

## **Learning for better life and work**

Improving education and training policies to contribute to well-functioning labour markets and sustainable enterprises

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A powerful and balanced voice for business



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## **Excecutive Summary**

Education and training can improve life and job satisfaction, and individuals and businesses' prospects. They can enhance employment, avoid exclusion, increase social cohesion and civic participation, and contribute to prosperity and well-being.

Looking back in history, cultures always tried to ensure that the competencies required for a well-functioning society were learned. Educational arrangements largely succeeded in this endeavour, and knowledge, skills and values were passed between generations and expanded over time.

Today, the scale, pace and scope of change, and the exponential diversity, complexity and volatility of the knowledge and skills differentiates this period from previous historical periods. In this context, education and training are more challenged than ever to adapt to changing demands and prepare for an uncertain future.

# But what is stopping us to improve education policies? Which are the most common issues and barriers?

• Deficiencies in education and training policies become evident by a mismatch with **labour market needs**. Skills enable decent work, ease informality, increase employment and allow better wages. However, **skills mismatches** have become a major issue, blocking the prospects of individual and businesses, and impacting productivity and the aggregate economy. Labour market imbalances appear in the form of over or underqualification, shortages or surpluses in specific sectors and occupations, and insufficient skills mobility to match skills supply and demand. OECD skills for jobs database estimated that some 35 per cent of workers in OECD countries are over or under-qualified, and the International Organization of Labour (ILO) recently referred to a share of mismatches ranging from 20 per cent to almost 90 per cent. A 2018 Korn Ferry study projected a global shortage by 2030 of some 85 million jobs, with an estimated financial impact of up to USD 8.452 trillion.

Education and training policies are part of the problem but can be part of the solution to this issue. The quality of education goes together with more efficient labour markets in matching skill supply to firms. However, skill imbalances are also related to imperfections and frictions in the labour market. Tackling imbalances, therefore, would require coordination of education and training with a broader range of policies. • There are **other issues closer to education systems** themselves, that can act also as a barrier to quality learning.

- Some are **basic requirements**, like participation of all in education and training, and a minimum investment. But these are preconditions for achieving good learning outcomes, but other policies are required above certain thresholds.

- There are other **well-known issues**, like segmentation of schools of diverse quality and differentiated access. Some of the countries analysed in this report show a certain level of segmentation. Class size has been frequently mentioned, particularly when students' backgrounds and skills foundations are very different, but teachers' recognition seems to have a higher impact. Attracting quality teachers seems to be a key challenge.

- Outdated methodologies and outdated curricula are a growing concern. Learning contents become quickly obsolete, particularly but not only in technical areas. Outdated curricula fail to equip them with the skills and knowledge required discouraging people from participating in education. On the other hand, traditional education focuses on subject contents and memory. Still, memorised knowledge is less valuable than understood knowledge and the skills to find and discern reliable sound information. While most students retain about 20 per cent of what they hear and 75 per cent of what they see and interact with, the lecture teaching model is still prominent, with little room for interaction.

- Academic and business worlds seem to be detached. Employability often appears to be a foreign concept to the general education system. Teachers and school leaders may have little contact with businessesan sometimes even have a negative view. Employers and managers, on their side, may look at education as an endogamic and disconnected world, unable to deliver the skills needed and disengage from these policies.

- Education policies struggle with technologies. Sometimes there is a problem with the equipment of schools, teachers and students, but more frequently is an issue of learning how to use it to transform education environments and learning methods.

- **Evaluation** is another challenge. For a few countries, lack of evaluation of education and training policy is an issue. Still, for most of them, the problem is that evaluations are poorly designed and insufficiently followed up with improvement action plans.

## Modernising and reforming education. Some solutions

Following the analysis of these barriers, identifying what needs to be taught and learned, and considering existing good practices, research evidence and evaluation results, the following recommendations can be useful to inform education and training policies and reforms.

#### Be strategic. Build a sound strategy, outcome-oriented and evaluated

• Design a long-term, comprehensive and concerted education and training strategy. Avoid scattered policy changes and work in a longer-term plan, based on shared diagnosis, broad consensus and participation of stakeholders and policymakers on the outcomes to be achieved.

• Give a lifelong approach to the strategy. from pre-school and compulsory education to further education and training and lifelong learning.

• Set learning objectives thinking on the competencies needed for a better life and work, and coordinate with a broader range of policies in that endeavour. Start with labour market policies and employment services, but go beyond, for example, in HR management digital and low carbon transitions, industrial change, mobility or social inclusion.

• Set targets and include well-designed monitoring and evaluation systems in the strategy. Shift focus on resources and curriculum towards outcomes, including labour market integration. Establish quality standards and incorporate well-designed assessments. Provide specific feedback and support for the implementation of recommendations.

• Reinforce governance with permanent participation of stakeholders, including social partners, at local, regional, sectoral and national levels Commit business to take some ownership and responsibilities in the education and training strategies.

Be aware of the necessary base. Guarantee sound foundations for initial education

• Aim for sufficient investment and full participation in initial education. Set a minimum target of USD 50000 of cumulative expenditure per student between the age of 6 to 15, adapted to a feasible public budget. Monitor participation and adopt targeted measures to increase and prolong it. Support access and safeguard quality standards in all schools to avoid segmentation.

• Ensure a healthy, constructive and safe school environment and empower teachers. Guarantee a minimum level of equipment and reasonable student-teacher ratio and support the teaching profession. Ensure that teachers have continued training as needed to address the changing demands of the labour market.

Think on employability and equip learners for the future, not the past

• Ensure a sound, employable competencies base for adaptability in more volatile, unpredictable environments. Without disregarding knowledge, start with information processing skills, including the digital literacy needed for computational thinking, effectively accessing and using the knowledge available online and discerning its relevance and reliability. Emphasise cognitive skills, like analytical, critical, and creative thinking, problem-solving and the abilities necessary for "learning to learn". Integrate non-cognitive skills, like communication, collaboration and teamworking, empathy, conflict resolution and negotiation, and developing a "growth mindset". Equip with entrepreneurial skills like planning, organising, decision-making, initiative, leadership, persistence and resilience. Develop self-responsibility and work ethics values.

• Advance participative methodologies to update traditional approaches and move fully to them when the focus shifts to tackle challenges with no single solution. Use more heterogeneous resources and learn by doing. Make the classrooms a space to collaborate and discuss. Exercise how to find relevant information, deal with different perspectives and work in a team.

• Make the best of technology to rethink and redesign education activities and environments. For example, you can "flip classrooms" by doing a team assignment at school and listening to a video lecture at home, using digital textbooks as databases, redesigning spaces, recording and providing feedback, train skills in simulated environments, or personalising learning actions with the appropriate technology. Moreover, upskilling teachers and trainers in a clever use of education technology and ensuring students' access to a minimum level of equipment, are indispensable prerequisites.

#### Maximise adults lifelong learning

• Promote a culture of lifelong learning, increase learning opportunities, build accessible, flexible pathways and facilitate progression, including through recognition of prior learning. Target participation of those most excluded from lifelong learning.

Break the walls between the worlds of education and work

• Monitor and anticipate labour market needs to keep curricular content and learning methods updated and target skill mismatches. Build or improve technical capacity and permanent mechanisms to observe, identify, describe, discuss and forecast learning needs. Translate them into updated learning offer, updated occupational standards, and career counselling. Throughout the whole process, involve, consult and discuss data on current and future needs with employers and key stakeholders.

• Ensure that everyone receives work-oriented education and training before joining the labour market. Maximise the number of young people

attaining a vocational or university qualification and ensure at least smaller vocational modules or working experience for the rest.

#### • Cooperate with business to bring education and industry closer.

Approach teachers, schools and education policymakers to the world of work and promote regular participation of industry in education policies and centres. Ensure employers' participation in identifying labour market needs and curricular updates. Commit them to extend different forms of work-based learning, in general, vocational and university education. Support businesses to share the most recent equipment for training. Involve them in transition-towork services, from lifelong guidance to job-matching. Promote employers' involvement in well-integrated lifelong learning systems beyond their direct responsibility for their employees' training.



