); or using more decentralised market-based mechanisms to dictate course delivery.

35. Course content can also be adjusted to reflect local considerations, for example by setting aside a certain percent of nationally determined curriculum for local content; setting national framework curriculum with specifics fleshed out locally; creating national accreditation processes for locally designed curriculum; or modularising TVET programmes in a way that local actors can choose between different components to deliver.

Box 5. Successful mechanisms to adapt TVET to *local* labour market needs

In a number of countries, specific time or space is set aside within TVET curriculum to address local needs. In this way, local providers are able to cover both nationally relevant skills and competences and those most relevant locally (OECD, 2016). In Italy, a framework curriculum is developed nationally, while schools and colleges have curricular autonomy to tailor offerings to specific local needs. While a “school autonomy quota” of 20% of curriculum time is afforded to all schools in Italy, Upper Secondary Vocational Institutes are given additional flexibility to further customise TVET programmes so that they correspond to local needs and skills demands of the labour market.

India’s Institute/Enterprise Flexi-MOU represent another example of local flexibility within centrally set curricula. Industrial Training Institutes (ITI) in India are public and private training institutions under the Ministry of Labour and Employment that form the backbone of the Indian skills training system. Operating within centrally fixed curriculum systems they have had limited flexibility to develop and deliver programs that meet the specific needs of enterprises in their local catchment. Under the recently introduced flexi-MOU system, ITIs are able to work with enterprises to develop customized programs of 6 months to 1 year duration using existing national curricula as the program core. MOUs will be signed with enterprises that commit to provide 80% of participants a minimum of 6 months employment. Delivery and assessment can take place in the institution and/or the workplace involving ITI and enterprise staff working together to train and assess. These arrangements reflect a departure from the highly centralised system of specific schemes and curricula that operate in India.

Australia uses market-based mechanisms to steer TVET provision. There are 5 000 registered training organisations (RTO) which deliver nationally recognised courses within an accredited Australian Qualifications Framework (AQF). While RTO’s must apply to have permission to deliver a specific course or qualification (i.e., for it be added to their “scope”), the funding available is a key determinant of the actual mix of provision. As funding is administered through states and territories, there is diversity within Australia. However, in general, there is a trend towards demand-driven models (OECD, 2014). For example, starting in 2014, Queensland moved to a fully contestable and demand-driven skills market which expanded choice for individuals and employers to select the qualifications and training providers that best meet their needs (Queensland Department of Education, 2014). Within this system, public subsidies are used to “steer” these choices, with lower level qualifications (i.e., qualifications at certificate III level) and “higher priority” qualifications given higher subsidies.

Partnerships among local stakeholders are effective to achieve more flexibility in training provision

36. With the right level of flexibility, training institutions and schools can more effectively partner with local employers, employer associations, sector organisations, local government authorities and regional development boards to enhance the relevance and quality of TVET programmes. In particular, employer associations and sector organisations can help to identify and pool employer needs, gather useful information about whether course curriculum and delivery aligns with the needs of industry and local job opportunities, and facilitate the engagement of individual employers (Box 6).

37. At the same time, a balance must be found between tailoring TVET programmes to pressing local employer needs while aligning TVET provision with a longer-term vision for the local economy. Particular care should be taken in places characterised by a “low skills trap”, where employers demonstrate little ambition to use higher-skilled workers or move to higher value-added production; and areas that risk being “locked-in” into a small number of sectors or activities, which can hinder their ability to adapt to changing economic contexts.

Box 6. Better linking the training system to employer needs: examples from the United States and China

In the **United States**, local and regional government agencies have increasingly adopted sectoral strategy approaches to economic development and a similar approach is surfacing in the workforce-development field. As partnership between workforce and economic-development agencies becomes more common in regions and communities, the role of education and workforce agencies in mapping and building skills pipelines for key industries becomes more critical to economic-development practitioners. Public education and workforce systems organise their work through pathways and cluster models. For high schools and community colleges, establishing career-pathway models helps to connect them to the economy, and to produce workers with the appropriate skills for jobs in the region.

Maryland started working on a sectoral strategy approach in 1995 under the School-to-Work Opportunities Act (Hamilton, 2012). Some 350 business executives in ten different sectors were brought together to inform education policy makers about what skills and competences they needed to be successful. The original project was funded with USD \$25 million of federal School-to-Work funds, and the approach was bottom-up: mapping what knowledge and skills were required and developing programmes around clusters of skills. Within each county, a Cluster Advisory Board (CAB) focused on different industry clusters. In Montgomery County, Maryland, for example, which hosts the third-largest biotechnology cluster in the United States, a CAB is focused on the biosciences, health science and medicine cluster. Administrators, counsellors, and faculty members use the career-cluster system to develop programmes that extend from high school to two- and four-year colleges/universities, graduate schools, apprenticeship programmes and the workplace. Although the cluster framework was originally developed for high schools and young people, it is now being adopted by workforce investment boards and other programmes serving adults.

In **China**, the New Enterprise-based Apprenticeship Program (NEAP) was launched in 2015 as a way to involve employers in the provision of job-related training that is adapted to their skill needs, jointly with local training institutions. 13 provinces, autonomous regions and municipalities, including Beijing, Tianjin, Inner Mongolia and Liaoning, were selected to pilot the programme. The programme is meant to provide training for middle- and high-skilled workers. In each province, a small number of large or medium-sized enterprises are selected as pilot enterprises and paired up with a local training institution. Each enterprise then identifies about 100 trainees to participate in the apprenticeship programme. The trainee and the enterprise sign a work contract for a period of at least 6 months. In addition, the enterprises commit to provide training for 1-2 years through their in-house training centres and in partnership with training institutions. For instance, in Liaoning Province, 7 large enterprises were selected to carry out the pilot, with the government providing a subsidy of RMB 4000 to 6000 for each apprentice for a maximum duration of 2 years. In Chongqing, the focus was put on 10 enterprises in pillar emerging industries – e.g. automobile, electronics, rail, robots etc. – with a plan to train 950 apprentices.

