International Labour Organization

Global framework on core skills for life and work in the 21st century

Global framework on core skills for life and work in the 21st century

First published 2021

Global framework on core skills for life and work in the 21st century

ISBN: 978-92-2-035041-6 (print)
ISBN: 978-92-2-035042-3 (web)

Printing in Switzerland REP
Designed in Switzerland BIP

▶ Foreword

The ILO marked its Centenary in 2019 at a time of tranformative changes in the world of work, driven by technological innovations, demographic shifts, environmental and climate change, and globalization. These global drivers of transformative changes are having profound impacts, both on the nature and future of work and on the place and dignity of the people within it. Today's skills will not match the jobs of tomorrow and newly acquired skills will quickly become obsolete. Many jobs will disappear and new jobs will be created as countries are transformed by these global drivers, generating countless opportunities. We are, however, also likely to enter a world of work where existing inequalities deepen and there is a lack of opportunities for people in vulnerable situations. Moreover, the COVID-19 pandemic crisis has accentuated pre-existing inequalities and created the biggest disruption to education and training systems in history. The spread of the pandemic has stretched social fabrics, further threatening public health, economic activity and the social system, as well as long-term livelihoods and decent work for all.

Considering these profound transformations affecting the world of work, the ILO has been steering its efforts towards promoting the acquisition of skills, competencies and qualifications for all workers throughout their working lives as a joint responsibility of governments and social partners. This is in order to address existing and anticipated skills gaps, paying particular attention to ensuring that education and training systems are responsive to labour market needs and enhancing the capacity of workers to make the best use of the opportunities available for decent work. Core skills are critical for enabling workers to attain decent work and in improving living standards; yet, there is currently no framework that adequately addresses the impact of global drivers of transformative changes and the pandemic on core skills, nor one that considers core skills in relation to people of all ages. There is also a lack of coherence in the definition and categorization of core skills.

The ILO has therefore developed its *Core skills for life and work in the 21st Century*, specifying a terminology, taxonomy and definitions for core skills. This Framework provides a shared vision of the ILO Centenary Declaration and its human-centred approach to shaping a secure future of work, with full, productive and freely chosen employment and decent work for all. To further develop this human-centred approach to the future of work, the Framework proposes a range of core skills to strengthen the capacities of all people to pursue lifelong learning and to address the needs of vulnerable groups, who would not otherwise be able to benefit from the opportunities offered by a changing world of work. This paper will be followed by a digital toolkit for core skills providing policy guidance to national governments and social partners for the integration of core skills in national education and training systems, qualifications and *curricula*. It would also provide tools for the development and assessment of core skills.

Sangheon Lee
Director, Employment Policy Department, ILO

Srinivas Reddy
Chief, Skills and Employability Branch, ILO

Acknowledgements

This publication is the product of a collective effort undertaken by an array of experts drawn from governments, employers' and workers' organizations, and the ILO, together with other development agencies and United Nations partners. The Framework for core skills proposed by this paper utilizes and builds upon globally recognized international frameworks for core skills together with several national frameworks for core skills, with consideration given to the diverse national contexts and arrangements found in both developing and developed economies.

Ashwani Aggarwal led the development of the Framework, and also reviewed, revised, edited and finalized the Framework and this publication. Jongwoo Lim made a substantial contribution to the development of the Framework, which included the mapping of existing frameworks and reviewing and providing comments and feedback during drafting. Jayne Norman prepared an initial draft and gave informed suggestions on how to address reviewers' comments. Paul Comyn and Pedro Moreno da Fonseca also made key contributions that included reviewing and providing feedback on various drafts of the Framework.

Thanks are due to the participants of the online workshop for the ILO Global Framework on Core Skills held on 30 July 2020 to review the Framework. The participants were:

ILO: Srinivas B. Reddy, Ashwani Aggarwal (workshop facilitator), Paul Comyn, Pedro Moreno da Fonseca, Jongwoo Lim and Rodrigo Filgueira (CINTERFOR).

External institutions: Jayne Norman (ILO's international consultant), Ronald Sultana (University of Malta), Sabeena Mathayas (National Skill Development Corporation, India), Mergim Jahiu (Swiss Federal Institute for Vocational Education and Training, Switzerland), Dimitrios Pikios (European Commission), Vladimir Kvetan (European Centre for the Development of Vocational Training), Hector Niehues-Jeuffroy and Philipp Phan Lassig (GIZ), Hiromichi Katayama and Hélène Guiol (UNESCO), Urmila Sarkar and Celine Lafoucriere (Generation Unlimited) and Bassem Nasir (UNICEF).

Other experts who provided comments and reviewed the draft of the Framework are as follows: Rafael Peels and Claire La Hovary (ACTRAV), Samuel Asfaha (ACT/EMP), Olga Strietska-Ilina, Bolormaa Tumurchudur-Klok, Cornelius Gregg, Christine Hofmann and Cheryl Chan, Angelica Munoz Marmolejo (ILO Skills and Employability Branch), Stefano Merante (ITC Turin) and Hervé Huot-Marchand (UNESCO).

The Framework would not have been possible without the strong support and guidance of Srinivas B. Reddy, Chief of the Skills and Employability Branch of the ILO.

▶ Contents

Figures and tables

▶ Abbreviations and acronyms

ADB Asian Development Bank

EU European Union

ICT information and communication technology

ILC International Labour Conference

ILO International Labour Organization

ITC International Trade Centre

ITU International Telecommunication Union

MSEM micro, small and medium-sized enterprises

OECD Organisation for Economic and Co-operation and Development

PIAAC Programme for the International Assessment of Adult Competencies

SDG Sustainable Development Goal

STEM Science, Technology, Engineering and Mathematics

TVET Technical and Vocational Education and Training

UNESCO United Nations Educational, Scientific and Cultural Organization

WEF World Economic Forum

WTO World Trade Organization

1.

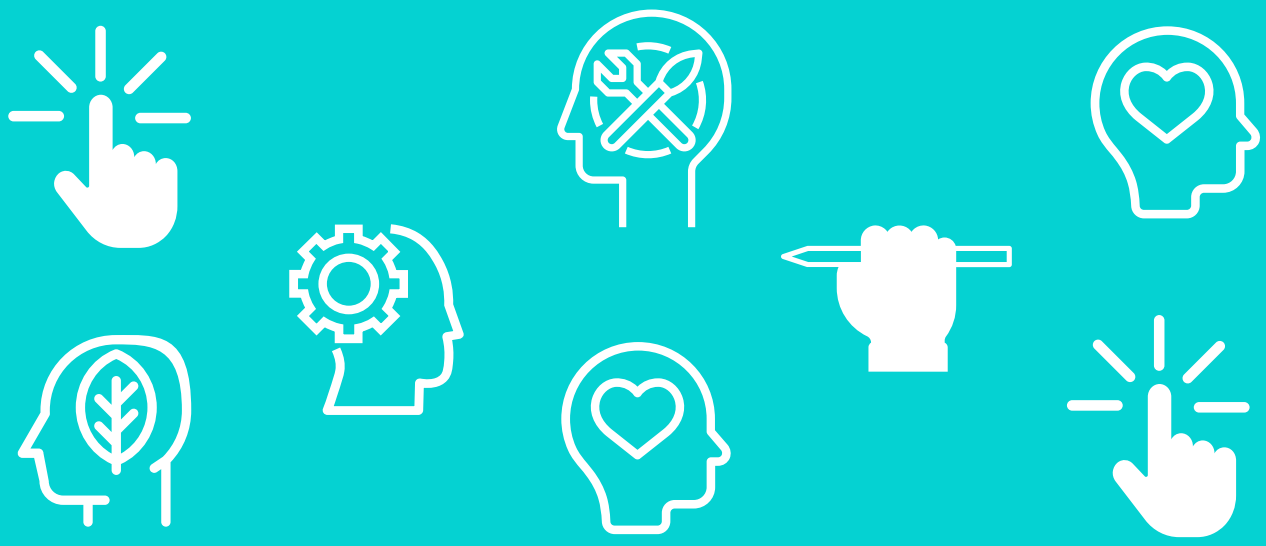
Introduction and rationale

> The importance of generic and soft skills [core skills] … is not new. Their importance, however, has been re-highlighted in the context of a future of work that includes greater uncertainty in the job market and the prospect of multiple careers.
>
> ▶ **Skills and the Future of Work** (ILO 2018a, p. 7)

As the world of work undergoes an unprecedented transformation, countries are confronted with the challenge of an increasing mismatch between skills and jobs. The ILO Centenary Declaration for the Future of Work, 2019 (ILO 2019a) identifies a transformative change in the world of work driven by technological innovations, demographic shifts, environmental and climate change, and globalization. This, at a time of persistent inequalities, will have a profound impact on the nature and future of work, creating new jobs while rendering many existing jobs obsolete. Moreover, the COVID-19 pandemic has caused health, education, social and economic crises worldwide and heightened the challenges posed by these global drivers. Apart from changes to the technical skills required by the labour market, there is a growing recognition that core skills[1] are a key catalyst for helping the workforce adapt to and thrive amid the uncertainty and disruption caused by megatrends and global crises like the pandemic.

ILO Declarations, Conventions, Recommendations and other legal instruments emphasize the need for people to acquire skills in order to obtain full, productive employment and decent work, and also for their well-being, spiritual and personal development, and active citizenship (box 1). In addition, UNICEF's Global Framework on Transferable Skills suggests that children and adolescents need skills, not only to succeed in school and at work, but also in life (UNICEF 2019). To meet these dual objectives relating to work and life, the development of core skills is essential.