## Foreword

Adequate education and training are key for individual professional development and relevance to labour market needs. They are also crucial for businesses to improve productivity, foster innovation and adapt to change. Policymakers agree and understand that effective education policies result in a better equipped, skilled, and future-ready population. Unfortunately, many countries are not yet ready to reform their existing education systems, policies, and infrastructure to meet changing industry and societal needs.

As the world of work continues to evolve, and at an increasingly rapid pace, skills mismatches remain a major challenge for labour markets. There is an urgent need for education and training systems to address these mismatches, equip people with adequate skills and anticipate future needs to improve individual and business opportunities. Effective education systems and well-functioning labour markets foster job creation and enterprise sustainability.

In this context, the International Organisation of Employers (IOE) and *Business at OECD* (BIAC) are launching this report addressing how education policies can contribute to and promote well-functioning labour markets and sustainable enterprises. The aim is to support and better inform education and training policies so they can effectively contribute to individual and societal well-being and prosperity.

This report identifies the main trends and common barriers to successful education policies and outlines some good practices. It also provides a short overview of the current situation of education systems in selected countries (initially Argentina, India, Italy and South Africa), based on interviews with country experts, to illustrate diverse contexts of education systems and policies. More country analysis can be added in the second phase of this project.

We hope this report contributes to the elaboration of education policies and systems that improve students' level and scope of skills that are urgently needed in the current and future labour markets and, ultimately, promote economic growth, job creation and well-being.

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## **Introduction: The educational endeavour**

Children can absorb, store, analyse and combine vast amounts of knowledge, skills and values. And this ability to learn prolongs in different forms over the life course.

We know that people with good levels of education and skills have more opportunities in the labour market, for example, in terms of wages, employment and job quality, (OECD, 2019) (Ionescu & Cuza, 2012) (Asai, Breda, Rain, Romanello, & Sangier, 2020) (Quintini , 2011). They are also more satisfied with their work and life, (Möwisch, Brose, & Schmiedek, 2021) (Diener, Suh, & Lucas, 1999) (Botha, 2013). Companies that manage to find, use and expand the required talent become more adaptable, can increase their capacity to innovate and see their productivity and competitiveness grow<sup>1</sup> (Toner, 2013) (Bauman & Winzar, 2016). And there is also enough evidence to conclude that, collectively, well-educated societies see lower unemployment and lower levels of exclusion, more active citizen participation, increased prosperity and higher stability and well-being (Peterson & Hanusek, 2013) (ILO, 2016) (Campbell, 2006) (Toner, 2013)<sup>2</sup>.

Awareness of the value of teaching and learning is not new. Looking back on history, we find that, in one way or other, cultures always tried to ensure that the knowledge, skills and values required for a well-functioning society were passed between generations.

When written language appeared, scribes had to be trained to ensure that knowledge was preserved. Training in all kinds of jobs and trades was needed following the establishment of the first large cities. And learning requirements were further transformed through the successive rounds of industrial revolutions. Cultures had to identify which competencies were key to their progress, and formal education was established to ensure they were learned and attained<sup>3</sup>. Educational arrangements largely succeeded in this endeavour, and knowledge and skills increased over time. But they also failed in many facets and societies fell intermittently in crisis, when they

<sup>&</sup>lt;sup>1</sup>E.g., There is a strong interaction between knowledge, skills and innovation, and a strong positive association between education, skills and per capita income, both within and across countries. (Toner, 2013). There are strong correlations between students' performance in reading, science and competitiveness (Bauman & Winzar, 2016)

<sup>&</sup>lt;sup>2</sup> E.g., The link between education and prosperity can be seen, for example, in the association between the rapid growth of some countries and their students' performance in international skills assessments (Peterson & Hanusek, 2013). Increased educational attainment, coupled with sufficient productive employment opportunities, can have a positive impact at the national level, promoting inclusive economic growth and helping to reduce income inequalities. (ILO, 2016). There is overwhelming empirical evidence linking education and engagement. Education is a potent predictor of virtually every type of civic and social engagement (Campbell, 2006). Higher education levels are also associated with lower rates of crime and social disorder (Toner, 2013).

<sup>&</sup>lt;sup>3</sup> First schools were probably established in ancient Egypt around 2000 BC. Early education systems were also in place during Xia dynasty in China. It is claimed that Ashurbanipal, king of the Neo-Assyrian Empire, was educated in mathematics, reading and writing as well as horsemanship, hunting, soldierliness, and craftsmanship. In ancient India, Gurukula system organised Hindu residential schools where children learned from the Guru, who was also their spiritual guide. In ancient Greece, children were sent to different schools for at least a few years. While middle classes sent them to learn a trade by apprenticeships, in Sparta education was designed to train warriors, and in Athens wealthiest youngsters could attend institutions like Plato's Academy or Aristotle's Lyceum, a sort of precedent of higher education, to learn from rhetoric to mathematics, politics, logic, philosophy or science.

were not able to anticipate, identify and respond to changes and new challenges<sup>4</sup>.

To a great extent, it is not so different in today's world. Yet, it is in terms of the scale, pace and scope of change, and the exponential diversity and complexity of competences required to cope with rapid changing needs and anticipate future ones means the skills acquired from past generations may no longer relevant.

Technology is transforming most economic activities and occupations, sometimes gradually, but on occasion resulting in game-changing disruptions which can make jobs and businesses obsolete almost overnight, at the time new and very different ones are created. Think of Kodak or Blockbuster and, on the other side, Alphabet or Amazon. And technology has not been the only mega-driver of change. The expanded possibilities to cooperate in globalised and inter-connected economies have split, diversified and redistributed activities worldwide. Policy change required by the transition towards a neutral carbon economy is also triggering the restructuring of numerous sectors and businesses. Demographic trends, including very different fertility rates sometimes in not-so-distant regions, create different needs in older or younger societies, impact migration, and lead to far more diverse and changing workforces available. Not to mention recent disruptions, such as the Covid-19 pandemic, which has accelerated and shaped structural trends like telework or e-commerce, or more recent geopolitical crisis and security conflicts impacting energy supply, inflation and political strategies, which have shaken markets around the globe.

Rapid transformations increase the challenges for education and training institutions to meet the learning requirements of shifting social and labour market needs. Skill mismatches are a frequent problem. 40 per cent of employers responding to a recent joint International Labour Organization (ILO) and IOE survey (ILO AND IOE, 2019) noted skills shortages as the main reason for entry level vacancies, and 60 per cent stated that graduates were not adequately prepared. Mismatches can be due to the ineffectiveness of the education and training policies, and to imperfections and frictions in the labour markets. They negatively impact unemployment, wages, job and life satisfaction, and productivity<sup>5</sup>. They are a barrier to identifying and hiring needed talent, frustrating individuals and blocking enterprises 'prospects.

In this context, adaptability is the key word. It requires all citizens to be equipped with basic and transversal skills through a sound initial education and be involved in lifelong learning over their professional life to remain employable. Education and training systems need to adjust rapidly to changing needs. And this is to a certain extent, a moving target; even if current needs are identified, it will still be uncertain

<sup>&</sup>lt;sup>4</sup> In Ancient times, Mesopotiamia or the Roman empire can come to mind, unable to adapt the administration of huge empires and anticipate external threats. In the 16th and 17th centuries Thailand, open to foreign traders, was richer than many European nations, but trade declined. In modern times, many countries missed to join in time the industrial revolution. By the turn of 18th century, India was close to 25 per cent of global GDP, ahead of China and a leading manufacturer, but competition of industrialised Europe and colonial administration impacted on its position. In early 20th Century, Argentina was the world's 10th wealthiest economy per capita, and up until 1962 was above countries like Italy, Austria, Japan and Spain, but highly dependent on Agriculture and with growing internal administration problems. By 1970 Venezuela was ahead of Spain or Israel but relying basically on oil.