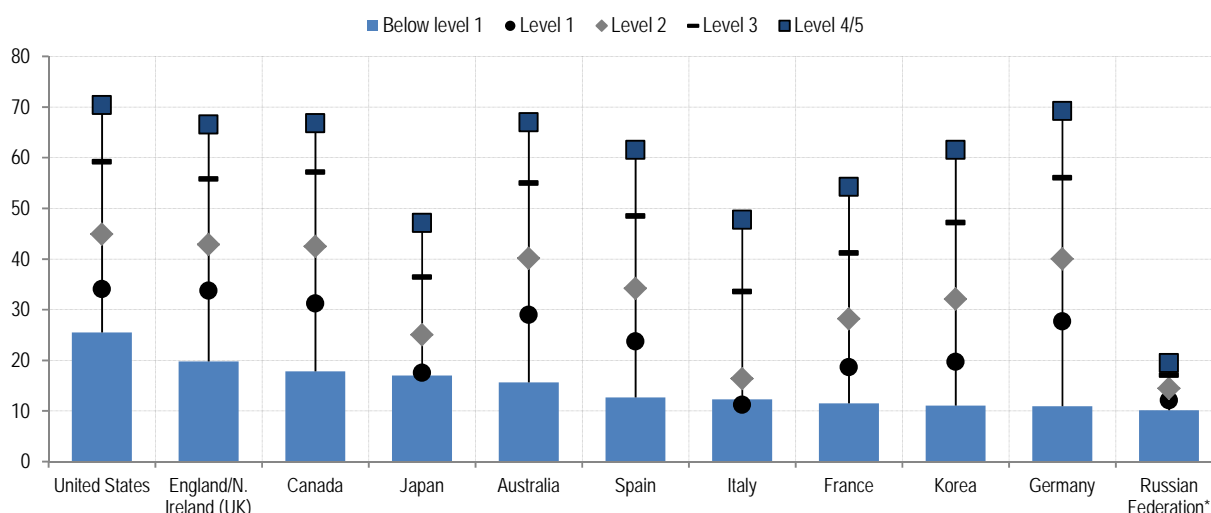
Access to work-based learning for the most disadvantaged should be facilitated and other constraints to employability addressed

38. Giving better access to quality work-based learning to those who would benefit most remains a key issue for most countries. This is the case for all types of work-based training. VET and apprenticeships training have the potential to keep at-risk youth connected with the education system and labour markets and help them acquire the skills and qualifications needed for a smooth transition to work. On-the-job training can benefit low-skilled workers following the adoption of new technology, the offshoring of some parts of production, or the introduction of new organizational structures.

39. Unfortunately, in all G20 countries for which data are available, the low-skilled and the disadvantaged tend to be under-represented in work-based learning initiatives (Figure 4). High-quality apprenticeship programmes are often too demanding for disadvantaged youth to be accepted and on-the-job training tends to disproportionately involve the most skilled.

Figure 4. Participation in job-related education/training by skill proficiency

*Percentage of workers who participated in job-related education/training over the previous 12 months, by literacy level¹. ***



(*) The sample for the Russian Federation does not include the population of the Moscow municipal area. The data published, therefore, do not represent the entire resident population aged 16-65 in Russia but rather the population of Russia excluding the population residing in the Moscow municipal area. More detailed information regarding the data from the Russian Federation as well as that of other countries can be found in the Technical Report of the Survey of Adult Skills (OECD, 2013).

(**) The PIAAC Survey of Adult Skills assesses literacy through a test. Based on the outcome of this test, individuals are assigned a score and, based on this score, they are attributed to a literacy level. Individuals scoring at level 1 – the lowest – can read relatively short digital or print text to locate a single piece of information that is identical to or synonymous with the information given in the question or directive. Individuals scoring at level 4/5 – the highest – can integrate, interpret and synthesise information from complex or lengthy texts that contain conditional and/or competing information.

Source: Survey of Adult Skills (PIAAC) (2012). Table A5.7(L).

40. Encouraging the provision of training by employers or adapting eligibility restrictions for apprenticeship programmes is crucial but under-represented individuals must also be encouraged to participate; access to credit and access to information about the returns to different skills and the quality of different training providers are both important for students and workers to make effective choices.

This is particularly relevant for the low-skilled who tend to hold low-paid jobs, face tougher credit constraints and lack information on the importance of training for their career prospects. Disadvantaged youth face a number of additional barriers: they are more difficult to reach; they are often less prepared, face problems to relocate when necessary and lack the basic skills needed to succeed; and they may also face competition from more skilled youth and reluctance by employers to take them on. In addition, the programmes offered to them may not meet the minimum quality standards offered to other youth, notably in terms of certification and quality of tutors.

41. Examples of cost-effective programmes exist, particularly designed for disadvantaged groups (Box 7; OECD, 2012; and ILO, 2011) and they tend to adopt, along with work-based learning, a comprehensive approach, including mentoring by a reference adult.