1 There is no standard terminology for what is here referred to as core skills. Alternative terms include soft skills, life skills, transferable skills, employability skills, core competences, portable competences, and others.



Box 1. Statements concerning core skills from ILO instruments

According to the **ILO Human Resources Development Recommendation, 2004 (No. 195)**, lifelong education and training contribute to personal development and facilitate active citizenship. It also states that lifelong education and training should at base comprise the mastery of basic knowledge, the mechanics of reading, writing and arithmetic, and the proper use of information and communication technologies (all examples of core skills).

The Home Work Recommendation, 1996 (No. 184) recommends Member States provide training to improve homeworkers' skills, including non-traditional skills, leadership and negotiating skills (all examples of core skills).

The Special Youth Schemes Recommendation, 1970 (No. 136) considers that young persons need skills to enable them to adapt to the pace of a changing society and to take an active part in the development of their country.

The Indigenous and Tribal Peoples Convention, 1989 (No. 169) states that "[t]he imparting of general knowledge and skills that will help children belonging to the peoples concerned to participate fully and on an equal footing in their own community and in the national community shall be an aim of education for these peoples" (article 29).

The International Labour Conference's Conclusions on Skills for Improved Productivity, Employment Growth and Development (ILO 2008) states that effective skills development requires a holistic approach is taken, which includes the development of core skills, namely, literacy, numeracy, communication, teamwork, problem-solving and learning capabilities. The development of core skills, an awareness of workers' rights and an understanding of entrepreneurship are the building blocks for lifelong learning and the ability to adapt to change.

The Resolution concerning human resources training and development states that "Individuals are most employable when they have broad-based education and training, basic and portable high-level skills, including teamwork, problem-solving, information and communications technology (ICT) and communication and language skills, learning to learn skills, and competencies to protect themselves and their colleagues against occupational hazards and diseases. This combination of skills enables them to adapt to changes in the world of work".[2]

2 Para. 9 of the *Resolution concerning human resources training and development*, International Labour Conference, 88th Session, 2000.

Today, employers are placing ever greater importance on recruiting employees with sound core skills. Moreover, the transition towards a sustainable and green economy, together with a growing digital economy, has diversified the skills demanded of individuals who seek to secure a job, remain in employment, progress in a career and transition through several different occupations. As already mentioned, there is a growing awareness that core skills, alongside technical skills and academic knowledge, are critical to success within changing working and societal environments (UNICEF 2019).

The ILO, in 2013, published *Enhancing Youth Employability: What? Why? And How? – Guide to Core Work Skills* (Brewer 2013). Its grouping of 54 core skills into four domains requires revision in the context of the future of work and lifelong learning. The reasons for this are two-fold:

1. Its target group is youth only and it does not address the needs of other age groups, including existing workers or those disadvantaged in the labour market.
2. It does not include those core skills necessary to adapt to the aforementioned labour market transitions as a consequence of digitalization, the transition to a green economy and demographic changes.

The frameworks designed by other organizations display similar limitations, by not adequately and comprehensively addressing the impact of such transformative characteristics on the world of work. Given the shortcomings of its existing framework, the ILO has re-affirmed its unwavering commitment to promoting the acquisition of core skills by launching its Core skills for life and work in the 21st Century.

1.1 Objective of this paper

This paper presents a Core skills for life and work in the 21st Century that provides a terminology, taxonomy and definitions for core skills.

This new, global framework aims to reflect the ongoing transformations and the opportunities emerging in the world of work. It also considers the impact of the COVID-19 pandemic. Seeking to further the development of the ILO's human-centred approach to the future of work, this paper provides a reference for realizing the potential of all workers to enhance their capacity to make best use of the opportunities available for decent work. Underlying it is a specific focus on personal and professional development for all through lifelong learning opportunities.

Core skills for life and work in the 21st Century contributes to the ILO's mandate of promoting lifelong learning and decent work for all and aligns with SDGs (Sustainable Development Goals) 4 and 8; the ILO Centenary Declaration on the Future of Work, 2019; Human Resources Development Convention, 1975 (No. 142); and Human Resources Development Recommendation, 2004 (No. 195).

This paper will be followed by a digital toolkit providing policy guidance to national governments and social partners on the integration of core skills into national education and training systems, qualifications and curricula. It will also provide tools for the development and assessment of core skills.

1.2 Structure of the paper

Now that we have introduced the Core skills for life and work in the 21st Century global framework, the next three sections of this paper are structured as follows:

- **Section 2** addresses specific global drivers of transformative change in the world of work:
  - Technological innovation
  - Globalization of production and trade
  - Transition to a sustainable environment
  - Demographic changes
  - Impact of the COVID-19 pandemic.
- **Section 3** considers the characteristics and limitations of existing international and national core skills frameworks and maps selected frameworks in order to identify commonly used core skills
- **Section 4** proposes a global framework for core skills. This incorporates;
  - Terminology and definitions
  - Core skills and their proposed grouping

2.

The impact of global drivers of transformative change on core skills

> We call for a new approach that puts people and the work they do at the centre of economic and social policy and business practice: a human-centred approach for the future of work … First, it means investing in people's capabilities, enabling them to acquire skills, reskill and upskill and supporting them through the various transitions they will face over their life course.
>
> ▶ **Work for a Brighter Future: Global Commission on the Future of Work** (ILO 2019d)

The ILO Centenary Declaration for the Future of Work (ILO 2019a) observes that transformative change in the world of work, driven by technological innovations, demographic shifts, environmental and climate change, and globalization, at a time of persistent inequalities, is having profound impacts on the nature and future of work, and on the place and dignity of the people within it (ILO 2019a). The ILO Global Commission on the Future of Work (ILO 2019d) describes how transformative changes are driving change in the composition of employment and the nature of the tasks and duties undertaken at work and hence the skills required – including core skills (**figure 1**).

These drivers of change are challenging education and training systems to be responsive and flexible and develop new approaches to lifelong learning that supports workers in remaining employable in a fast-transforming world of work (ILO 2019d).

2.1 Technological innovation

New technologies, such as automation, artificial intelligence, the Internet of Things, blockchain solutions and augmented and virtual reality, are making a significant impact on the world of work. This is leading to wide-ranging changes in jobs, tasks and skills required. In the main, automation and digitalization are superseding low-skilled, routine jobs and changing the duties and tasks of those working in industries where automation is high (ILO 2019d). The adoption of new technology will also create new job opportunities and potentially enhance productivity. However, the specific type of jobs created, and the benefits to society from the future of work, will depend to an important extent on the availability of the skills needed to meet upcoming demand.

The Global Commission on the Future of Work cites studies indicating the likely impact of technological innovations on jobs and tasks (table 1).

▶ Table 1. Estimated effects of technological advances on the future of work

▶ **ASEAN-5: 56 per cent of jobs are at risk of automation over the next 20 years** Chang et al. (2016)
▶ **47 per cent of workers in the United States are at risk of having their jobs replaced by automation** Frey and Osborne (2015)
▶ **An average 9 per cent of jobs in the OECD are at a high risk of automation. A substantial proportion of jobs (between 50 and 70 per cent) will not be substituted entirely, but a large proportion of tasks will be automated, transforming how those jobs are carried out** OECD (2016)
▶ **Nearly 50 per cent of companies expect automation will lead to some reduction in their full-time workforce by 2022** WEF (2018)
▶ **Two-thirds of jobs in the developing world are susceptible to automation** World Bank (2016)

Source: ILO (2019d).

In addition, the COVID-19 global pandemic has provided further impetus for organizations to move vigorously towards digitalization (including the use of distance work or "teleworking"), as part of an effort to build resilience and continue operations during periods of crisis.

As a result of technological innovations, various studies have pointed to the increasing importance of both core skills and basic digital skills, such as digital literacy, the ability to access and use information and communication or office productivity software.

New jobs are more likely to be concentrated in the non-routine and the cognitive and metacognitive categories, requiring higher-order cognitive and core skills which are less conducive to automation (Ra et al. 2019). Analysis by the Asian Development Bank shows that demand for jobs requiring non-routine cognitive tasks has grown faster than for routine and manual jobs (ADB 2018). It also finds trends in wages indicate that non-routine cognitive skills have an increased premium. Work that is difficult to automate will become more of a feature of human labour; for example, complex tasks relying on both high-level cognitive skills and core skills like creativity (ILO 2017a). These changes in the nature of work require continuous learning in support of an effective lifelong learning system, strengthening a person's ability and willingness to first unlearn and then re-learn (Ra et al. 2019). Moreover, findings from UNICEF highlight the importance of core skills development in adapting to technological innovation through empowering individuals to become agile, adaptive learners and active citizens (UNICEF 2019).

Seen in this way, core skills essential in adapting to technological innovation in the world of work would include: foundational skills covering numeracy and literacy, basic digital skills, communication, teamwork, problem-solving, decision-making, critical thinking, planning and organizing, negotiation and conflict resolution, empathy, leadership, learning to learn, creativity and innovative thinking, and adaptability (Chetty et al. 2018; ILO 2019d; MGI 2018).

2.2 Globalization of production and trade

One of the strongest drivers behind economies' trajectories is the globalization of production and trade, largely supported by an intensification in the flows of production factors (capital, labour), products (goods, services), and people and technology between national economies. Globalization has profoundly affected the organization of work, business strategy and occupational content, with a significant impact on core skills needs.