<sup>&</sup>lt;sup>5</sup> Cedefop estimates for the European Union that the existing workforce skills fall about one fifth short of what is needed for workers to carry out their jobs at their highest productivity level (CEDEFOP, 2018).

what future jobs will be and what skills they will demand. Education and training institutions can struggle to keep up. By the time they identify emerging needs and adapt curricula, learning needs have shifted again. This also challenges policymakers and requires them to reflect on education and training from a different perspective, with more emphasis on the skills people need to be adaptable and capable of contributing to current and emerging labour markets.

Against this background, Governments, Employers and Workers have highlighted, as tripartite constituents of the ILO, the renewed importance of skills development and lifelong learning as key enablers of human development, full, productive and freely chosen employment and decent work, productivity improvement and sustainable development. This is reflected in the adopted 2021 International Labour Conference Resolution concerning Skills and Lifelong Learning (ILO, 2021), which invited the ILO Governing Body to instruct the Director General to develop a strategy and allocate resources within the existing and forthcoming programmes and budgets and mobilisation of extrabudgetary resources.

In this report, we intend to briefly identify the most relevant issues and learning needs, and potential solutions that can contribute to successful education and training policies in this complex environment. In an Annex, we also briefly analyse the situation in several countries in very different situations. Countries initially included are Argentina, India, Italy and South Africa, but others can be added in the second phase of this project.

## What is stopping us: Common issues and barriers

Problems with education and training policies can be related to different factors. Some are linked to labour market needs, many to the education system itself, and a few can be attributed to various other policies. We summarise the most common problems and barriers in this section.

### Issues related to the labour market

Skills are at the centre of the approach to the future of work as stated in the ILO Centenary Declaration. Skills development and lifelong learning are fundamental enablers of decent work. They provide access to the labour markets, avoid poverty and exclusion, and allow to adapt to the changing world of work (ILO, 2021).

The education level is a key factor to consider when it comes to the enduring issue of informality. Globally, the higher the education level, the lower the rates of informality. And the informal economy, with over 60 per cent of the world's employed population estimated to be in informal employment, is a critical employment issue at the global level (ILO, 2018).

Higher unemployment can also be a consequence of education systems failing to equip people with the skills demanded in the labour market, particularly in countries where high unemployment persists despite a substantial number of vacancies remaining unfilled. In OECD countries, 58 per cent of 25–34-year-old adults who have not completed upper secondary education are employed compared to 78 per cent among those with upper secondary and 85 per cent with tertiary. Earnings are also significantly lower; 27 per cent of adults with below upper secondary earn only at or below half the median earnings of all workers (OECD, 2021).

Youth unemployment rate can also be a sign of ineffective education policies. In 2020, the unemployment rate of young adults without upper secondary education was almost double that of those with higher qualifications (OECD, 2021). A higher than the general unemployment rate is normal due to the additional time it takes new entrants to find first matches in the labour market. However, if youth unemployment is excessively high, compared to adults, it can reveal that initial education is not providing the skills demanded. In a McKinsey survey in nine countries, 40 per cent of employers mentioned lack of skills as the main reason for entry-level job vacancies and 60 per cent said that new graduates were not adequately prepared (Mourshed, Farrell, & Barton, 2013). This is consistent with the more recent findings of the IOE-ILO survey mentioned above (ILO AND IOE, 2019).

The rate of young people not in employment, education and training (NEETs) can be an even more concerning indicator. Leaving aside the possible influence of the informal economy, a high NEETs rate shows difficulties in finding a job and a lack of incentives and opportunities to engage in education or lifelong learning as a path to the labour market.

Yet, the most common education-related problem in labour markets is skill imbalances. Different types of mismatches can be identified.

Vertical mismatches happen when people are under or over-skilled for available jobs. Overqualification reveals skills underutilisation and wasted efforts of education and training institutions. For example, 4 in 10 adult employees in the EU feel that their skills are underutilised (CEDEFOP, 2018). Overqualification brings frustration, lack of motivation, migration and brain drain. In the 40 countries covered by the OECD skills for jobs database, over 7 out of 10 graduates in Humanities and Art are employed in a job unrelated to their studies. Underqualification, on the other hand, reveals a failure of education and training policies and institutions in engaging people in education and training at the level demanded by the labour market. It increases workers' stress, risks business' performance and hinders economic growth prospects. On average, across OECD skills for jobs database countries, some 35 per cent of workers are mismatched, with 17 per cent overqualified and 19 per cent underqualified (OECD, 2018)<sup>6</sup>.

<sup>&</sup>lt;sup>4</sup> OECD Skills for jobs highlights 2018. S4J database provides information on shortages and surpluses of a wide range of dimensions for 40 countries among OECD and emerging economies.

#### **Qualifications Mismatch**



Graph based on OECD skills for jobs database, data 2016 (OECD, n.d.)

According to the ILO, while underqualification is a much bigger issue in lowand middle-income countries, especially in sub-Saharan Africa and South Asia, overqualification is also a problem for them. The share of mismatches ranges from 30 to almost 90 per cent, and the incidence is higher in countries with lower levels of education and informal economy (ILO, 2021).

Horizontal mismatches refer to shortages or surpluses in specific sectors and occupations. For instance, shortage of STEM skills and qualifications (science, technology, engineering and math) is common in developed economies. The health sector, particularly in times of pandemic, can be another example. Horizontal mismatches can reveal ineffective guidance services and poor identification and anticipation of skill needs. Taking the health professions example, considering that training a specialised doctor takes an average of 9 or 10 years, the education system simply cannot afford to wait for a shortage to happen to extend medicine education posts and promote health studies at lower education levels.

Despite the many analyses and projections about jobs replaceable by technology, labour shortages keep being mentioned as a growing issue. According to Randstad (Ebbers, 2022), in early 2022 there were 40000 open vacancies in Australia, and nearly 11 million in the USA at the time they had 6.5 million people listed as unemployed. In the European Union (EU), 3 per cent of the jobs, are vacant, doubling the rate in 2011 (Eurostat, 2022). A Korn Ferry study (Korn Ferry, 2018)<sup>7</sup> for 20 major economies projected a global talent shortage, by 2030, of 85 million jobs with an estimated financial impact up to \$8.452 trillion in unrealized annual revenue, equivalent to the combined GDP of Germany and Japan. Education, however, cannot be fully blamed. Much of this shortage in big economies like Japan, the US, the European Union (EU),

<sup>&</sup>lt;sup>7</sup> In this Korn Ferry report of their Future of work series, talent crunch is estimated by modelling the gap between future labour supply and demand in in 20 major economies. The model focuses on three knowledge-intensive sectors within each market that act as critical drivers of global economic growth: financial and business services; technology, media and telecommunications, and manufacturing, and examines the remainder of each economy. Using level of education as a commonly accepted proxy for skills, and considering forecast productivity gains, the study uses available data to forecast shortages for highly skilled, mid-skilled, and low-skilled workers.

China and Russia would be based on demographic decline. On the oversupply side, India could have a surplus of over 1 million highly skilled tech workers.



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In the EU, the unmet demand for labour reached a job vacancy rate of 2.3 per cent in 2019, the highest value since 2006 (European Commission, 2019) (Eurofound, 2021). A report by the European Labour Authority (McGrath, 2021) identifies 28 occupations, employing 14 per cent of the EU workforce in 2020, as shortages, including healthcare and STEM occupations. On the other hand, 24 occupations, employing 17 per cent of the EU workforce in 2020, were classified as surpluses. Examples include clerical occupations, hospitality and personal services. The specific shortages and surpluses are not necessarily the same across countries and regions, they depend on the specific demand of the economy and the supply provided by education and training systems. For example, countries with higher productivity levels tend to face more shortages in high-skilled occupations.

Skill shortages in a particular area can occur when there is a surplus of the same skills in a different zone. Then, we talk about geographical mismatches. This is normal to a certain degree as nothing is wrong, on the contrary, with labour mobility. The problem starts when language, housing, transport, working conditions or migration barriers don't facilitate labour and talent mobility. Also, when imbalances and migration flows result in a broader brain drain where talent is not just underutilised but more systematically expelled.

We can also distinguish between mismatches at the macro or micro level, for example, the aggregate economy or a particular person. The latter, mismatch at work, is a frequent problem. Even if a person has employable skills, he or she can be occupying a job that is not appropriately skilled. European companies consider that one out of four workers do not have the skills required for the job<sup>8</sup>. And the imbalance is even higher according to workers' perception. Only 55 per cent of workers in the EU stated that their skills matched well those required in the job<sup>9</sup>.