Box 7. Employability programmes for the disadvantaged

A programme for rural migrant workers in China:

In March 2014, **China** launched a vocational skills upgrading scheme for migrant workers: the Spring Tide Programme. The objective of the programme is to promote the job competence and abilities to get jobs or start up business of the workers migrating from rural areas by providing them with entrance-level skills training, skills upgrading training and entrepreneurship training.

- Entrance-level skills training involves both job-specific and foundation skills training and is targeted at new entrants into labour market in rural areas as well as farmers who are going to transfer to non-agricultural industries. The programme also offers advanced skills training courses for middle-school or high-school graduates in rural areas who do not continue their studies.
- Skills upgrading training consists in pre-job training or apprenticeship training for newly-hired rural workers possessing intermediate-level skills.
- Entrepreneurship training is provided to promote the entrepreneurial capability of rural workers who are motivated and meet certain conditions to start their own businesses.

Under the programme, financial incentives are provided to both enterprises and the training providers. In 2014, 10.69 million people were trained under the Spring Tide Initiative. Of these: 6.53 million people underwent entrance-level training, achieving an employment rate of 71.2%; 3.176 million people participated in skills upgrading training; and 986,000 people received entrepreneurship training. Governments at different levels invested RMB 3.7 billion in total.

Programmes for disadvantaged youth in Argentina, Brazil and the United States (OECD, 2012)

Box 7. Employability programmes for the disadvantaged (cont.)

In **Argentina**, the Programa Jóvenes con Futuro (PJcF) consists of both classroom training and a practical internship or on-the-job training during which participants rotate across various positions. On-the-job training accounts for 50% to 80% of the entire programme which last between 3 and 10 months. The programme is targeted mostly to disadvantaged youth. Employers who participate in PJcF are also involved in the design of the curricula with the technical assistance of the Ministry of Labor, Employment and Social Security and they directly provide the training with their own physical, financial and human resources. Employers and the Municipal Offices of Employment jointly advertise the programme and recruit candidates. The PJcF is coordinated by a Joint Executive Committee which includes representatives of the Ministry and of employers and whose main function is to evaluate the projects put forward by new companies intending to participate.

A similar programme – Capacitación Solidaria – has been running in **Brazil** since 1996. It is financed by the state, and funding is granted through competitive bidding to private training institutions and civil society organizations, as well as trade unions. These institutions are required to ensure ex-ante that training services are linked to work experience and opportunities for internships.

In the **United States**, the Job Corps programme is targeted towards youth aged 16-24 from low-income backgrounds who face one or more barriers to employment such as lacking qualifications or being a foster child, a teenage parent or a homeless youth. Job Corps services are provided at 122 centres nationwide, where most participants reside in campus-like living quarters. Programme content includes academic education and vocational training aimed at attaining an upper secondary qualification and it is also recognised as a pre-apprenticeship programme, allowing entry to apprenticeships. At the end of the programme, placement services help participants to secure employment. Other key services include health education, health care and counselling. During the programme, youth receive a stipend. Youth who complete vocational training and obtain an upper secondary qualification are eligible for a completion award payment to help with the start-up costs of independent life. The programme, despite its high cost, has been proven to be quite effective.

An Australian programme for beneficiaries of disability benefits wishing to work

In **Australia**, the Personal Helpers and Mentors Programme (PHaMs) was set up by the National Government to fund NGOs to support people who receive disability benefits and who want to work, including specific funding for arranging employment services (OECD, 2015d). PHaMs Employment Services funds and supports PHaMs providers to better assist clients who wish to enter employment or training and supports employment specialists to improve their guidance of jobseekers with severe mental illness.

ACTIONABLE PRINCIPLES

- Expand participation in work-based learning to promote successful transitions from school to work and improve the quality of skills development;
- Promote job retention and re-employment through retraining and active labour market programs in response to structural change;
- Enhance flexibility and governance within the TVET system at the local level to ensure that institutions and programmes adapt to the needs of employers, individuals, and the local labour market more generally;
- Foster the participation of individuals from disadvantaged groups – low-skilled, youth, migrants -- in life-long learning and employability programmes by addressing barriers to participation and providing appropriate incentives;
- Pursue a balance between responding to specific employer needs while developing more general transferable skills that will be beneficial to individuals throughout their working lives.

Section 3: Enhancing the adaptability of workplaces

Using available skills better is crucial in the face of changing job content

42. Putting the skills of workers to better use is also key to address skill shortages and mismatches. This could be achieved by promoting high-performance work practices (HPWP), including both work organisation structures that promote flexibility and teamwork but also incentives for better skill deployment at work such as performance pay or performance-based career pathways.

43. Recent research shows that in addition to national differences in key features of work organisation, these features have also evolved in all countries over time. In particular, discretionary learning forms of work organisation (characterised by high levels of employee learning and problem solving as well as considerable levels of employee control over work methods and the pace of work) declined between 2000 and 2010, suggesting that periods of economic stagnation and decline tend to reinforce the use of more hierarchical forms of work organization (Holm and Lorenz, 2015). Within-country differences in work organisation practices are also likely to be sizeable. For instance, some of these practices – for example, performance-based pay and career pathways, workers participation in decision making and flexibility in organising tasks and their sequence – are important features of job quality (as noted in the G20 Framework for Promoting Quality Jobs – OECD, 2015a) and their implementation varies markedly between the formal and informal sector, by firm size and industry.