Trade integration has increased over recent decades and this has led to the outsourcing of labour-intensive production by advanced economies. Low- and medium-skilled jobs have been relocated to low-wage economies. In a majority of G20 countries, job polarization has been amplified (through task relocation coupled with job substitution by technology), with the share of employment in high-skilled jobs increasing (and also in low-skilled occupations, to some extent), while that for medium-skilled jobs has decreased (ILO and OECD 2018).

Globalized businesses are strongly affected by technological shifts, the political and regulatory climate, and by socio-economic conditions. Even when conditions are favourable, businesses rise and fall, and operations may move between locations, potentially leading to negative and geographically concentrated employment shocks, with low-skilled workers the group worst hit.

The COVID-19 pandemic has accentuated the negative impact of the disruptions to supply chains and trade that began in 2019 (ITC 2020). World trade dropped in all four quarters of 2019, with a ripple effect starting in China in early 2020. In February 2020, Chinese exports fell by around 21 per cent on the previous year. The pandemic then began to hit exports from other countries. In March 2020, exports from European countries and the United States of America recorded an on year decrease of 8 per cent and 7 per cent, respectively. The United States, China and the European Union are all three major players in global supply chains, accounting for 60 per cent of global supply chain trade, as well as being the biggest exporters of goods worldwide. Lockdowns in these economies in response to the pandemic affect partner and third-country firms, as well as domestic business (ITC 2020).

Core skills transferable between occupations and between sectors are critically important, if workers are to find new jobs and economies to recover through the development of new businesses in those regions most affected by employment shocks. Global surveys on employer skills needs conducted across both developed and developing economies regularly identify the need for stronger core skills in new entrants to the labour market, as well as in existing workers. The core skills needed in the context of the globalization of production and trade include: collaboration and teamwork; planning and organizing; numeracy and literacy; basic digital skills; adaptability; self-management; learning to learn; negotiation; conflict resolution; persuasiveness; customer service; strategic, creative, innovative and critical thinking; communication; problem-solving; and decision-making (ITC 2020; ILO and OECD 2018; WTO and ILO 2017b).

2.3 Transition to a sustainable environment

Climate change and the transition to a green economy is another driving force influencing the skills needs of the current and future workforce. It is estimated that the global transition to greener economies will create millions of jobs through the implementation of cleaner and more sustainable technologies. The Global Commission on the Future of Work estimates implementing the Paris Climate Agenda will create four times as many jobs globally as are lost, with around 6 million job losses being offset by job gains of 24 million (ILO 2019d).

However, the effect on job reduction and productivity due to climate change and environmental degradation is profound, with the effects falling disproportionately on the most vulnerable (ILO 2019b). The green transition is not only creating new green occupations – for instance, careers in the capture and storage of energy and carbon emissions, energy auditors and energy engineers – but also affecting existing jobs, where reskilling or upskilling is needed. Governments and social partners should collaborate in anticipating skills needs and assist businesses in upgrading skills, including the portable skills of their current workforce (ILO 2015b).

Core skills development will play a crucial role in industrial green restructuring, country-wide structural changes and the greening of existing jobs. *Skills for a Greener Future: A Global View* (ILO 2019b) identifies those core skills needed for a green economy. Its framework proposes an explicit "green" skill, namely, an environmental awareness and respect and a willingness to learn about sustainable development, which is the starting point for any global citizen wishing to facilitate a transition to a greener way of thinking, being and doing. Moreover, a transition to a sustainable environment will demand core skills, such as improving efficiency and preventing waste, adaptability, teamwork, communication, negotiation, analytical and innovative thinking, basic digital skills, literacy, strategic thinking and leadership (ILO 2019b).

2.4 Demographic change[3]

Demographic shifts constitute a defining feature of the changing world of work. They are often complex, with considerable variations between regions and countries. The ILO Global Commission on the Future of Work report cites studies estimating the trajectories of demographic change in each region, particularly with regards to youth, women, older workers, migrants and people in a position of vulnerability (ILO 2019d). As illustrated in table 2, in some regions of the world, the aging of the population is a growing concern, whereas in others the concern is an increase in the numbers of new entrants into the labour market.

▶ **Table 2. Estimated trajectories of demographic change in the future of work**

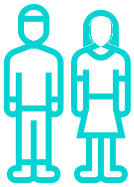
▶ **By 2050, the total dependency ratio (ratio of population aged 0–14 years and 65+ per 100 compared to the population aged 15–64 years) is projected to increase sharply in Europe (by 24.8 percentage points) and North America (by 14.4 percentage points) and moderately in Asia (by 8.5 percentage points), Oceania (by 6.8 percentage points) and Latin America and the Caribbean (by 7.6 percentage points). The total dependency ratio for Africa is projected to decrease by 18.7 percentage points and one-half of the region's population will be young (0–24 years). All other regions will have an aged population.** CUN DESA (2019)

Source: ILO (2019d).

3 This analysis mainly draws upon ILO (2016b, 2018c).

The ILO Global Commission estimates that the world economy will need to create about 520 million new jobs between now and 2030 simply to keep pace with the projected increase in the size of the labour force. However, given that this estimate does not capture a potential growth in the participation of women and older workers in the labour force nor migration flows, the demand for new jobs is likely to be even higher. To fully utilize the potential of a growing labour force, core skills development is crucial to ensuring all workers, particularly youth, women, older workers, migrants and vulnerable groups, are able to continue to adapt and fill the new jobs created in the changing world of work.

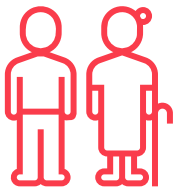
Youth



In 2015, almost 43 per cent of the global youth labour force was either unemployed or living in poverty, despite being in a job. Certain regions and countries are characterized by a "youth bulge", which may create challenges in ensuring young people's access to quality education, training, employment and decent work. In particular, there has been an upsurge in the youth population of South Asia and Africa, where young people suffer long-term unemployment. The unemployment rate among youth in these regions is at a much higher level than that of the adult population. Since the outbreak of the COVID-19 pandemic, youth have been disproportionately affected by job losses and have undergone a reduction in working hours of 23 per cent, globally (ILO 2020b). The substantial and rapid increase in youth unemployment seen since February 2020 has affected young women more than young men.

One crucial response to tackling the worsening employment situation for youth is through improving the access to, and the quality of, education and training. Unfortunately, following the COVID-19 pandemic, opportunities for skills development have been curtailed by a suspension to the ordinary operations of education and training institutions. Even though many countries continue to provide education and training to youth by harnessing digital technology, not all learners can access online education and training due to factors such as financial constraints, connectivity issues and a lack of equipment, as well as the limitations of offering practical TVET training online. To overcome the youth unemployment crisis, accentuated by the spread of the pandemic, the progressive development of core skills in combination with technical skills is indispensable for young people confronted with ongoing transformations and uncertainties in the world of work.

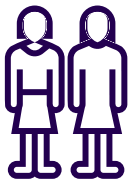
Ageing populations



Instead of a youth bulge faced by many developing countries, many developed countries are confronted by the challenges of having an ageing workforce. After a baby boom in the 1970s, the demographic trend in advanced economies has generally followed an ageing trajectory. The proportion of the world's population over 65 is projected to increase from 8 per cent today to nearly 14 per cent by 2040.

While there is no easy solution to the challenges of an ageing workforce, it is important to harness the strengths of older workers. Research on older workers shows them to commonly have better core skills acquired through past experience, for instance, greater emotional stability, better communication skills and reasoning abilities, a greater depth and breadth of wisdom, and a higher level of overall agreeableness (SHRM 2014). With the COVID-19 pandemic threatening the safety and lives of older workers, their reskilling and upskilling will be essential, if they are adapt to changing skills needs and achieve a better work–life balance.

Women



Between 1995 and 2015, the labour force participation rate for women decreased from 52.4 to 49.6 per cent, with a higher risk for women of being unemployed compared to men. This is especially the case for women in North Africa and the Arab States. Although rates of educational attainment and gender parity are increasing globally, women still face particular barriers in accessing decent employment and are more likely to be:

- In informal employment or unpaid family work;
- Tied to household, community and care responsibilities, which can restrict access to education and training, or participation in the labour force;
- Subject to occupational segregation and confined to low-skilled occupations with lower pay.

Pre-existing inequalities for women in the labour market have been amplified by the COVID-19 pandemic. Women are over-represented in the service sectors, as well as in care and domestic work, which are among the sectors hit hardest by the pandemic. Globally, almost one-half of all women workers are at high risk of losing their job. This is especially the case in North America and Europe, where more women than men are employed in at-risk sectors. The development of core and technical skills has been identified necessary for the upskilling of women workers by ILO and other international development agencies.

Labour migration

The final dimension of demographic change discussed in this paper is the growth of labour migration. Between 2000 and 2017, labour migration increased in 172 countries worldwide, reaching 258 million, up from 173 million (an increase of almost 50%) (ILO 2018c).

Migration can be a vehicle for responding in a timely and effective way to labour supply and demand. To reap the benefits of migration, however, receiving countries need to promote the inclusion of migrants through access to labour markets and decent work.

For example, migrant workers may have the technical skills for a job, but for many employers in Canada they often lack equally valued core skills, such as communication, problem-solving and teamwork, required to excel at work.[4] A study by the International Organization for Migration in Bangladesh recommends financial literacy skills for migrants.[5]

The provision of equal opportunities for core skills development, alongside technical skills, can reduce the vulnerability of migrant workers. The acquisition of core skills can strengthen their retention and facilitate upskilling among migrants, refugees and internally displaced persons, thereby reducing the risk of unemployment.