<sup>&</sup>lt;sup>8</sup> Data from the European Company Survey (ECS) 2019. ECS is regularly conducted by Eurofound

<sup>&</sup>lt;sup>9</sup> Data from the European Working Conditions Survey (EWCS) 2015. EWCS is a survey regularly conducted by Eurofound.

Overall, skill mismatches negatively impact individuals, companies and the aggregate economy. Workers have lower job satisfaction (Bédewé & Giret, 2011) and face a substantial wage penalty (Quintini , 2011). They slow down the adoption of technologies, delay production, and reduce productivity and earning potential. Labour turnover is higher, as unsatisfied workers search for a better match. In sum, skill imbalances block progress and individual and enterprise prospects. (OECD,2018)

There is evidence about the relationship between ineffective education and training policies and these labour market mismatches. For example, comparing countries' imbalances and adults' skill proficiency, as measured in PIACC, it appears that quality education systems go together with more efficient labour markets in matching skill supply to firms (OECD, 2018). In some of the countries analysed in the Annex, qualifications supplied by the education system do not match the employers' demand, as happens with university graduates in Argentina or technical vocational education and training (TVET) qualifications in South Africa.

However, skill imbalances are also related to imperfections and frictions in the labour markets. In some countries, there can be issues with incentives to work, employment protection or barriers to mobility. Transparency of skills demand and supply is often suboptimal, employment services can be inefficient in their matching role, and employers and job seekers can avoid exploring in-depth possible options as job matching becomes a timely and costly task for both. That means that tackling imbalances in labour market requires a coordination of education and training systems, employment and other policies, like migration, mobility or even housing and transport.

Moreover, education and training policies are not alone in trying to identify and develop the knowledge and skills required. In fact, a much broader coordination would be required between education and policies including research, digital agendas, transition to a low carbon economy, industrial change, health and social policies, to mention a few. However, it is relatively rare to find a coherent and more holistic integral strategy in these fields.

### Common issues in education systems

Moving to issues closer to the education system itself, this report highlights some basic and classic problems, as well as issues related to outdated learning content and methods, technology and evaluation.

### The basics: Access and Investment

For most of history, most people were excluded from education. Over time, access spread from the initial privilege of a few advantaged to broader parts of society, and only in contemporary times, it moved towards universal compulsory systems, confirming education as a basic human right and civic duty.

Access, however, can still be a problem. Even in the wealthiest countries, small vulnerable groups can be excluded from different reasons. And even when the highest levels of participation in compulsory education are achieved, many groups drop out as early as possible and do not participate any further after the obligatory education age, or they do not complete their studies, due to economic or social reasons. Take, for example, the Roma population in Europe, some indigenous groups in the Americas,

those living in rural less-populated areas or in deprived zones impoverished by industrial restructuring, youngsters helping families in informal economy, or even middle-class children that cannot afford or are afraid of taking too high debts for their education. Participation of children with disadvantaged background in early education and care is even lower, despite the strong evidence of the positive impact or this participation precisely for these groups. Students' poverty is a related issue, dissuading many from starting early education, or continuing their studies after compulsory education when they cannot afford fees or a laptop and internet connection. Depending on each country's size, diversity and wealth, these problems can be prevalent, but in all cases should remain a basic priority requiring targeted policies. The EU education and training strategy, for example, sets targets for early education and care and share of early dropouts, and monitors these indicators. Problems of access to initial education and, at later stages, to lifelong learning are a basic difficulty that contributes to poorer integration into the formal economy and segmentation of labour markets.

Sufficient investment in education is another indispensable foundation. In general, governments are aware of the relevance and importance of education and make investment efforts. But, as in many other policy areas, financial needs grow, and budgets never sufficient. Just think about the resources needed to attract, retain and provide ongoing training of teachers; to adopt digital tools and infrastructure; to increase capacity in countries with a growing population; or to adopt up-to-date technical equipment in vocational schools and universities. According to the World Bank, with data from UNESCO (World Bank, s.f.), over 14 per cent of total government expenditure is dedicated to education worldwide, and expenditure in education is around 3.7 per cent of GDP. However, UNESCO Education 2030 Framework for Action proposed two more ambitious benchmarks: allocate at least 4 per cent to 6 per cent of GDP to education. In any case, in education, as in many other areas, above a certain threshold, the main point is not how big the budget is, but how it is invested.

The following graph shows the share of education expenditure in different parts of the globe. It must be noted that wealthiest countries have much bigger public budgets, so a lower share of their education expenditure and a lower percentages of their GDP), can be still a much higher investment per student in absolute figures.



#### Education spending as a share of total government expenditure, 2021

Total general government expenditure on education, expressed as a percentage of total general government expenditure on all sectors.



Source: (Our world in data, s.f.)

Nonetheless, as first basic priorities, participation and investment are only preconditions. In fact, the gradual extension of compulsory education started in the 19th century, and, as it advanced, there has been a clear shift from quantitative objectives (getting more individuals enrolled during more academic years) to qualitative ones (achieving the learning objectives).

Similarly, national wealth predicts students' performance only below a certain threshold. Once a reasonable level of investment is achieved, just additional money is insufficient to improve learning outcomes. The strongest performers in the OECD programme of international students' assessment (PISA) are not the wealthiest countries nor those who allocate more money to education. PISA 2009 results suggested that after a threshold of some USD 35000 of cumulative expenditure per student from the age of 6 to the age of 15, expenditure was not related to performance. Moreover, top performers in countries like New Zealand spent below average (OECD, 2012). This figure would be equivalent to close to USD 50000 in 2022. The amount doesn't seem too high, considering that it is about half of the OECD average of cumulative expenditure in 2018<sup>10</sup>, 102200 per student (OECD, 2021), but this depends on the wealth of the country and the capacity of its public budget. Among highincome economies, the amount spent on education is less important to obtain good outcomes than how those resources are used. Here is where regular assessments and evaluations can help to identify where resources are most needed to reshape and target budgets to ensure better outcomes. Among low-income countries, efforts towards a minimum investment are fundamental, but obviously, they can also benefit from well-designed budgeting.

<sup>&</sup>lt;sup>10</sup>Cumulative expenditure on educational institutions per full-time equivalent student between the age of 5 and 15.

## The classics: Segmentation, class size or teachers' recognition

A number of other education problems remain entrenched but vary in relevance. This publication examines three of them.

First, segmentation of education and training systems happens when there is a clear divide between first- and second-class education centres, which have disparate learning outcomes, distinct student backgrounds, and low student mobility between them. Segmentation is related to access, and it can result in a new form of educational exclusion with lower segment schools, educating a larger proportion of disadvantaged students, who have lower academic performance and learning challenges, impacting the reputation and attractiveness to better performing students.. In Latin America, the expansion of secondary education has been accompanied by segmentation and social exclusion processes (CEPAL, 2021). In South Africa, to take one example from the Annex of this report, pockets of high-quality education coexist with very poor outcomes in most schools. The most typical division happens between private and public education centres. This division, however, does not automatically mean segmentation, as shown in countries where there are not big differences in students' performance or in too segregated access to different schools. Sometimes other factors, like the school location, teachers' availability and requirements, students' origin, insufficient funding or weak quality standards can result in bigger divides.

A segmented education system can easily contribute to segmented labour markets and more unequal societies. Breaking access barriers and ensuring good standards in the whole system, private and public, can tackle segmentation in the education system.