44. Several programmes link skills development and HR management with workplace change to support innovation, high performance work practices and higher skills use. In most cases, existing initiatives have focused on **raising awareness** about the benefits of better skills use, and presenting HPWP as a win-win option for both employers and workers so that possible resistance can be overcome. Countries have also focused on **disseminating good practice** and sharing good advice. Critical in this respect is the identification of **role models** (Box 8). Because it is unrealistic to expect government to help every firm to improve their work organisation and job design, initiatives have often supported the development of HPWP in a limited number of businesses and then used these for **demonstration effects**. When resources are scarce, it is also important to make sure that interventions are **targeted**. In particular, because smaller employers often find it more difficult/costly to adopt such practices, it is a good idea to target interventions on SME's with growth potential.

Box 8. **Fostering the adoption of high performance work practices**

In **Australia**, policy engagement with HPWP has been driven by a perceived need to increase innovation and productivity. A number of Australian initiatives have sought to promote best practice in this area, dating from the Best Practice Demonstration Programme in the early 1990s to the more recent Partners at Work Grants Programme, currently operated in Victoria. This programme offers competitive grants to assist workplace changes that benefit all stakeholders, and is designed to encourage the development of cooperative practices in the workplace. It provides funding to support the appointment of consultants to work with organisations and for relevant training investments. There is evidence to show that some targeted firms have successfully adopted HPWP and that these firms have experienced improved performance. On the other hand, clear evidence that this has underpinned more widespread adoption throughout the business population is lacking.

Box 8. Fostering the adoption of high performance work practices (cont.)

Also in **Australia**, the so-called skills ecosystems were introduced in 2003 to develop and trial a model of skill formation that was guided by the workplace context, and which addressed the many factors behind skill use at the workplace. The projects covered areas such as VET links with research agencies to promote innovation, promoting new technology, workplace drivers of skill formation, skills formation to support the development of an industry cluster, and job design and career paths. Projects were ambitious and aimed to achieve long-term structural change. The skills ecosystem process has had some worthwhile impacts on specific industry sectors. The dairy industry in the state of Victoria, in particular, approached an increasing demand for high-end skills using the skill ecosystem methodology and has used the process successfully. The shift in product market strategy from supplying traditional commodity based markets to value-added markets with all that this entailed (e.g. tighter product specifications, the introduction of new technologies, the development of participative workplaces, higher regulatory scrutiny, and higher levels of customer expectations) were the key drivers of a well-structured, industry-driven skills ecosystem for accelerating high-end skills development. The skills ecosystem approach had a strong influence over the SFS concept. While the national projects have since ceased, they have produced valuable findings. Firstly, the concept of 'skills ecosystem' was difficult for stakeholders to comprehend. It was also found that project funding timeframes need to cover a three to five year period, as opposed to two years which was how long the projects were funded. Monitoring milestones is useful to keep the projects on track and project managers need to keep the focus on implementation (Australian Government, 2010).

In **Europe**, steps have been taken to improve the performance of organisations and the quality of jobs in a sustainable way through the European Workplace Innovation Network (EUWIN). The network supports enterprises in their efforts to improve motivation and working conditions for employees, leading to increased labour productivity, innovation capability, market resilience, and overall business competitiveness. The network:

- Disseminates evidence on the benefits of modernising the workplace and working conditions;
- Focuses on awareness-raising via dedicated regional workshops and social media;
- Provides a valuable resource for managers and employee representatives through the Knowledge Bank; and
- Is open to practitioners, social partners, policymakers, representatives of intermediary organisations, and others with an interest in the workplace.

In addition to funding and providing training in **Singapore**, the Singapore Workforce Development Agency manages the WorkPro scheme which aims to help employers adopt progressive workplace management practices, facilitate job redesign and improve work-place practices, as well as to encourage employers to recruit and retain back-to-work locals and mature workers to meet their manpower needs. The National Trades Union Congress (NTUC) and Singapore National Employers Federation (SNEF) have been appointed to market and administer WorkPro which provides financial support to enterprises covering a range of initiatives including:

- Job and work organisation redesign to improve productivity;
- Flexible work-arrangements;
- On-the-job training for new employees and older workers;
- Enhanced performance management practices;
- Employee facilities infrastructure; and
- Mentoring schemes.

Stakeholder partnerships can play an important role by supporting the development of expertise and facilitating knowledge transfers

45. While policies that target individual workplaces are important, efforts that take a geographic or sector approach can likewise generate meaningful change. This is particularly true for strategies that seek to exploit the synergies between producing higher value added products and services, and increased use of

workers' skills. Although there are mediating factors, research suggests a link between skills and product-market strategies, with companies competing in higher value added markets requiring a higher level of skills from their workers (see, for example Ashton and Sung 2011).

Box 9. The role of multi-stakeholder partnerships in fostering workplace change: examples from the United States and Australia

The Manufacturing Extension Partnership in the United States assists manufacturers in adopting and adapting new technologies and manufacturing techniques, with a particular focus on small and medium-sized enterprises. It operates through regional centers in partnership with employers, universities and educational institutions, state governments, the National Institute Standards and Technology, and other federal research laboratories and agencies. The partnership offers a wide range of services and initiatives, including support and assistance in helping companies enter or expand in global markets; adopt new technology; develop and participate in competitive supply chains; and reduce environment impacts. However, most relevant here are efforts to help companies address workforce issues at the company and community level. The partnership supports better education and training of modern production workers and promotes organizational policies that reflect progressive workforce and business practices. According to its own estimates, in FY 2014, MEP interacted with 30,056 manufacturers, generating \$6.7 billion in new and retained sales, 63,952 jobs retained or created, \$2.7 billion in new client investments, and \$1.1 billion in cost savings (www.nist.gov/mep/).