Thus seen, demographic changes would urge a broad range of core skills, including: self-reflection; learning to learn; emotional stability; leadership; negotiation and conflict resolution; achievement motivation; foundational skills (numeracy and literacy); basic digital skills; basic skills for green jobs; teamwork; communication; career management skills (goal-setting, self-management, job search, planning and organizing), and strategic, analytical, creative and innovative thinking (ILO 2016b, 2018c).

2.5 Impact of COVID-19 pandemic

In parallel with the transformative changes in the world of work discussed, the COVID-19 pandemic has significantly disrupted work and life. In particular, work organization and working modalities have had to adapt rapidly in response. Due to workplace closures, many workers have been required to work from home. This seismic shift underscores the importance of certain core skills crucial to working efficiently using digital technology and handling stress during the pandemic, namely, communication, collaboration, achievement motivation, basic digital skills and self-management.

While the pandemic crisis has impacted labour markets worldwide, its impact has been greatest on workers at micro, small and medium-sized enterprises (MSMEs) and in the informal economy (ITC 2020). As economies rebound, creating jobs in MSMEs will become key to the recovery (ITC 2020). The core skills of employers and employees within surviving MSMEs will be more important than ever in enabling the creation and implementation of the new business models needed to survive and seize opportunities presented by the crisis, so that the future can be one that "emphasizes resilience to change and unexpected shocks, embraces the possibilities offered by digitalization, prioritizes inclusiveness and leads to sustainable growth" (ITC 2020).

4 Enhancing Immigrants' Essential 'Soft' Skills: A Win–Win Solution.

5 IOM. Lack of Skills and Low Levels of Financial Literacy Make Migrant Communities Vulnerable. Press release, 15 June 2020.

A 2020 global survey of business leaders on reskilling and skills gaps conducted by McKinsey in the wake of the pandemic has led to a recommendation that the workforce is upskilled with four kinds of skills: digital, higher cognitive, social and emotional skills, as well as adaptability and resilience. Workers who have core skills, such as communication, planning and organization, decision-making, problem-solving and conflict resolution, among others, have been highly sought after when redeploying workers during the height of the pandemic (CIPD 2020). For example, under a COVID-19 Transitional Skills Programme in the United Kingdom of Great Britain and Northern Ireland, a short training programme has facilitated a shift of 11,000 workers from the hospitality and tourism sectors to the over-stretched care sector, as those workers already possessed highly sought after comparable core skills (People 1st International 2020).

Some examples of the core skills required to minimize the impact of the current and post-pandemic crisis would be basic digital skills, critical thinking, self-awareness, self-management, problem-solving, advanced interpersonal skills (negotiation, conflict resolution and persuasion), adaptability, emotional stability, empathy, creativity and innovative thinking, planning and organizing, occupational safety and health, and learning to learn (MGI 2020).

At a time of transformative change in the world of work, the ILO Centenary Declaration for the Future of Work, 2019, emphasizes the need to "act with urgency to seize the opportunities and address the challenges to shape a fair, inclusive and secure future of work with full, productive and freely chosen employment and decent work for all" (ILO 2019a). It asks the ILO to direct its efforts towards:

> Promoting the acquisition of skills, competencies and qualifications for all workers throughout their working lives as a joint responsibility of governments and social partners in order to: address existing and anticipated skills gaps; pay particular attention to ensuring that education and training systems are responsive to labour market needs, taking into account the evolution of work; and enhance workers' capacity to make use of the opportunities available for decent work.
>
> ▶ **ILO 2019a**

3.

Characteristics and limitations of existing core skills frameworks

> Transferable skills [core skills] should be … understood within the life-long learning cycle as a dynamic, progressive, and cumulative process from early childhood through adolescence to adulthood.
>
> ▶ **Global Framework on Transferable Skills** (UNICEF 2019)

This section maps some of the key international and national core skills frameworks against the core skills identified in Section 2 as needed by the future workforce in order to be better prepared to cope with changes brought about by the global drivers in the world of work. It also analyses how these frameworks define and categorize core skills.

As discussed in Section 2, megatrends and crises like the COVID-19 pandemic make it imperative that all individuals – regardless of age, gender or socio-economic strata – to be given the opportunity to acquire and upgrade core skills for their career development and to lead a fulfilling life. Responding to this demand, various international agencies and national authorities have developed frameworks of core skills. Listed below are the twelve core skills frameworks at international level and the six at the national level considered for mapping.[6]

6 The mapping analysis draws mainly upon ILO (2020c).

International frameworks

- Portability of Skills (ILO 2007);
- Enhancing Youth Employability: What? Why? and How? – Guide to Core Work Skills (Brewer 2013 for ILO);
- Women and the Future of Soft Skills Training (ILO 2017b);
- Skills for a Greener Future: A Global View – Based on 32 Country Studies (ILO 2019b);
- Key Competences for Lifelong Learning: European Reference Framework (EU 2007);
- Transferable Skills in Technical and Vocational Education and Training (TVET): Policy Implications (UNESCO 2014);
- New Vision for Education: Unlocking the Potential of Technology (WEF 2015);
- Developing Social-Emotional Skills for the Labor Market: The PRACTICE Model (Guerra et al. 2014 for World Bank);
- Reimagining Life Skills and Citizenship Education in the Middle East and North Africa: A Four-Dimensional and Systems Approach to 21st Century Skills (UNICEF 2017);
- The Definition and Selection of Key Competencies (OECD 1999);
- Skill Shift Automation and the Future of the Workforce (MGI 2018);
- The Assessment and Teaching of 21st Century Skills (ATCS) (University of Melbourne, Cisco, Intel and Microsoft 2009).

National frameworks[7]

- Australia
- Chile
- India
- Jamaica
- Philippines
- United States

Tables 3 and **4** provide a summary of the terminology, rationale, definition and the main categories of core skills used in, respectively, international and national level frameworks. In Section 4, results derived from the mapping of these selected frameworks are used to inform the development of the ILO Global Framework on Core skills for life and work in the 21st Century. Section 5, annexe, maps these selected frameworks in order to identity those core skills used most frequently at both the international and national levels.

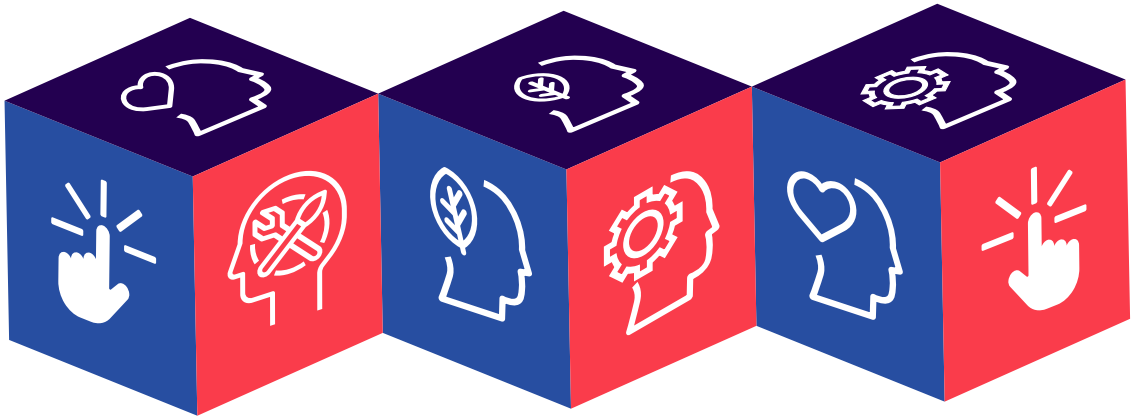
7 The six national frameworks selected represent both developed and developing economies.

▶ Table 3. Summary of international core skills frameworks

Framework name		Rationale and definition of core skills	Main categories of core skills
Developing Social-Emotional Skills for the Labor Market: The PRACTICE Model (Guerra et al. 2014 for World Bank)	Non-cognitive skills (soft skills/socio-emotional skills)	**Rationale:**[(a)] to identify the effects of non-cognitive skills – which historically have been neglected – compared to cognitive skills on schooling, employment, work experience and choice of occupation. **Definition** the "patterns of thought, feelings and behaviours" of individuals which are socially determined and can be developed throughout a lifetime to produce values. Non-cognitive skills are personality traits weakly correlated with measures of intelligence or test scores. Broadly, these skills encompass those traits not directly represented by cognitive skills or by formal conceptual understanding, but instead by socio-emotional or behavioural characteristics that are not fixed traits of the personality, and that are linked to the educational process, either by being nurtured during the school years or by contributing to the development of cognitive skills in those years (or both).	• Problem-solving • Resilience • Achievement motivation • Control • Teamwork • Initiative • Confidence • Ethics
Enhancing Youth Employability: What? Why? and How? – Guide to Core Work Skills (Brewer 2013 for ILO)	Core work skills/core skills for employability	**Rationale** to secure a first job, as well as navigate through the labour market, especially for young women and men. **Definition** the ability to learn and adapt; read, write and compute competently; listen and communicate effectively; think creatively; solve problems independently; manage oneself at work; interact with co-workers; work in teams or groups; handle basic technology; lead effectively, as well as follow supervision.	• Learning to learn • Communication • Teamwork • Problem-solving
Key Competences for Lifelong Learning: European Reference Framework (EU 2007)	Key competencies	**Rationale** to adapt flexibly to a rapidly changing and highly interconnected globalized world. **Definition** a combination of knowledge, skills and attitudes appropriate to context. These key competencies are the ones needed by all individuals for personal fulfilment and development, active citizenship, social inclusion and employment.	• Communication in the mother tongue • Communication in a foreign language • Mathematical competence • Basic competences in science and technology • Digital competence • Learning to learn • Social and civic competences • Sense of initiative and entrepreneurship • Cultural awareness and expression