Second, the issue of student-teacher ratio and class size. Ratios provide information on the level of teaching resources, whereas class sizes measure the average number of students grouped in classrooms. Main underlying issue is that many students per teacher, as well as too big a class size, do not allow sufficient time and interaction, particularly for specific individual needs and diverse characteristics of learners. These indicators have received a lot of attention. However, there is no standard number for an ideal ratio, and overall evidence of the effect of class size on student performance is mixed (Fredriksson, Öckert, & Oosterbeek, 2013). Class size and ratios depend on issues like budgeting and demographic pressure. Smaller class sizes are required when the student groups are more heterogeneous or include disadvantaged groups, particularly, at pre-school and primary level, when learner's autonomy is lower. However, larger schools and bigger class-size can allow economies of scale that may provide broader opportunities to students, particularly in countries with demographic pressure. On average, in OECD countries, there are almost 15 students for every teacher at the primary level, and an average school class of 21 students in primary education and 23 students in lower secondary education. There is an important diversity between countries, ranging in the OECD countries from a class size of 15 in Luxemburg to 29 in Chile (OECD, 2021). The figure can be significantly higher in non-OECD countries, particularly those with demographic pressures like India, Brazil or many African countries - one example, South Africa, is provided in the Annex.

Third, teachers are a key element of the system. Attracting and retaining motivated

skilled educators, as well as keeping them updated, is essential for successful education policies. Countries with higher social recognition of teachers usually have better education results. In many countries lower recognition and working conditions lead to low interest in the teaching profession by talented professionals, and even to teachers' shortages, particularly in STEM. Moreover, training to tackle new curricula and pedagogies is underfunded in many countries, even wealthy ones. The stronger performers in PISA among high-income countries tend to invest more in teachers and, in case of budget trade-off, prioritise teachers to small class-size (OECD, 2012). Teacher wages can be a proxy for issues like job satisfaction, motivation, desirability of profession and continuation of teaching career. There is some evidence that the level of teachers' salaries has a significant positive effect on education outcomes (Arain, Jafri, & Ali, 2014).<sup>11</sup> However, it is important not to reduce teachers' recognition to salaries. The value given to schools and teachers can be also improved, for example, by facilitating teaching career and mobility, increasing their public visibility or investing in their training.

## Obsolescence: Outdated pedagogies and curricula

Traditional education systems focus mainly on subject contents rather than in understanding what was behind them. Subjects are taught mainly through a "lecture model", where the teacher presents the content that is later studied (memorised) by students, and about which they will be tested. This was an effective approach in a context where the best source of knowledge (and frequently the only available) was the teacher, and the knowledge and skill demands were relatively stable, a situation which does not exist in the current world of work.

In a changing environment, education institutions are usually too slow in adapting the content to the most relevant knowledge needed to meet the demands of society and labour markets. For example, in a UK survey (RSC, 2021)<sup>12</sup> chemistry teachers ranked carbon among the most important chemistry topics to be taught in general education, obsolete curriculum still put much more emphasis on petrochemicals, neglecting the growing importance of chemistry for developing the materials and technology necessary to tackle climate change. Something similar may happen in other traditional subjects, like mathematics. Specialised technical knowledge and skills learned in vocational education and training and in university can become more quickly obsolete, particularly in areas most affected by rapidly evolving technologies, equipment, and scientifical knowledge. Obsolescence (outdated methodologies and curricula) is more frequent when there are not effective skills needs anticipation systems in place to inform national and sectoral skill strategies or competency standards (ILO and OECD, 2018). While there are good practices of building and keeping systematically updated knowledge databases, for example, on occupational

<sup>&</sup>lt;sup>11</sup>Other articles refer to same issue, based on regional wage levels, like in the case of Russia (Lazareva & Zakharov, 2020).

<sup>&</sup>lt;sup>12</sup>Survey of educators, students, and practicing chemists across the UK published by the Royal Society of Chemistry (RSC)report green shoots – a sustainable chemistry curriculum for a sustainable future.

<sup>&</sup>lt;sup>13</sup>ESCO is a European Union classification of Skills, Competences, Qualifications and Occupations. The ESCO classification identifies and categorises professional occupations and skills, competences and qualifications relevant for the EU labour market and education and training

O\*NET is a tool developed under the sponsorship of the U.S. Department of Labor/Employment and Training Administration. It is a primary source of occupational information, containing hundreds of standardized and occupation-specific descriptors, for use by job seekers, workforce development and HR professionals, students, developers, researchers, etc.

information like ESCO and ONET<sup>13</sup>, keeping them current at market speed remains challenging. Outdated curricula neglect to teach relevant courses required by labour markets, and also fail to interest learners and discourages them to participate in education and training.

Regarding pedagogical methodologies, from chemistry to language and history, memorisation is still the foundation of much education. Memory is not a bad thing. Learning relevant factual knowledge through memorisation is indispensable. Sometimes, even rote memorisation could be needed to automate tasks that can facilitate more complex learning. Take the role of multiplication tables to decrease working memory load and facilitate easier learning of advanced math. The question is, therefore, not in favour or against memory, but about how and what needs to be memorised in a world with massive amount of knowledge available at a smartphone click and where there is often no "right answer". The usefulness of learning dates and names of the Napoleonic wars or lists of kings of different dynasties can be reasonably questioned, but not the processes and causes leading to war or the fall of countries. Understanding leads to memories being formed, and rote memorised knowledge is far less useful than understood knowledge. In the digital age, a good part of our knowledge repository can be "outsourced" from our brain to other, one-click distant sources. But this requires learning probably more difficult skills to be able to find and discern reliable information and think about it critically and creatively.

On the other hand, lecture teaching model leaves little room to active participation and can be a waste of time and effort. Most students, according to experts (Bloom, 1987; Fletcher, 1990; Aktaruzzaman, Rashedul Huq Shamim, & Che Kum Clement, 2011), retain about 20 per cent of what they hear, 40 per cent of what they see and hear and 75 per cent of what they see and interact. Since the 20th century, education is moving more and more in the direction of exploiting natural human curiosity and adopting more participatory teaching strategies and learning by doing.

## The invisible wall between the academic and business worlds

Despite the expectation that education prepares children to eventually integrate into the labour market and the existence of good examples of cooperation with businesses, the disconnect between education and training institutions and the world of work is still a challenge and can be significantly improved. In many countries, most teachers and school leaders are public employees with limited contact with businesses, particularly in general education. This comes often with little understanding, even sometimes a negative view, of this world. Even the concept of "employability" may seem foreign to the academic community. Similarly, employers and managers may view education as an endogamic and disconnected world, unable to deliver the employable skills needed in what they see as "the real world", so they can disengage from these public policies.

This insufficient understanding can be overcome when governance schemes, at school, local, or system level, provide regular and expanded participation of employers. Many good examples of cooperation can be found in vocational education and training (VET), and universities. The Italian Instituti Tecnici Superiori (ITS, tertiary level VET), mentioned in the Annex, can be considered a good practice, promoting shared commitment and ownership by education authorities and employers. However, the disconnect between academia and work can persist even at VET and university levels.

Insufficient cooperation can be seen, for example, in how the learning offer is reviewed and developed. Identification and anticipation of labour market needs is frequently part of the procedures, but employers' involvement is often limited to an initial consultation or survey, without further follow up. This is visible in all countries analysed in the Annex. Even in sectors where labour market mismatches are easily predicted by companies, there is not always a permanent system in place ensuring regular contact with employers.

Work placements are another example. They help to develop work ethics and noncognitive skills valued in the labour market. As a matter of fact, work experience during the initial education stage is associated with better transitions to the labour market and youth employment rate, even when it is not related to the studies (Eurofound, 2014). Although working practices have been introduced in general education in some countries (e.g. Argentina, Ireland), it is not widespread. At the vocational and university level, these placements are more frequent. Systems combining education and work in a more systemic way, dual-system type, can be considered best practices. At the international level, the Global Apprenticeship Network (GAN)<sup>14</sup> promotes apprenticeships and work-based learning. These schemes are less successful when there is not a fluid communication between learning centres and businesses, for example to find placements or to coordinate tutors in the centre and the workplace.

Sharing equipment and infrastructures for training and production purposes can be found in VET, particularly in apprenticeships, and in universities, for example in engineering. However, these practices are not extended throughout the education system, despite its obvious win-win value for employers and training institutions.

On the other hand, lifelong learning, after initial education, is a much more natural area for cooperation, in which education and training institutions, employers and individuals have all a responsibility. There are good examples of public policies and social partner initiatives providing for institutional architecture and effective incentives for employers and workers to boost lifelong learning. On a similar note, job matching, and migration are also policy areas where better cooperation exists. For example, cooperation between social partners and employment services is relatively common. However, this cooperation is rarely coordinated across different policy areas.