In Australia, national skills ecosystem projects were introduced in 2003 (Eddington and Toner, 2012). The skills ecosystem approach emphasizes not just how skills are developed, but also how they are deployed. With this lens, perceived skills shortages can be attributed as much to work organization and turnover challenges as to the supply of skilled people coming from education and training institutions. The projects covered areas such as VET links with research agencies to promote innovation, promoting new technology, workplace drivers of skill formation, skills formation to support the development of an industry cluster, and job design and career paths. Projects were ambitious and aimed to achieve long-term structural change.

While the national projects have since ceased, they had worthwhile impacts in specific industry sectors and the approach continues to inspire other skills initiatives. The dairy industry in the state of Victoria, in particular, successfully addressed an increasing demand for high-end skills using the skill ecosystem methodology. The shift in product market strategy from supplying traditional commodity-based markets to value-added markets with all that this entailed (e.g. tighter product specifications, the introduction of new technologies, the development of participative workplaces, higher regulatory scrutiny, and higher levels of customer expectations) were the key drivers of a well-structured, industry-driven skills ecosystem for accelerating high-end skills development.

46. Institutional arrangements and multi-stakeholder partnerships that bring together actors across policy domains (labour market, economic development, skills) as well as social partners and other intermediaries are critical in moving such strategies forward. The success of these types of partnerships and institutional arrangements often hinges on the stakeholders having flexibility to adapt policies and programmes to local needs and the work of other actors, as well as an entrepreneurial mindset to help them think beyond “business as usual”. The Manufacturing Extension Partnership in the United States and the Skills Ecosystem Projects in Australia are two examples of this type of joined-up approach (Box 9). For training organisations to be successful at fostering efficient use of existing skills, the decentralisation of financial and administrative authority to encourage flexibility is very important, along with the need for parallel efforts to enhance the entrepreneurial capacity of managers and principals.

ACTIONABLE PRINCIPLES

- Foster a better use of existing skills by promoting innovation and the introduction of high-performance work practices
- Facilitate local and national partnerships which reduce policy silos and bring social partners together with training organisations and other intermediaries to design strategies which seek to improve the adaptability of workplaces.

Section 4: Promoting labour mobility

Labour flows between sectors and jobs can foster a better matching of skills and help labour reallocation towards emerging industries and occupations

47. Encouraging labour flows between different firms, industries and occupations could contribute to an efficient re-allocation of labour resources from low- to high-demand regions/sectors, thus helping to avoid skill shortages and mismatches and promote productivity. At the same time, in the context of a fast changing economic environment, reallocation is essential for workers to take advantage of new job opportunities in emerging activities. To foster these flows and take advantage of them, the workforce needs to be adaptive and hold transferable skills.

A large share of workers change occupations and sectors after job loss

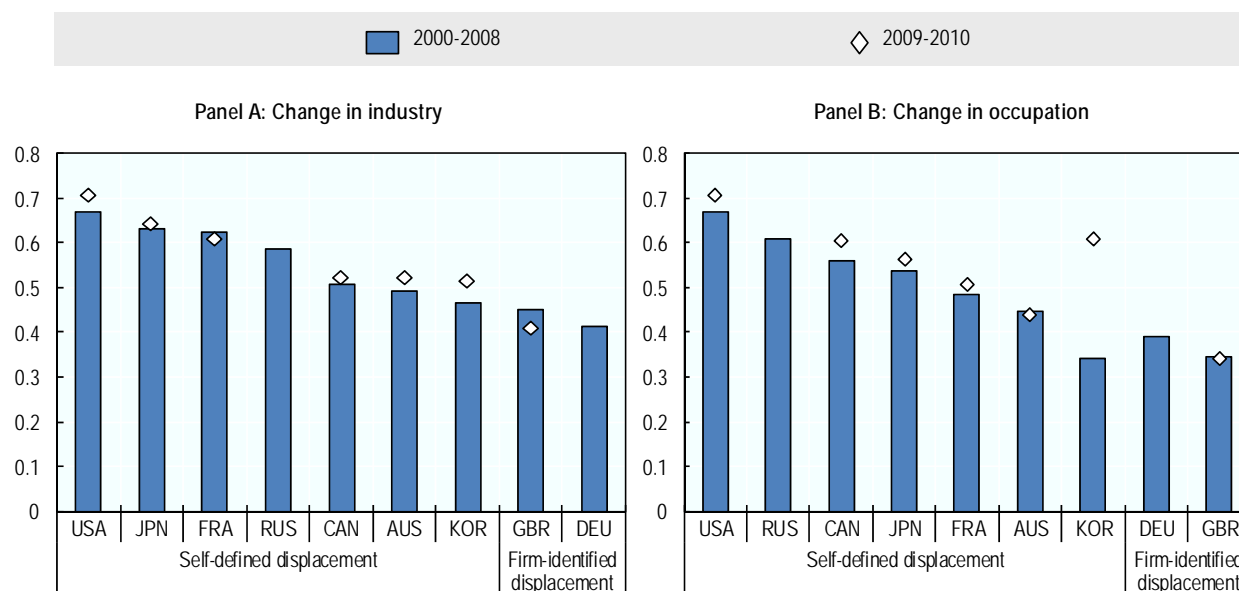
48. OECD analysis suggests that a large share of workers who lose their job for economic reasons – such as, for example, business failure – are re-employed in different industries or occupations (Figure 5). Among displaced workers who find a job within a year, between 20% and 70% change industry/occupation and the pattern seems to be stable during the economic cycle: comparing the re-employment rates for the period 2000-2008 with the more critical period of 2009-2010, mobility across industries and/or occupations is practically unaffected. The only exception is observed in Korea, where the reemployed individuals within a year after displacement changing occupation increased from 35% to 60% after the financial crisis, suggesting a potential higher transferability of skills among occupations than the observed during 2000-2008 or more dramatic structural shifts in the economy brought about by the crisis.