Framework name		Rationale and definition of core skills	Main categories of core skills
New Vision for Education: Unlocking the Potential of Technology (WEF 2015)	21st century skills	**Rationale** to thrive in a rapidly evolving and technology-mediated world, students must be adept at such skills as critical thinking, problem-solving, persistence, collaboration and curiosity. **Definition** foundational skills, such as literacy and numeracy, in addition to competencies, such as collaboration, creativity and problem-solving, and character qualities, such as persistence, curiosity and initiative.	• Foundational literacies • Competencies • Character qualities
Portability of Skills (ILO 2007)	Core skills	**Rationale** to assist the economic and social development of Member States in the context of rapid changes in technologies, global markets and work organization, as well as high levels of youth unemployment and rising regional and international migration. **Definition** a set of non-vocational skills. These skills are relevant across occupations and professions, as well as across low- and high-level jobs, and are therefore highly portable.	• Social • Communication • Cognitive/problem-solving • Learning • Personal behavioural/ethical
Reimagining Life Skills and Citizenship Education in the Middle East and North Africa: A Four-Dimensional and Systems Approach to 21st Century Skills (UNICEF 2017)	Life skills	**Rationale** • to engage children, youth and all learners in the learning process and enable them to personalize knowledge and apply it to their lives. • to target citizens in the Middle East and North Africa where unprecedented challenges – in terms of learning, employment and social cohesion – have not been resolved due to political instability and conflict. **Definition** the softer forms of technical vocational abilities related to daily life and civic engagement. They refer to the cognitive, individual and social domains, especially with regards to personal development, social cohesion and sustainable development.	• Learning • Employability • Personal empowerment • Active citizenship
Skill Shift: Automation and the Future of the Workforce (MGI 2018)	Workforce skills	**Rationale** to adapt to the changing nature of work brought about by automation and artificial intelligence (AI). **Definition** a combination of intrinsic abilities (e.g. gross motor skills and strength, creativity and empathy) and specific learned skills, such as those relating to advanced IT and programming, advanced data analysis, and technology design.	• Physical and manual skills • Basic cognitive skills • Higher cognitive skills • Social and emotional skills • Technological skills
Skills for a Greener Future: A Global View – Based on 32 country studies (ILO 2019b)	Core/soft skills	**Rationale** to support a green transition to a low-carbon economy and the adaptation of poorer populations to climate-driven migration. **Definition** Non-vocational, non-technical skills or competencies needed to perform at work and in society.	• Core skills required across the labour force • Core skills required by the medium- to high-skilled population

Framework name		Rationale and definition of core skills	Main categories of core skills
The Assessment and Teaching of 21st Century Skills (ATCS) (University of Melbourne, Cisco, Intel and Microsoft 2009)	21st-century skills	**Rationale** to adapt and innovate in response to new demands and the changing circumstances being brought about by the shift to advanced knowledge economies and globalization. **Definition** high-priority skills everyone needs to possess, if they are to be productive and creative workers and citizens of the 21st century.	• Ways of thinking (creativity and innovation, problem-solving, learning to learn) • Ways of working (communication, collaboration) • Tools for working (information literacy, ICT literacy) • Living in the world (local and global citizenship, life and career, personal and social responsibility)
The Definition and Selection of Key Competencies (OECD 1999)	Key competencies	**Rationale** • to provide a sound conceptual framework to inform the identification of key skills and strengthen international surveys (i.e. PISA[b]) measuring the level of skills of young people and adults (i.e. PIAAC). • to improve the assessment of how well young people and adults are prepared for life's challenges, as well as lifelong learning. **Definition** the ability to meet complex demands by drawing on and mobilizing psychological resources (including skills and attitudes) in a particular context.	• Using tools interactively • Interact in heterogeneous groups • Act autonomously
Transferable Skills in Technical and Vocational Education and Training (TVET): Policy Implications (UNESCO 2014)	Transferable skills	**Rationale** because of demographic, economic, technological and environmental changes, countries must address emerging skills needs, taking into account their respective economic strength and potential. **Definition** a number of important competencies (skills) that can be learnt and are required by everyone, if they are to successfully adapt to changes and lead meaningful and productive lives.	• Critical and innovative thinking • Interpersonal skills • Intrapersonal skills • Global citizenship • Media and information literacy



Framework name		Rationale and definition of core skills	Main categories of core skills
Women and the Future of Soft Skills Training (ILO 2017b)[(c)]	Soft skills	**Rationale** with the support of J.P. Morgan, ILO has launched 14 training modules to develop soft skills, especially soft skills to enhance the employability of women in the STEM area. **Definition** social, emotional and communication skills.	• Vision setting and professional development • Creative thinking • Problem-solving • Teamwork • Reaching consensus • Interpersonal communication • Public speaking • Critical thinking and reasoning • Time management and self-organization • Starting to manage • Leadership • Personal awareness • Working across cultures • Managing upwards

Notes:
[(a)] Research by the World Bank has been hugely influential and adopted by Nobel laureate economist, James J. Heckman, who uses the terms "non-cognitive skills" and "soft skills" interchangeably. Its rationale is seen as two-fold: in an economic sense and in a societal sense (decrease of risky behaviours, such as teenage pregnancy and marriage, smoking, marijuana use and participation in illegal activities).

[(b)] Programme for International Student Assessment.

[(c)] This initiative is in effect from 1 September 2017 to 1 December 2020.

▶ Table 4. Summary of national core skills frameworks

Framework name		Rationale and definition of core skills	Main categories of core skills
Fundación Chile (Chile)	Employability competencies		• Communication • Initiative and entrepreneurship • Learning to learn • Personal effectiveness • Problem-solving • Project planning and management • Teamwork • Use of ICT
India	Employability skills, soft skills for employability		• Ability to cope with stress • Ability to plan, organize and coordinate • Communication • English language • Entrepreneurship • Leadership • Negotiation • Occupational safety and health • Presentation • Self-management
Generic Skills (Key Competencies) in Australia: The Way of the Future or a Track into the Never Never? (Australia, 1992) (Reynolds and Mackay 1997)	Generic skills/ Mayer Key Competencies	**Rationale** • "generic capabilities" have been one of the educational goals of schooling. • the Mayer committee refined the concept of key competencies developed by the Finn Review (Australian Education Council 1991), aimed at helping the effective participation of young people in work. **Definition** competencies essential for effective participation at work, in further education and, more generally, in adult life. There are three performance levels.	• Collecting, analysing and organizing information • Communicating ideas and information • Planning and organizing activities • Solving problems • Using mathematical ideas and techniques • Using technology • Working with others and in teams
Jamaica	Core skills for employment		• Collecting, analysing and organizing information • Communicating ideas and information • Planning and organizing activities • Solving problems • Using mathematical ideas and techniques • Using technology • Working with others in a team

Framework name		Rationale and definition of core skills	Main categories of core skills
Philippines	Basic competencies		• Communication • Health • Planning • Problem-solving • Safety and sustainable development • Teamwork
What Work Requires of Schools: A SCANS Report for America 2000 (United States, 1991) (U.S. Department of Labor 1991)	Workplace know-how	**Rationale** • to examine the demands of the workplace and whether American young people (all American high school pupils) are capable of meeting those demands. • The demands of employers (enterprises) were three-fold: – comfortable with technology and solving problems; – comfortable with teamwork; – have a passion for continuous learning. **Definition** workplace know-how defines effective job performance. It consists of two elements: competencies and a foundation	SCANS identifies five competencies and a three-part foundation of skills and personal qualities that lie at the heart of job performance. Five competencies: • Information • Interpersonal skills • Resources • Systems • Technology A three-part foundation: • Basic skills • Personal qualities • Thinking skills

As shown in tables 3 and 4, the two goals common to the selected core skills frameworks are:

- ▶ To raise awareness of the importance of core skills among governments, employers' and workers' organizations and other stakeholders;
- ▶ To guide the type of core skills required by the current and future workforce.

On the other hand, the selected core skills frameworks have several limitations:

- ▶ A lack of coherence in defining and categorizing core skills;
- ▶ A difference in terminology and a lack of a conceptual definition for each core skill;
- ▶ An absence of discussion on core skills development, not only for youth, but also for older workers and disadvantaged groups;
- ▶ A majority of frameworks do not adequately address the impact on core skills made by the global drivers of transformative change in the world of work.

4.

The ILO Core skills for life and work in the 21st Century

> There is an increasing need for cognitive skills, a readily adaptable workforce, which coupled with the growing complexity of job tasks will increase the demand for workers with strong core skills and motivation to learn and adapt throughout their professional careers.
>
> ▶ **Guy Ryder** (ILO Director-General) during a speech to Education and Employment Ministers at a G20 ministers' meeting in Argentina (September, 2018)

This section presents the ILO Global Framework on Core skills for life and work in the 21st Century, specifying a terminology, taxonomy and definitions for core skills.