## Struggling with technology

Technology is transforming almost everything, education too. As in any other field, this opens great opportunities, but it can also create new, and sometimes uncharted, challenges. Take remote learning during COVID 19 pandemic lock downs. Millions of students around the world could continue, despite many difficulties, with their learning activities, thanks to previous decades tech developments. But it didn't work for all. Many education centres and families didn't have the equipment or adequate

<sup>&</sup>lt;sup>11</sup>GAN Global was established by the ILO, OECD, IOE and BIAC, as part of the response to the 2009 economic crash. The organisation was originally tasked with the promotion of apprenticeship, expanded later to all forms of work-based learning, and is a good example of private and public partnership to promote work-based learning.

spaces, and many teachers and students lacked the necessary digital skills. In any case, educational technology offers a vast potential to engage students in more active and effective learning. It can facilitate group collaboration and provide immediate access to up-to-date resources and instant feedback and guidance in learning assignments. Online surveys, interactive case studies or a massive array of audio-visuals have multiplied the diversity of resources available, which can be selected and adjusted to different learning styles, needs or situations.

Technology tools are not in themselves the solution. It is not about filling schools with high-tech equipment or follow education technology companies without a proper assessment but to use technology to rethink and design more dynamic learning activities.

Technology in the classroom also present challenges. For instance, it can be a threat to student privacy and security. It can also be a distraction. Students can be checking social media, playing games, or shopping during lessons. Allowing tablets, laptops and smartphones in the classroom can seem a foolish debate for 21st century, but educators and school managers need to manage their use effectively, making the best of their educational potential while avoiding undesired effects.

Cost is an additional challenge. Tablets, smartphones, laptops, interactive projectors and smartboards, or smart tables are expensive, and finance differences between countries, education centres or families, can potentially widen the digital divide in society. It is true that, once a minimum investment is in place, education centres can adjust the level of technology in relation to the budget.

However, beyond funding, lack of digital education skills on the part of teachers and trainers can constitute a critical barrier to make the most of available technologies. And, once teachers are upskilled, lack of online learning resources provided by the education system, can be another barrier, as teachers must then create their own learning resources and reinvent the wheel to maximise student learning experience.

Finally, the best education technology can be a wasted effort if the digital environment of the country, i.e., infrastructure investments, does not allow for an effective use of skills acquired through education.

## Measuring policy results. Insufficient or poorly designed evaluations.

It is difficult to improve what you do not assess and measure. Education and training policies are not an exception. Many countries have been evaluating them to monitor and improve the quality of educational services. However, in some cases, policy makers, education centres or teachers and trainers are reluctant to be evaluated.

New Public Management stand for a shift from steering by inputs to steering by outputs. Assessing education through the performance of students has particularly developed in the recent years, not the least since international assessments like PISA were established. National standardised assessments of students are a common tool, and use of other international assessment like TIMSS are expanding. Some examples can be

found in countries analysed in the Annex. Standard tests can incentivise students' effort (Bishop, 2006; Fuchs & Wößmann, 2007), allow teachers and school leaders to compare education objectives against results achieved and performance of their students to others in the school system, so they can adjust their learning approach accordingly. They can be used to trigger investment and refine education policies to focus on education outcomes. Six in ten students attend schools where standardised tests are used. Students' performance and results can give some light of the quality of schools and teachers. This can be used to benchmark the quality of education systems and centres, help to set targets and design education reforms and strategies. Schools are usually evaluated on a cyclical basis, most commonly every three to five years (OECD, 2016; OECD, 2013). Results can be used for accountability purposes, for example, through national assessment data, ratings and public reports, and to identify and support improvements by providing assistance and feedback to schools. Beyond the evaluation function, national tests are most frequently used for certification, graduation or entry into a higher level, like testing for university entrance, as well as for access to student grants.

It is important, however, to be aware of the usefulness, limitations and risks of external evaluations when they aim to serve to a diagnosis of educational systems, identifying their strengths and weaknesses. Information collected, for example, may reflect only a part of learning outcomes. Assessment methods also influence the learning approach. Depending on how tests are designed, they can shift learning strategies towards memorising, understanding, or applying knowledge. Test design is a complex task, and if not done correctly can undermine evaluation. Methodological bias is another risk, for instance when sociocultural differences are ignored. Moreover, national or international assessments which bring relevant reputational or financial consequences can provoke sorting out disadvantaged students and learning strategies more centred in teaching for the test than in real learning improvement. On the other hand, interpretation must be done carefully. Controlling results for student's background, for example, is essential, as this is the most influential factor for educational outcomes. Evaluation results presented out of context can unjustly penalise education centres with students with less advantaged backgrounds, deepening segmentation of the school system.

### What to teach and learn?

Let's imagine the best-case scenario where we have near full participation, a reasonable budget, the right technology in place and good social recognition of teachers, who are also well trained in participative and digital methodologies. However, the big questions about what needs to be learned in the current climate have not yet been fully answered. What kind of knowledge and skills are needed, and how they are identified and learned?

While one cannot be too specific for a moving target, a number of things can be stated keeping in mind the need to balance the broad range of objectives of education, not the least the skills needed to build a strong adaptability to changing environments.

Let's start with knowledge and cognitive skills, which usually receive much of the attention in education systems. Regarding knowledge, learners need to be equipped with a sufficient foundation that enables them to understand, work and behave

effectively in today's world. Disciplines content must be revisited constantly to identify the indispensable base knowledge for learners to be aware of what they know and what they can ignore, to know when and where to search and find more reliable information, and to be able to understand and use it to meet new problems. Innovations and most recent findings need to be regularly monitored to check what and when new content needs to be integrated in this knowledge base.

Among cognitive skills, information processing skills must be guaranteed by compulsory education. International studies like OECD's PISA, have succeeded in raising the spotlight on basic information processing skills like reading, maths and science, looking at them as tools to meet real-life challenges. These skills cannot be understood anymore independently of the digital environment. In this context, information processing requires also digital literacy to effectively access and use online information, and the skills to discern relevance and prioritise information, distinguish between facts and opinions, and between biased and robust information and sources.

A basic digital literacy also includes the skills to communicate effectively in a remote context, use word processors for written communication and spreadsheets for different calculations. According to some authors, a base of coding is also fundamental to develop the computational thinking necessary to understand and function in a world increasingly managed by artificial intelligence, algorithms and automated systems, as well as to survive digital security challenges.

Other core or transversal cognitive skills are key to adjusting to diverse and changing contexts. These include analytical, critical and creative thinking, as well as problem-solving and decision-making, among others. Some authors talk about metacognitive skills when they imply a higher awareness and ability to use effective strategies for learning or problem-solving. Among them, self-reflection and the general ability (or group of abilities) of "learning to learn" are fundamental for adaptability.

Specialised technical skills build on the general knowledge base and are associated to specific tasks, functions or jobs. They are a good part of the learning objectives in vocational and tertiary education, but they can easily become obsolete. In fact, lifelong learning is, to a large extent, about technical skills update. Innovation in different sectors and, more transversally, the digital and carbon-neutral transitions imply relevant transformations of technical skills. Furthermore, they can also lead to more substantial restructuring that makes certain jobs and sectors irreversibly redundant. This requires building skills pathways between jobs and sectors for those requiring to be re-skilled.

On the other hand, while most focus of education is on cognitive skills, non-cognitive skills are equally relevant. They range from personality traits, like extraversion, agreeability, openness to experience, conscientiousness stability, to emotional skills like empathy or conflict resolution, and social skills like communication, collaboration, negotiation and teamworking. Self-control perception is key for learners. Some authors have highlighted the importance of developing a "growth mindset", i.e. believing that one's own talents can be developed, through hard work, good strategies, and input from others. This positive attitude helps one to adapt faster and become more resilient to disruptions, changing environment or new ways of working and learning. Those who have developed this mindset tend to achieve more than those who think their talents

are innate (Dweck, January 2016). In this context, entrepreneurship skills have gained attention. They are a combination of cognitive skills, like planning and organising or decision making, with non-cognitive ones like initiative, leadership, persistence and resilience, typical of a growth mindset. Usefulness of these skills is not restricted to becoming an entrepreneur, they are highly employable in a substantial number of tasks and jobs, as for broader life and organisational activities. Non cognitive skills are learned from the cradle and to a large extent outside educational institutions, but this shouldn't justify lack of attention by education and care has demonstrated a long-term positive impact, allowing an early acquisition of non-cognitive skills that enable a better engagement and integration at later stages.