49. These changes in occupation hide potentially important changes in skills requirements between jobs. Across countries, about a third to a half of workers changing occupation, move to jobs requiring a relatively different skill set. For instance, of the 60% of workers who change occupation after displacement in Canada, about 25% experience a change in the skill set needed at work (OECD, 2013b).

50. As a result, transferable skills are important to speed-up re-employment, particularly in different occupations and industries as well as limit losses in wages and other acquired rights such as job security, leave and health and pension coverage.

Figure 5. Re-employed individuals that change industry or occupation

Displaced workers who find a job within a year after displacement



Source: Compiled by the OECD Secretariat using data sources described in Employment Outlook (2013), Annex 4.A1.

Some institutional settings encourage labour mobility

51. The important cross-country heterogeneity in mobility across industry/occupation could be capturing some deeper institutional differences across countries that make it more difficult for individuals to be flexible in terms of the characteristics of their new potential jobs. In setting their laws and regulations on hiring and dismissal, policy makers have to strike a balance between protecting workers from unfair treatment and abuses and promoting effective mobility of workers to promote their better allocation, productivity and wage developments. Promoting flexibility at the margin – via the liberalisation of temporary and other atypical contracts – does not generally promote efficient allocation of labour and is detrimental to the workers involved hindering their career progression and earning potential. Evidence suggests that overly strict labour protection for open ended contracts tend to reduce mobility across industry/occupation with a negative impact on allocative efficiency and productivity growth (OECD, 2013b; and Theme I paper: Generating Adequate Job Opportunities).

Skill assessment and re-skilling strategies are essential to support labour mobility and turn structural change into an opportunity for job-losers but they must be provided early

52. Most workers who lose their jobs due to economic change – including firm closures and staff cuts resulting from technological innovation – are treated just like any other unemployed person by the public employment service and other active labour market programmes. This is unfortunate because the displaced workers with the greatest need for re-employment assistance, namely, older workers who have accumulated many years of experience on their job, have different needs than the disadvantaged

jobseekers who are the main group served by re-employment and training programmes. Along with the shock of losing a long-term job, long-tenure displaced workers also have difficulties assessing the skills they have acquired on-the-job and how well these skills – possibly augmented with some top-up training - match job requirements in growing parts of the economy.

53. A number of OECD countries offer specialised re-employment services to workers affected by mass layoffs and a number of these “rapid response” measures appear to be highly cost-effective (Box 10).

Box 10. Rapid response measures for mass layoffs: A common logic, but distinct national models

One of the keys to successful programmes addressing mass layoffs is to begin assisting workers to navigate the adjustment process as soon as they are notified of a pending layoff, rather than waiting until they become unemployed. Often, the public employment service establishes a temporary office at the work site where workers receive both individual and group assistance. These services range from basic counselling (e.g. about unemployment benefits, labour market opportunities and vocational training options), to more intensive and individualised services, such as skills audits documenting workers' competences and developing training plans to fill any gaps in their skill sets so as to qualify them for job openings in growing occupations. Job fairs are also organized to put displaced workers into contact with employers who are recruiting workers.

The content of effective rapid response measures tends to be similar in different countries, but there are considerable differences in strategies governments adopt to encourage employers to cooperate with these measures, for example by providing workers and public authorities sufficient advance notification of pending layoffs, allowing the public employment service access to workers at the work site in advance of their becoming unemployed and helping to document the skills workers have acquired on the job. This variety is illustrated by the following examples:

HQ Sharp in Japan (OECD, 2015b): After a rapid deterioration of business conditions, Sharp announced in August 2012 an “early retirement plan” for the end of the year that ultimately involved almost 3 000 workers aged 40 and above. In response to this announcement, the local public employment services implemented the Support for Sharp-related Displaced Employees Headquarters (HQ SHARP), a co-ordinating committee consisting of managers from all of the public and private organisations offering re-employment and/or livelihood aid for the workers displaced Sharp and its local suppliers. This coordination made it easier for the affected workers to navigate the complex system of measures available to assist them which ranged from the outplacement services that were voluntarily offered by Sharp to its employees to the re-employment assistance that was offered by various government offices and NGOs.

Continuous-entry Reclassification Committees Quebec (OECD, 2015c): a number of Canadian provinces require employers to cooperate with the public employment service in providing rapid response measures in the case of mass layoffs. However, Quebec is the only province in Canada providing specialised adjustment assistance to workers affected by individual and small-scale displacements. These workers can enrol in “continuous-entry retraining committees” (CREC) which are open to all displaced workers from different firms. CRECs meet the needs of regions facing multiple redundancies in firms with less than 50 displaced workers (the threshold necessary to implement a CAR), and/or do not have enough public employment services staff to cope with the sudden and massive influx of displaced workers in a local employment centre. A permanent scheme such as CREC is advantageous due to its ability to meet the distinct needs of displaced workers that are often not met in public employment services; address the needs of displaced workers with different skill levels; and deliver “peer” support service because of familiarity and shared experience between staff and clients. CREC can also provide support for displaced workers from bankrupt firms, non-compliant firms (e.g. the so-called “runaway-firms”) or firms that refuse to participate in the setting up of assistance committees

The recognition of skills acquired non-formally or informally can facilitate transition to emerging industries and occupations

54. Comprehensive lifelong learning frameworks to ensure that new skills are acquired throughout one's careers and that skills are kept up to date and recognised would encourage the mobility of workers between industries and occupations, better utilization of skills and participation in further training.