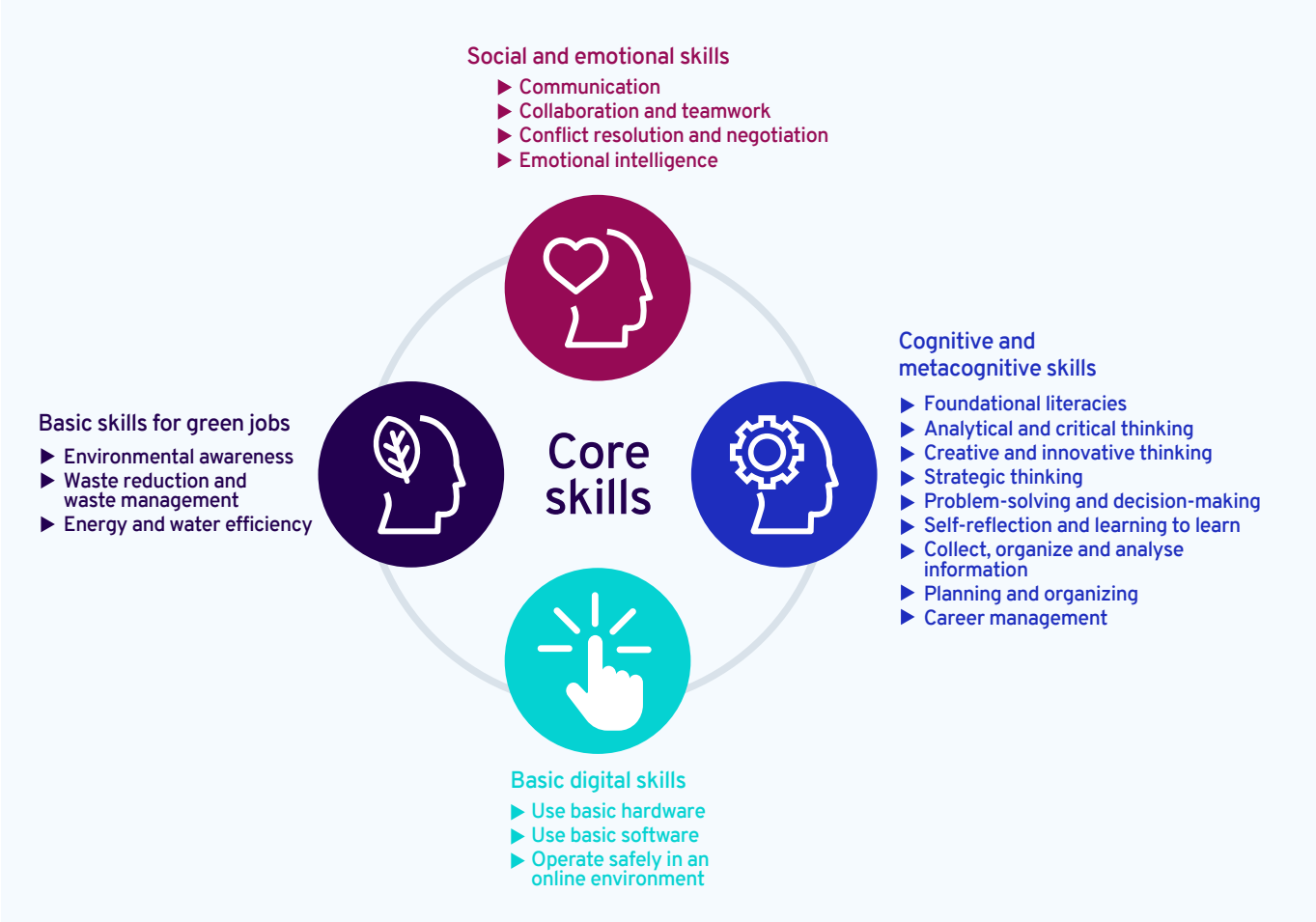
The main purposes of the Framework are to:

- Introduce the types of core skills needed to adapt to the future of work;
- Provide a foundation for the lifelong employability, decent work and well-being of all women and men in the different age groups;
- Suggest a robust, concise taxonomy and definition of core skills for policymakers, teachers, trainers and assessors;
- Underpin and promote the development of curricula in a variety of educational settings;
- Inform the professional development of teachers, trainers and institution managers;
- Raise awareness of the importance of core skills among government, social partners, academia and the community.

A thorough literature review of international and national core skills frameworks and an analysis of the impact of the global drivers of transformative changes on the world of work has been conducted to distil the most important core skills necessary to adapt to the future of work. Consultations with academia, experts in the area of core skills development, other UN agencies and representatives of national authorities for skills development have helped in revising these skills into 19 core skills considered essential both for work and life and grouping them into the following four categories (**figure 1**):

1. **Social and emotional skills**
2. **Cognitive and metacognitive skills**
3. **Basic digital skills**
4. **Basic skills for green jobs.**

▶ **Figure 1. ILO global framework for core skills**



This new ILO Global Framework on Core skills for life and work in the 21st Century presents the most comprehensive model but yet the government, social partners and education and training providers should adapt or adopt it to a given national context through social dialogue. No single framework can fully meet the diverse needs of various countries because core skills development takes place in varied contexts using varied approaches (UNICEF 2019).

4.1 Definition of Core skills for life and work in the 21st Century

The Core skills for life and work in the 21st Century is a set of non-technical skills, such as social and emotional, cognitive and metacognitive, basic digital skills and basic skills for green jobs, transferable across occupations and professions, as well as between low- and high-level jobs. Both core skills and technical skills are required by individuals, if they are to become employable, manage their careers in a fast-changing world of work, use digital technology at work and in everyday life, achieve life goals and contribute to their own well-being and that of their community.

4.2 Framework categories of core skills

The four categories of core skills that constitute the Framework are outlined in detail below.

Social and emotional skills

Social and emotional skills refer to one's "abilities to regulate one's thoughts, emotions and behaviour" (OECD 2018). These skills dynamically interact with character traits, beliefs, values, mind-sets and attitudes, and as such are congruent with the setting, environment and society in which an individual lives. They are fundamental to effective social interaction at work and have an important role to play in the learning process. They also facilitate the development and application of cognitive and metacognitive skills.

McKinsey's research estimates that between 2016 and 2030 demand for social and emotional skills will grow across all industries by 26 per cent in the United States and by 22 per cent in Europe (MGI 2018). An increasing demand for social and emotional skills does not apply only to developed economies. The Future of Jobs Survey undertaken by the World Economic Forum likewise reported (WEF 2016) that the need for social skills and complex problem-solving has been increasing significantly across 13 major developed and emerging economies[8] as well as in two broader regional groupings, ASEAN (Association of South East Asian Nations) and the GCC (Gulf Cooperation Council).

As identified in previous sections, social and emotional skills are highly sought after core skills and demand is growing significantly across all industries globally. Not only are they necessary, if individuals are to adapt to the future of work, they are also crucial to attaining decent living standards, regulating stress levels, empathizing with others and resolving conflicts. What is more, emotional involvement in the learning process has been found to sustain a deeper understanding and a desire to learn more.

Examples of social and emotional skills are communications; collaboration and teamwork; conflict resolution and negotiation and emotional intelligence.

8 Australia, Brazil, China, France, Germany, India, Italy, Japan, Mexico, South Africa, Turkey, the United Kingdom and the United States.

Cognitive and metacognitive skills

Cognitive skills refer to the brain's ability to process new information, understand, remember and use it. By developing cognitive skills, an individual can better manage the process of analysing new information and apply it to other contexts more quickly and efficiently.[9]

Overall, there is a growing recognition that cognitive skills are deeply interwoven with social and emotional skills (Ignatowski 2017). Albeit with a growing awareness of the value of social and emotional skills, cognitive skills are seen to form a foundation for reasoning and accessing and understanding specific domains of knowledge. Besides, OECD PIAAC studies show that cognitive skills permeate and are highly relevant across an array of life contexts, from education and work to home, social life and interaction with others, both inside and outside of the workplace (OECD 2019b).

Examples of cognitive skills are foundational literacies; analytical and critical thinking; creative and innovative thinking; strategic thinking; problem-solving and decision-making; self-reflection and learning to learn; collect, organize and analyse information; planning and organizing and career management.

Metacognitive skills refer to the ability of an individual to develop an awareness and understanding of their own thought processes and include knowledge about when and how to use particular strategies for learning or problem-solving (Metcalfe and Shimamura 1994). In other words, metacognitive skills are the ability to think about one's thinking or cognitive processes. Metacognition is considered one of the most effective and cost-efficient methods for improving learning and the ability to transfer or adapt learning to different contexts. Students who use metacognitive skills and related strategies more likely to show an improvement in a range of subjects that includes numeracy and literacy.

Metacognitive skills are very important, as they allow an individual to relate their personal beliefs, attitudes and experiences both to the external environment and to events, and to understand the mental state of others and analyse the motives and intentions of others (Patterson 2011).

Examples of metacognitive skills are self-reflection and learning to learn.

Basic digital skills

Basic digital skills are a set of skills for performing basic tasks involving the use of hardware, software and basic online operations. They enable individuals to gain digital literacy and flourish in society and at the workplace. Basic digital skills can enrich our lives, enabling us to interact with others and access government, commercial and financial services (ITU 2018). Examples of basic digital skills are: use basic hardware; use basic software and operate safely in an online environment.

Basic skills for green jobs

Basic skills for green jobs refers to those skills necessary for adapting oneself to related environmental regulation and requirements to curb climate change. These skills reflect the need for individuals to account for growing demands in a just transition towards environmentally sustainable economies and societies for all. The greening of economies presents opportunities for generating decent green jobs, while encouraging the acquisition of skills for green jobs that are coherent with environmental policies, green business practices and environmentally friendly technology and innovation (ILO 2015b). This transition creates the need for governments, in consultation with social partners, to support and ensure responsive training and education for fostering environmentally aware citizens and workers who strive to optimize efficiency and handle and dispose of waste responsibly. Examples of basic skills for green jobs are: environmental awareness; waste reduction and waste management; energy and water efficiency.