## Modernising and reforming education. Some solutions

A good part of the issues and needs mentioned above are relatively well-known, and education reform is not new. Many policy measures have been taken, for example, to extend education and training opportunities, update education and training content and promote more experiential learning.

Based on best practices, research evidence, and national and international evaluations, there are several key messages, grouped in five areas, where further improvements can be made to today's education and training systems, especially to contribute to well-functioning labour markets and sustainable enterprises.

While realising many of these recommendations require government action, education and lifelong learning is a shared responsibility, and employers and individuals have their own distinct responsibility in implementing these solutions.

#### A Be strategic. Build a sound strategy, outcomeoriented, monitored and evaluated

**1.** Design a long-term, comprehensive and concerted education and training strategy. Different education levels, formal and non-formal education and training, and lifelong learning are interdependent pieces of the ecosystem of learning opportunities. Implementing any reform takes time, resources, and persistence to be effective. Avoid scattered policy changes with limited impact. To ensure a lasting perspective for education and training reform, work in a sound longer term planning, based on shared diagnosis, broad consensus and involvement of policy makers and stakeholders, including employers, on the outcomes to be achieved. Include milestones for a gradual realistic implementation of policy measures in that planning.

**2. Give a lifelong approach to the strategy.** Consider from pre-school, where best returns from investment are achieved, particularly for children with more disadvantaged background. Ensure that compulsory education equips all with sound foundation skills that enable them to learn further throughout

their studies and professional life. Facilitate a good participation in employable post-compulsory education. Ensure broad lifelong learning opportunities for all throughout life, adapted to different circumstances and including the training and development provided by employers.

3. Set learning objectives thinking on the knowledge, skills and attitudes needed for a better life and work, and coordinate with a broader range of policies which can help to identify and make the best of them. Regarding labour markets functioning, coordinate first with employment policies and services, including on labour market intelligence, lifelong guidance mechanisms, and improving transparency of skills and qualifications and matching mechanisms to ease labour market frictions. Foster HR management policies that facilitate employers' efforts in identifying, utilising and further developing talent. Beyond employment, coordinate with other policies like digitalisation agenda, industrial policies, particularly those related to the digital and low carbon transitions, migration and mobility, social inclusion and active citizenship, to mention the most obvious.

Set targets and include well-designed monitoring and evaluation systems in the strategy. Use evaluations to shift focus on resources and curriculum towards learning outcomes, with more autonomy and accountability of learning centres. Establish quality standards for educational institutions and common core standards to be achieved by all students. Incorporate national and international assessments, including standard tests, meticulously designed. Set evaluation frameworks which stress the quality of school-level processes and an inclusive vision where all students, regardless of ability or background, are supported. Control for student's background to interpret evaluation results. Extend assessment beyond students to teachers and school managers. Monitor and assess education trajectories and labour market integration and progression of graduates to check the usefulness of learning outcomes. Ensure that evaluation reports provide learning centres, principals, teachers and trainers with clear and specific feedback on their strengths and what they can do to improve. Provide support to and ensure follow up of implementation of recommendations. Use assessments for accountability and improvement purposes carefully, for example, creating a healthy competition between students, schools and systems by sharing some information; at the same time that distorting practices, such as sorting out students or teaching for the test, are prevented, controlled and avoided.

**5.** Reinforce governance with the permanent participation of stakeholders, including social partners, at the local, regional, sectoral and national levels. Education is a collective undertaking where the involvement of all key players is needed. Do not limit consultation; integrate businesses operating at local, regional and sectoral levels in taking ownership and responsibilities in the education and training strategies.

Be aware of the necessary base. Guarantee sound foundations for initial education

**6.** Aim for sufficient investment and full participation in initial

education. Beyond GDP references and the need to adapt the investment to a feasible public budget, a minimum target of USD 50000 of cumulative expenditure per student, between the age of 6 to the age of 15, is a good reference based on research evidence. Monitor those not participating or at risk of exclusion and early dropouts, and adopt targeted measures, for example, through more personalisation for individual needs and broadening access at the higher secondary level. Combat schools' segmentation by supporting access of students with disadvantaged backgrounds and safeguarding quality standards in all schools.

7. Ensure a healthy, constructive and safe school environment; invest and empower teachers. Guarantee a minimum equipment and reasonable student-teacher ratio for more heterogenous groups at pre-school and primary level. More relevant, invest and elevate the teaching profession by ensuring decent salaries, supporting a teaching career, promoting public recognition, and keeping teachers and trainers upskilled. In case of budget trade-offs, prioritise investment in teachers over class-size.

## C Equip learners for future employability not past

8. Ensure a sound employable competences base for adaptability in more volatile, unpredictable environments. Do not disregard memory, particularly that coming from understood knowledge, and the sound base of knowledge necessary to recognise what is known and when complementary sources are needed, and to interpret and use knowledge and information consulted. Start with information processing skills, including the digital literacy needed for computational thinking and to effectively access and use knowledge available online, and to discern its relevance and reliability. Emphasise core cognitive skills, like analytical, critical and creative thinking, problem solving and the abilities necessary for "learning to learn". Fully integrate in education and training, through appropriate methodologies since early educational stages, noncognitive skills like communication, collaboration and teamworking, empathy, conflict resolution and negotiation, and the development of a "growth mindset". On the same note, equip with entrepreneurial skills like planning, organising, decision making, initiative, leadership, persistence and resilience. Develop selfresponsibility and work ethics values in cooperation with employers.

**9.** Advance participative methodologies. Use more participative methodologies to update traditional approaches, like lectures and individual study, but move to them, particularly when you want to shift from studying

"correct solutions" to learning how to tackle challenges with no single solution. These methodologies require using more heterogeneous resources and involving hands-on activities and learning by doing. Make the classrooms a space to identify problems, collaborate and discuss them, make mistakes and correct and learn from them, reach for fleshed-out solutions, or imagine and test inventions. Make students exercise how to find the relevant information, perform a task and make adjustments to deliver an assignment. Lead them to discuss options and take on suggestions, learn how to deal with different perspectives and work in a team. Prepare for the complex collaboration required in a globalised knowledge economy. Case studies, project-based learning, gamification, working experience modules, discussion and collaboration platforms including participants from different centres and locations, competitions and use of diverse resources, opportunities and formats enabled by technology are all part of the participative methodologies' toolbox.

#### **10.** Use technology to rethink and redesign educational activities.

Technology can be extremely useful in supporting dynamic methodologies and enhance learning environments. For example, what to do in the classroom and at home can be reversed in "flipped classrooms". The new "lectures" can be a video talk or documentary watched at home, and the old "homework" can be shifted into collaborative assignments worked in the classroom. Digital textbooks can be developed like online databases. Technology can help redesign creative spaces, for example, discussion corners, individual learning zones or connecting areas. Use of laptops and apps and coding can improve computational thinking. Cameras can be used to record exercises, provide precise individual and immediate feedback, or connect with remote speakers otherwise unavailable. Digital education platforms can facilitate monitoring students for early identification of difficulties, making automatic assessments, submitting assignments or implementing real-time surveys. Virtual and augmented reality can train skills in simulated environments otherwise unavailable or too expensive. Advanced educational technology, including artificial intelligence personalised learning actions.

Manage the use of technology effectively and, if necessary, avoid it when it interferes with other learning activities, for example, distracting and diminishing concentration. Invest in upskilling teachers and trainers in a clever use of education technology, well-integrated with the learning objectives and methods. Develop and make available to them a repository of online educational resources. Invest also in students from disadvantaged backgrounds, ensuring access to digital tools and connectivity. Prioritise investment in teachers' upskilling and students over acquiring the latest, more expensive gadgets. Smart budgeting in this area requires distinguishing the appropriate tools to support learning activities from the more sophisticated devices with limited distinct educational value.