55. More specifically, skills recognition systems can address skills mismatch, poverty and informality and contribute to better utilization of skills, further training, better employment outcomes, occupational mobility and the fair recruitment of migrant workers. If designed and implemented properly, these systems can bring benefits to individuals, employers and to the economy as a whole (Box 11).

Box 11. Review of skill recognition schemes

The ILO has recently conducted a review of skill recognition system. The study focused on systems for recognizing skills acquired outside formal education at sectoral, national, regional and global levels including public-driven initiatives as well as those developed in the private sector.

The study finds that the successful implementation of skills recognition systems is subject to resolving a number of challenges, namely in the areas of stakeholder involvement, awareness raising and impact assessment. In addition, the research brings to light numerous examples of barriers constraining the development and implementation of effective skills recognition systems: lack of trust, awareness and involvement of the stakeholders and users; insufficient coherence with other measures and existing policies; and limited monitoring and impact assessment. Consequently, the value of skills recognition is not sufficiently acknowledged, and many systems struggle to attract attention, capacity and resources for further development.

A lack of capacity and access to data, as well as to state-of-the-art methodologies and approaches, have a negative impact on effectiveness and return on investment in these systems. As the role of skills recognition will likely gain more importance in years to come; the focus must be placed on improving the labour market impact of existing systems, as well as on providing assistance to those that are about to develop. This includes capacity development to national stakeholders, regular monitoring and impact measurement, better incorporation into broader education and qualification systems, governance mechanisms and institutional frameworks, and better integration into broader policy issues such as education, labour market, employment and migration.

Source: Branka, J. (2016 forthcoming).

Design and test mechanisms to incentivize on-the-job training, especially for generic transferable skills.

56. Firms usually have higher incentives to provide their workers with training for job and firm specific skills. Generic skills training, such as communication and presentation skills or problem-solving, however, are less likely to be provided by firms, as there is a higher risk of trained workers leaving the firm and applying these newly acquired generic skills in other firms. Therefore specific subsidies to generic skills could be designed and tested in order to reduce the risk taken by firms in investing in this kind of training, thus increasing supply of transferable skills provision (Sanchez Puerta et al., 2015).

ACTIONABLE PRINCIPLES

- Tackle institutional barriers to labour mobility such as rules and regulations providing disincentives to change jobs and location.
- Facilitate required labour mobility between occupations and sectors through better skills assessment, skills recognition and re-training strategies for jobseekers.

Conclusions

57. Assessing and anticipating rapidly changing skills needs and exploiting the information to design flexible and responsive education and training systems are crucial to enhancing the adaptability of the workforce in the face of technological, demographic and organizational change. Fostering a better use of existing skills in the workplace and facilitating the reallocation of workers to new emerging sectors and occupations are also essential components of a comprehensive strategy to make the most of opportunities emerging from structural change while reducing its negative effects on workers, firms and countries.

58. While many G20 countries have initiatives in place in some or all of these areas, most need to expand and strengthen existing programmes or improve their effectiveness. For instance, while skills assessment and anticipation systems exist in many G20 economies, their results are only partially used in policy making. Similarly, despite evidence that work-based learning can provide valuable skills in line with labour market needs, few students enroll. In addition, few work-based programmes provide skills that can be easily transferred to new emerging sectors following structural change. Finally, employers often fail to make the best use of existing skills, worsening skills shortages and mismatches resulting from rapidly changing skill requirements.

59. These challenges call for a strategic approach, involving all relevant stakeholders. To be effective, policies aimed at improving the adaptability and employability of workers and workplaces need to be embedded in strong activation frameworks that support job seekers in the reallocation to new and emerging occupations and industries. They should also be implemented in the context of balanced labour market institutions, including employment protection regulations that encourage rather than discourage mobility while providing balanced protection to workers.

60. Based on the evidence in this paper, a set of concrete actionable measures is proposed in four areas:

- Anticipating rapidly changing skill needs and adapting policies accordingly;
- Reinforcing the role of training and work-based learning;
- Enhancing the adaptability of workplaces; and
- Promoting labour mobility.

61. Implementing successfully these policy principles will help to achieve better economic and social outcomes for workers, employers and society.