9 Indeed Career Guide, Cognitive Skills: What They Are and How to Improve Them, 8 February 2021.

4.3 Types of core skills and definitions

Table 5 incorporates the 19 core skills and their definitions within the four categories that comprise the revised Framework.

▶ **Types of core skill with definitions – ILO Global Framework on Core Skills for Work and Life**

Social and emotional skills

▶ **Communication**

The ability to listen effectively in order to decipher meaning; articulate thoughts and ideas effectively; exchange information; and express opinions, desires, needs and fears using oral, written and non-verbal skills in diverse environments for a range of purposes.

▶ **Collaboration and teamwork**

The ability to work in diverse teams effectively and respectfully, assuming shared responsibility for outputs and demonstrating willingness and flexibility. The ability to identify and acknowledge the feelings, experiences and viewpoints of others, showing care, affection and kindness.

▶ **Conflict resolution and negotiation**

The ability to reach a consensus between divergent interests by utilizing logical argument and influencing others to cooperate, thereby resolving disagreement or dispute.

▶ **Emotional intelligence**

The ability to identify, understand and manage one's own emotions, as well as helping others to do the same. It can comprise of four domains: self-awareness, self-management, social awareness, and relationship management, which together have 12 competencies, including empathy, adaptability, achievement orientation and positive outlook.[10]

10 Goleman, Daniel and Richard E. Boyatzis. 2017. "Emotional Intelligence Has 12 Elements. Which Do You Need to Work On?" *Harvard Business Review*, 6 February 2017.

Cognitive and metacognitive skills

▶ Foundational literacies

Literacy, numeracy, health, financial, scientific, cultural, and civic

- Literacy: the ability to understand, identify, interpret, create and communicate effectively utilizing inscribed, printed, or electronic signs or symbols for representing language.
- Numeracy: the ability to understand and have the confidence and skill to work with numbers and mathematical approaches in all aspects of life.
- Health literacy: the ability to gain access to, understand and utilize information in ways which promote and maintain good health.
- Financial literacy: the ability to understand and apply financial management skills appropriately and to be able to make a financial plan, manage debt, calculate interest, understand the time value of money in order to make informed and effective decisions about personal financial resources.
- Scientific literacy: the ability to understand those scientific concepts and processes required for personal decision-making, participation in civic and cultural affairs, and economic productivity.
- Cultural literacy: the ability to understand the perspectives of people from diverse backgrounds instead of considering one's cultural beliefs and practices as the correct ones.
- Civic literacy: the ability to participate effectively in civic life through knowing the rights and obligations of residents at local, state and national levels.

▶ Analytical and critical thinking

The ability to assess issues appropriately and adequately, and analyse relevant information to form an opinion or take an individual or a collective decision. The ability to think clearly, logically and rationally; to evaluate and interpret information; and to objectively analyse and evaluate an issue to make a judgement.

▶ Creative and innovative thinking

The ability to utilize a wide range of idea creation techniques, so as to generate, articulate and apply inventive and original ideas and perspectives, thereby solving complex tasks and life issues through original ideas.

▶ Strategic thinking

The ability to think conceptually, imaginatively, systematically and opportunistically, leading to a clearly defined set of goals, plans, and the new ideas required to survive and thrive in competitive and changing environments.

▶ Problem-solving and decision-making

The ability to identify and assess issues and problems, utilize available resources to generate and "brainstorm" potential solutions, evaluate the pros and cons of solutions and decide on a solution.

▶ Self-reflection and learning to learn

Self-reflection is the ability to apply reason to thought and behaviour, reflecting upon personal characteristics, assessing progress and identifying areas of for self-improvement.

Learning to learn is the ability to apply the cognitive process of personal learning (what and how we learn) and to make use of guidance to continuously pursue learning new knowledge and skills and strive for improvement.

▶ Collect, organize and analyse information

The ability to search, select, evaluate and organize information in order to effectively and efficiently mobilize relevant information. The ability to re-structure and model sourced information to produce personal interpretations of data.

▶ Planning and organizing

The ability to plan and organize tasks in order to fulfil the job responsibilities satisfactorily within a given time and appropriately for a complex environment and situation.

▶ Career management

The ability to establish, plan and work towards the achievement of short- and long-term goals having both tangible and intangible success criteria. The ability to exchange information and ideas with individuals and groups that share a common interest, developing relationships for mutual benefit. The ability to use labour market information and intelligence to help identify work opportunities, understand work contexts and work conditions and apply job-search skills.

Basic digital skills

▶ Use basic hardware

The ability to operate a personal computer, tablet, mobile phone or other digital device using the hardware functionalities, such as a keyboard, mouse, navigation buttons and touchscreen technology, where appropriate.

▶ Use basic software

The ability to use and troubleshoot basic programs and applications, and able to word process, manage files, and access and adjust privacy settings.

▶ Operate safely in an online environment

The ability to safely use basic online functions, applications, digital learning and communication platforms and media to explore, analyse and share information safely and ethically.

Basic skills for green jobs

▶ Environmental awareness

The ability to understand and demonstrate an awareness of the physical environment and the need for it to be protected.

▶ Waste reduction and waste management

The ability to use, manage and dispose of resources in ways that sustain the natural and physical environment.

▶ Energy and water efficiency

The ability to use energy and water efficiently in ways that sustain the natural and physical environment.

4.4 Way forward and implementation of the ILO core skills framework

Based on a survey of specialists and experts, the following global products have been identified as needed to support the implementation of theILO Global Framework on Core skills for life and work in the 21st Century.

- A digital toolkit for core skills that provides policy guidance on the integration of core skills into national education and training systems, qualifications and curricula. It may also provide tools for the development and assessment of core skills.
- Development of a massive open online course (MOOC) on core skills for the capacity building of policy-makers, teachers, assessors and learners.

5.

Annex. Mapping of the selected international and national core skills frameworks

Name of core skill	ATCS (University of Melbourne, Cisco, Intel and Microsoft 2009)	EU (2007)	ILO (2007, 2013, 2017, 2019)	MGI (2018)	OECD (1999)	UNESCO (2014)	UNICEF (2014, 2017)	WEF (2015)	World Bank (2014)	Australia	Chile	India	Jamaica	Malawi	Philippines	United States	Total (16)
Communication	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	16
Problem-solving	o	o	o	o	o	o	o	o	o	o	o		o		o	o	14
Collaboration	o	o	o	o	o	o	o	o	o	o	o		o			o	13
Planning and organizing		o	o	o	o	o	o	o	o	o		o	o		o	o	13
Numeracy	o	o	o	o			o	o		o	o	o	o	o		o	12
Literacy	o	o	o	o			o	o		o	o	o	o	o		o	12
Teamwork	o	o	o	o	o	o	o	o	o	o					o		11
Decision-making	o	o	o	o	o	o	o	o	o		o					o	11
Self-discipline and self-management		o	o	o	o	o	o	o	o	o	o					o	11
Metacognition (learning to learn)	o	o	o		o	o	o	o	o	o	o					o	11
Creativity and innovative thinking	o	o	o	o	o	o	o	o		o						o	10
Ability to work without supervision	o	o	o	o	o	o	o	o	o								9
Critical thinking	o	o	o	o	o	o	o	o			o						9
Negotiation	o	o	o	o	o		o		o			o				o	9
Basic digital skills	o	o		o		o	o	o		o			o			o	9
Leadership			o	o	o		o	o	o			o				o	8
Sensitivity to diversity	o	o	o			o	o	o	o								7
Adaptability		o	o	o	o	o		o	o								7
Time management		o	o	o	o	o		o			o						7
Strategic thinking		o	o	o	o		o	o								o	7
Responsibility / dependability	o	o		o			o		o							o	6
Initiative and proactive approach		o	o	o				o	o	o							6
Conflict resolution	o	o	o			o	o									o	6
Systematic inquiry			o	o	o			o								o	5
Cultural awareness (cultural literacy)	o					o	o		o							o	5
Citizenship (civic literacy)	o	o				o	o								o		5
Self-confidence /esteem		o				o	o		o							o	4
Gender sensitivity	o	o					o		o								4
Basic financial literacy		o		o			o	o									4
Assertiveness		o	o		o				o								4
Sensitivity to environment		o				o	o										3
Ability to work under pressure					o				o			o					3
Positive attitude towards work		o							o								2
Client orientation					o					o						o	2
Occupational safety																	0

6.

Bibliography

ADB (Asian Development Outlook). 2018. *Asian Development Outlook (ADO) 2018: How Technology Affects Jobs*. Manila, Philippines.

Australian Education Council. 1991. *Young People's Participation in Post-compulsory Education and Training: Report of the Australian Education Council Review Committee* [Finn review]. Canberra: Australian Government Publishing Service.

Brewer, Laura. (2013). *Enhancing Youth Employability: What? Why? and How? – Guide to Core Work Skills*. Geneva: ILO Skills and Employability Department.

Chang, Jae-Hee, Gary Rynhart, and Phu Huynh. 2016. "ASEAN in Transformation: How Technology is Changing Jobs and Enterprises". ILO Bureau for Employers' Activities, Working Paper No. 10.

CIPD (Chartered Institute of Personnel and Development). 2020. "COVID-19: Tips for Assessing Transferable Skills and Redeploying".

Chetty, Krish, Urvashi Aneja, Vidisha Mishra, Nozibele Gcora, and Jaya Josie (2018). "Bridging the Digital Divide in the G20: Skills for the New Age". Economics: *The Open-Access, Open-Assessment E-Journal* 12 (2018–24): 1–20.

Council of the European Union. 2008. *Council Resolution on better integrating lifelong guidance in lifelong learning strategies*. 2008/C 319/02.

EU (European Union). 2007. *Key Competences for Lifelong Learning: European Reference Framework.* Luxembourg: Office for Official Publications of the European Communities.

Frey, Carl Benedikt, and Michael Osborne. 2015. *Technology at Work: The Future of Innovation and Employment*. Citi GPS: Global Perspectives & Solutions.

Guerra, Nancy, Kathryn Modecki, and Wendy Cunningham. 2014. "Developing Social-emotional Skills for the Labor Market: The PRACTICE Model", Policy Research Working Paper 7123. World Bank Group, Social Protection and Labor Global Practice Group.

Harris, Karen, Austin Kimson, and Andrew Schwedel. 2020. "Labor 2030: The Collision of Demographics, Automation and Inequality". Boston: Bain & Company.

Ignatowski, Clare. 2017. "What Works in Soft Skills: Development for Youth Employment? – A Donor's Perspective". Youth Employment Funders Group.

ILO. 2007. "Portability of Skills". [International Labour Office GB (Governing Body)]. Geneva.

—. 2008. "Conclusions on Skills for Improved Productivity, Employment, Growth and Development". International Labour Conference, 97th session, 2008. Geneva: ILO.

—. 2011. "A Changing World: Adapting to an Ageing Population in the Workplace".

—. 2015a. *Toward Solutions for Youth Employment: A 2015 Baseline Report*. Solutions for Youth Employment.

—. 2015b. *Guidelines for a Just Transition Towards Environmentally Sustainable Economies and Societies for All.*

—. 2016a. "Ways Forward in Recruitment of Low-skilled Migrant Workers: In the Asia-Arab States Corridor". ILO White Paper, Regional Office for Arab States.

—. 2016b. "The Future of Work Centenary Initiative: The Future of Labour Supply – Demographics, migration, unpaid work". ILO Issue Note Series 2.

—. 2017a. *The Future of Work We Want: A Global Dialogue*. Summary Report August 2017.

—. 2017b. "Women and the Future of Soft Skills Training". An initiative of the ILO Women in STEM Workforce Readiness and Development Programme.

—. 2018a. *Skills and the Future of Work: Strategies for Inclusive Growth in Asia and the Pacific*. Thailand: ILO Regional Office for Asia and the Pacific.

—. 2018b. *World Employment and Social Outlook: Trends for Women 2018 – Global snapshot*. Geneva.

—. 2018c. "Skills for Migration and Employment: Policy Brief – Skills for Migration and Employment". ILO Skills and Employability Branch in collaboration with Labour Migration Branch.

—. 2018d. *World Employment and Social Outlook 2018: Greening with Jobs*. Geneva.

—. 2019a. "ILO Centenary Declaration for the Future of Work Adopted by the Conference at Its One Hundred and Eighth Session, Geneva, 21 June 2019". International Labour Conference.

—. 2019b. *Skills for a Greener Future: A Global View – Based on 32 Country Studies*, ILO Global Report. Geneva.

—. 2019c. *Skills Shortages and Labour Migration in the Field of Information and Communication Technology in India, Indonesia and Thailand*, ILO "The Future of Work in ICT" Project. Geneva.

—. 2019d. *Work for a Brighter Future: Global Commission on the Future of Work*. Geneva.

—. 2020a. Teleworking During the COVID-19 Pandemic and Beyond: A Practical Guide. Geneva.

—. 2020b. "ILO Monitor: COVID-19 and the World of Work, Fourth edition – Updated Estimates and Analysis". 27 May 2020.

—. 2020c. "Discussion Paper: Core Work Skills for Lifelong Active Society". (Unpublished).

ILO and Cedefop. 2011. *Skills for Green Jobs: A Global View – Synthesis Report Based on 21 Country Studies*. Geneva.

ILO and OECD. 2018. *Global Skills Trends, Training Needs and Lifelong Learning Strategies for the Future of Work*. Report prepared by the ILO and OECD for the G20 Employment Working Group 2nd Meeting of the Employment Working Group. Geneva.

ITC (International Trade Centre). 2020. SME *Competitiveness Outlook 2020: COVID-19: The Great Lockdown and its Impact on Small Business*. ITC, Geneva.

ITU (International Telecommunications Union). (2018). Digital Skills Toolkit. Geneva.

MGI (McKinsey Global Institute). 2017. *Jobs Lost, Jobs Gained: What the Future of Work Will Mean for Jobs, Skills, and Wages*. McKinsey & Company, Report November 2017.

—. 2018. "Skill Shift: Automation and the Future of the Workforce". McKinsey & Company, Discussion Paper May 2018.

—. 2019. *Globalization in Transition: The Future of Trade and Value Chains*. McKinsey & Company.

—. 2020. *Thriving after COVID-19: What skills do employees need?* McKinsey & Company.

Metcalfe, Janet, and Arthur P. Shimamura, eds. 1994. *Metacognition: Knowing About Knowing*. Cambridge, MA: The MIT Press.

OECD (Organisation for Economic Co-operation and Development). 1999. "The Definition and Selection of Key Competencies (DeSeCo)".

—. 2016. *New Skills for the Digital Economy: Measuring the Demand and Supply of ICT Skills at Work*. Technical Report prepared for the 2016 Ministerial Meeting on the Digital Economy. Paris.

—. 2018. *Social and Emotional Skills: Wellbeing, Connectedness and Success*. Paris.

—. 2019a. *OECD Employment Outlook 2019: The Future of Work*. Paris.

—. 2019b. Skills Matter: *Additional Results from the Survey of Adult Skills*. Paris: OECD Skills Studies.

Patterson, Janet. 2011. "Metacognitive Skills". In *Encyclopedia of Clinical Neuropsychology*, edited by J.S. Kreutzer, J. DeLuca, and B. Caplan. New York, NY: Springer.

People 1st International. 2020. "COVID-19 Transitional Skills Programme Receives Overwhelming Response From Hospitality and Tourism Workers Keen to Redeploy into Care Sector".

Ra, Sungsup, Unika Shrestha, Sameer Khatiwada, Seung Won Yoon, and Kibum Kwon. 2019. "The Rise of Technology and Impact on Skills". *International Journal of Training Research* 17 (sup. 1): 26–40. DOI:10.1080/14480220.2019.1629727.

Reynolds, Chris, and Tony Mackay. 1997. "Generic Skills (Key Competencies) in Australia – The Way of the Future or a track into the Never Never?" Paper presented at the British Educational Research Association Annual Conference, 11–14 September, University of York.

Skills Development Scotland. n.d. *Core Skills and Modern Apprenticeships*. (Retrieval date: 18/05/20).

SHRM (Society for Human Resource Management). 2014. *The Aging Workforce: Leveraging the Talents of Mature Employees*. Alexandria, VA: SHRM Foundation.

Sultana, Ronald G. 2012. "Learning Career Management Skills in Europe: A Critical Review". Journal of Education and Work 25 (2): 225–248.

UN DESA (United Nations, Department of Economic and Social Affairs). 2019. *World Population Ageing 2019: Highlights*. New York: UN Department of Economic and Social Affairs

UNESCO (United Nations Educational, Scientific and Cultural Organization). 2014. Transferable Skills in Technical and Vocational Education and Training (TVET): Policy Implications. UNESCO Bangkok Office.

UNICEF (United Nations Children's Fund). 2017. *Reimagining Life Skills and Citizenship Education in the Middle East and North Africa: A Four-Dimensional and Systems Approach to 21st Century Skills – Conceptual and Programmatic Framework*. Jordan: UNICEF MENA Regional Office.

—. 2019. Global Framework on Transferable Skills. New York, NY: UNICEF, Education Section in Programme Division.

University of Melbourne, Cisco, Intel and Microsoft. 2009. "The Assessment and Teaching of 21st Century Skills (ATCS)".

U.S. Department of Labor. 1991. "What Work Requires of Schools: A SCANS Report for America 2000", opinion paper. Washington, DC.

World Bank. 2016. *Taking Stock of Programs to Develop Socioemotional Skills: A Systematic Review of Program Evidence. Definitions – What Are Socioemotional Skills?* Washington, DC.

WEF (World Economic Forum). (2015). *New Vision for Education: Unlocking the Potential of Technology*. Geneva.

—. 2016. *Future of Jobs Survey: Employment, Skills and Workforce Strategy for the Fourth Industrial Revolution*. Geneva.

—. 2018. *The Future of Jobs Report 2018: Centre for the New Economy and Society*. Geneva.

WTO (World Trade Organization) and ILO. 2017. *Investing in Skills for Inclusive Trade*. Geneva.

There is an increasing need for cognitive skills, a readily adaptable workforce, which coupled with the growing complexity of job tasks will increase the demand for workers with strong core skills and motivation to learn and adapt throughout their professional careers.

▶ **Guy Ryder** (ILO Director-General)

Transferable skills [core skills] should be … understood within the life-long learning cycle as a dynamic, progressive, and cumulative process from early childhood through adolescence to adulthood.

▶ **UNICEF**

ilo.org

International Labour Office
Route des Morillons, 4
1211 Geneva 22
Switzerland

ISBN 978-92-2-035041-6