REFERENCES

- Adalet McGowan, M and D. Andrews (2015), "Labour market mismatch and labour productivity: Evidence from PIAAC data", *OECD Economics Department Working Paper*, No. 1209.
- Almeida, R.; J. Behrman & D. Robalino, 2012. "The Right Skills for the Job? Rethinking Training Policies for Workers," World Bank Publications, The World Bank.
- Australian Government (2010), *Accelerating High End Skills Development in the Dairy Manufacturing Sector*, Department of Education, Employment and Workplace Relations, Canberra.
- Branka, J. (2016), *Labour market impact of skills recognition systems*, ILO, Geneva (forthcoming).
- Campbell, M. (2012), "Skills for prosperity? A review of OECD and partner countries skills strategies", Centre for Learning and Life Chances in Knowledge Economies and Societies Research Papers, No. 39, <http://www.llakes.org/wp-content/uploads/2012/12/39.-Mike-Campbell.pdf>.
- Cedefop, ETF, ILO (2015), *Guide to anticipating and matching skills and jobs*, Volumes 1-6. Luxembourg.
- Costin, C. (2015), "Insights from Brazil for skills development in rapidly transforming African countries", *Education for Global Development*, World Bank, 14 September 2015. <http://blogs.worldbank.org/education/insights-brazil-skills-development-rapidly-transforming-african-countries>
- Dabla-Norris, Era, Si Guo, Vikram Haksar, Minsuk Kim, Kalpana Kochhar, Kevin Wiseman, and Aleksandra Zdzienicka, 2015, "The New Normal: A Sector-Level Perspective on Productivity Trends in Advanced Economies," Staff Discussion Note: 15/03, Washington: International Monetary Fund.
- Eddington, N. and P. Toner (2012), "Skills Formation Strategies in Queensland: A Skills Shortage?," *OECD Local Economic and Employment Development (LEED) Working Papers*, No. 2012/07, OECD Publishing, Paris, <http://dx.doi.org/10.1787/5k9b9mjdj4xr-en>.
- European Centre for the Development of Vocational Training (CEDEFOP) (2015), *Stronger VET for better lives: CEDEFOP's monitoring report on vocational education and training policies 2010 to 2014* (Thessaloniki).
- European Commission (2010), *New Skills for New Jobs: Policy Initiatives in the Field of Education*, Education, Audiovisual and Culture Executive Agency, Brussels.
- European Commission (2012), *Assessment of key competences in initial education and training: Policy guidance* (Brussels).
- Hamilton, V. (2012), "Career Pathway and Cluster Skill Development: Promising Models from the United States", *OECD Local Economic and Employment Development (LEED) Working Papers*, No. 2012/14, OECD Publishing, Paris, <http://dx.doi.org/10.1787/5k94g1s6f7td-en>.
- Holm, J. R., & Lorenz, E. (2015). Has "Discretionary Learning" declined during the Lisbon Agenda? A cross-sectional and longitudinal study of work organization in European nations. *Industrial and Corporate Change*.

- ILO (2011), *Increasing the Employability of Disadvantaged Youth*, Skills for Employment Policy Brief.
- ILO (2012), *Guide for the formulation of national employment policies*, ILO-ITC, Turin
- ILO (2015a), *Guidelines for inclusion of skills aspects into employment-related analyses and policy formulation*, ILO-ITC, Turin.
- ILO (2015b), *Integrating Core Work Skills into TVET Systems: Six Country Case Studies*, International Labour Organisation, Geneva
- ILO (2015c), *Matching skills and labour market requirements for quality and inclusive employment*. Country Note: Russian Federation, unpublished.
- ILO/Cinterfor and SENAI (2013), “Skills anticipation: The transfer of the SENAI prospective model”, Montevideo: ILO/Cinterfor.
- ILO-MSM Skolkovo (2016 forthcoming), *Skills Technology Foresight Guide*, Moscow, MSM Skolkovo.
- Montt, G. (2015), “The causes and consequences of field-of-study mismatch: An analysis using PIAAC”, OECD Social, Employment and Migration Working Paper no. 167.
- OECD (2012), Note On ‘Quality Apprenticeships’ prepared for the G20 Task Force on Employment of 26 September 2012.
- OECD (2013a), *Findings from the First Survey of Adult Skills (PIAAC)*, OECD Publishing, Paris.
- OECD (2013b), *Employment Outlook*, OECD Publishing, Paris.
- OECD (2014), *Employment and Skills Strategies in Australia*, OECD Reviews on Local Job Creation, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264207899-en>.
- OECD (2015a), Note On ‘G20 Framework for Promoting Quality Jobs’ prepared for the G20 Task Force on Employment of 3-4 September 2015.
- OECD (2015c), *Back to Work: Canada: Improving the Re-employment Prospects of Displaced Workers*, Back to Work, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264233454-en> ;
- OECD (2015d), *Mental Health and Work: Australia*, OECD Publishing, Paris.
- OECD (2016a), *Getting Skills Right: Assessing and Anticipating Changing Skill Needs in OECD Countries*, OECD Publishing, Paris, forthcoming.
- OECD (2016b), *Job Creation and Local Economic Development 2016*, forthcoming
- OECD (2015b), *Back to Work: Japan: Improving the Re-employment Prospects of Displaced Workers*, Back to Work, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264227200-en>.
- Pellizzari, M. and A. Fichen (2013), “A New Measure of Skills Mismatch: Theory and Evidence from the Survey of Adult Skills (PIAAC)”, OECD Social, Employment and Migration Working Paper n. 153.
- Queensland Department of Education, Training and Employment (2014), “2014. 2014-2015 Annual VET Investment Plan”, <http://training.qld.gov.au/resources/information/pdf/vet-investment-plan.pdf>.

Sanchez Puerta, M.L., D. Robalino, V. Strokova and M. Perinet, (2015), *Skills and Jobs: Lessons Learned and Options for Collaboration*, Washington, DC: The World Bank.

Silva, J., R. Almeida and V. Strokova (2015), *Sustaining Employment and Wage Gains in Brazil: A Skills and Jobs Agenda*, Washington, DC: The World Bank.

Stone, I. (2011), "International Approaches to High Performance Working", Evidence Report 37, UK Commission for Employment and Skills.

United Nations Educational, Scientific and Cultural Organization (UNESCO) (2012), *Youth and skills: Putting education to work*, Education for All Global Monitoring Report 2012 (Paris).

United Nations Educational, Scientific and Cultural Organization (UNESCO) (2014), *Transversal skills in TVET: Policy implications*, Asia-Pacific Education System Review Series No. 8 (Bangkok).

World Bank (2014). *Skills Towards Employability and Productivity (STEP) Surveys*. Washington, DC: The World Bank.

World Bank (2016), *World Development Report 2016: Digital Dividends*, Washington, DC: The World Bank.