## D Maximise adults lifelong learning

**11.** Identify and address all factors that can contribute to establishing a lifelong learning culture and raising awareness of the shared and diverse responsibilities of education and training institutions, employers, and individuals.

**12.** Increase lifelong learning opportunities, including on-the-job training, for example, adjusting them to workers, unemployed, or people with care responsibilities needs. Work to increase employers' commitment to continuous training and development of employees. Facilitate employers' association and partnerships in this field, and support those with more difficulties, particularly small and medium-sized enterprises (SMEs).

**13.** Build accessible, flexible pathways where people can join and leave formal education and lifelong learning activities at different points and in different formats, for instance, online or part-time.

**14.** Facilitate progression through the educational and professional ladder, for example, through recognition of prior informal learning and accumulable (micro)credentials. Encourage employers to identify and certify skills and maximise their utilisation within the company.

**15.** Target participation of those most excluded from lifelong learning activities, like the low-skilled, migrants, unemployed and SME workers.

## $\mathbf E$ Break the walls between the worlds of education and work

**16.** Monitor and anticipate labour market needs to keep curricular content and learning methods updated and target skill mismatches. Build or improve technical capacity and permanent mechanisms to observe, identify, describe, discuss and forecast learning needs. Translate them into updated learning offers, updated occupational standards, and career counselling. Consider labour market statistics of skills supply and demand, big-data analytics on job vacancies or skill surveys. Anticipate future scenarios, for example, considering the digital and green transitions or sectoral restructuring, building macroeconomic models and making projections. Along the whole process, involve and commit employers and key stakeholders to express their demands and discuss data on current and future needs, for example through national, sectoral, regional, or local skill councils. Make this task a shared responsibility.

**17.** Ensure that everyone receives work-oriented education and training before joining the labour market. Nobody should leave initial

education without a minimum first base of employable technical skills. A first objective would be to maximise the number of young people attaining a vocational, including through apprenticeship or university qualification. Ensure for the rest at least smaller vocational modules or working experience.

#### **18.** Cooperate with business to bring education and industry closer.

Bring teachers, schools and education policymakers closer to the world of work and foster regular participation of industry in education policies and centres. Ensure that the participation of employers in the identification of labour market needs does not end with a consultation during the diagnosis phase but extends over the development of occupational standards and curricular updates. Commit them to cooperation schemes with learning centres to develop different forms of work-based education and training. These can range from facilitating short working experience modules and study visits in general education, providing apprenticeships opportunities in vocational training, including through dual systems and stages or traineeships for tertiary education students and recent graduates, to offering support to reskilling and upskilling of adults through on the job training. Support and encourage businesses to share the most recent equipment for training purposes, for example, through sectoral and local partnerships. Involve them in transition-to-work services and procedures, from lifelong guidance to job-matching services associated with learning centres. Involve in and commit employers to well-integrated lifelong learning systems, for example, by opening their in-company training and participating in broader learning pathways, including (micro) accreditations and prior learning recognition, in sectoral reference centres, and educational and sectoral learning opportunities beyond their direct responsibility for their employees' training.



## Annex. National Fiches

The following documents summarise, for each selected country, the main features of education and training systems and policies in the context of this report. The documents are based on a brief literature review and a consultation with two experts per country.

## Argentina

#### Education system basic features

Education in Argentina<sup>15</sup> is, in principle, compulsory since the last year of pre-school (five years-old children), in Primary and in Secondary, according to the National Education Law (Ley 26.206). Primary school lasts six or seven years, depending on the province, as responsibilities on the education system and policies are shared between the National government and the provinces. Secondary education takes 5 or 6 years, again depending on the province. In higher secondary, students can take the general or the vocational path. VET (Educación técnico profesional) was reformed in 2005. Over 50 per cent of students enrol in this path. There is also VET at higher level. University studies take 4 to 6 years (Licenciado) that can be complemented trough Master and PhD levels. A few universities are relatively well positioned in international rankings.

Working experience (*prácticas profesionalizantes*) is a relevant feature of the education system in Argentina, after the age of 16.

#### About the strategy

• While some legislation established longer term strategies, for example for VET, there is no evidence of an overall comprehensive strategy on education and training policies.

• Coordination with other policy areas exists to a certain extent. For example, the environmental agenda is integrated in curricula, and there are linkages between education and health system regarding professional needs and shortages. National, local and sectoral councils, which involve stakeholders, including social partners and relevant Ministries, provide an institutional forum for coordination. However, relations with the world of work seem insufficient, and identified strategic needs are not systematically followed by updated contents, new planning and adapted budgets.

• There are evaluation processes in place, for example at the province level, or through international evaluations like PISA and UNESCO comparative studies. Nevertheless, it is not clear if and how results from evaluations are systematically translated into improvement programmes and policy reforms.

<sup>&</sup>lt;sup>15</sup> See a description of the Argentinian education system in https://wenr.wes.org/wp-content/uploads/2018/05/ May18\_MonroyCP-1-2000px.png

#### The necessary base

• In 2018, Argentina invested USD 3560 per student, primary to tertiary education<sup>16</sup>, a figure below the OECD average (OECD, 2021) and under the minimum threshold suggested by evidence as a barrier for good educational performance. While this level of investment seems insufficient, it doesn't mean that Argentina is not doing a significant financial effort in relative terms. In 2020, public expenditure on education was 5.02 per cent of its GDP, and 11.92 per cent of total public expenditure, both percentages higher than in many comparable countries, according to UNESCO statistics

• Argentina was the first country in the Latin America region reducing illiteracy and historically had a well-established education system. Participation in initial education is good, but not for the full the whole compulsory period. In 2016, 95.5 per cent of 5 years old children were enrolled in preschool, and 99.5 per cent participated in compulsory primary education. However, early dropouts are high, particularly after lower secondary, with some half of students not completing upper secondary level. Moreover, according to recent statistics<sup>17</sup>, the percentage of young people (25 to 34) with Higher Education seem to have declined below 20 per cent, below a number of countries in the region, like Chile, Brazil, Peru and Mexico.

• Differences in students' performance are significant, depending mainly on sociocultural background. In 2018, the proportion of children from the bottom quartile of the PISA index of economic, social and cultural status (ESCS) achieving at least PISA level 2 in reading was 64 per cent lower than that of children from the top ESCS quartile, compared to an OECD average of 29 per cent (OECD, 2021). And differences tend to perpetuate also due to a largely segmented educational system.

• Teachers' wages, as for many other workers, have been impacted by high inflation rates. There is a shortage of specialised trainers, particularly at technical level, including on technologies. At the moment, there are relevant programmes to upskill teachers and introduce education technologies.

#### **Employable Skills and performance**

• Overall skills students' performance is unsatisfactory. In 2018 PISA, Argentina ranked in positions 64 to 72 among the 79 countries participating in the programme and was not over the seventh position of the 10 Latin American countries. Other evaluations, including UNESCO regional comparative studies where performance of Primary students ranks below the average in Latin America, provide also bad results. Only a minority reached a minimum proficiency in maths and reading, both in primary and lower secondary, according to UNESCO statistics. The big dispersion of results and the fact that performance has declined over time are most concerning issues.

• Transversal skills, including those related to entrepreneurship, are considered, for example in the "junior achievement" module offered in some schools, as well

<sup>&</sup>lt;sup>16</sup> Annual public expenditure per full-time student in equivalent USD converted using PPPs for GDP
<sup>17</sup> SEDLAC. Socio-economic database for Latin America and the Caribbean

as in the final years of VET. According to employers, however, there is a deficit of transversal and non-cognitive skills that prepare students to learn further throughout their careers and equip them with the necessary working ethics. Teamworking and commercial skills are examples of shortages identified by employers.

• At the university level, employers perceive a very academic approach in which students are often not well equipped with more practical skills.

• The low qualification of the workforce remains a significant problem, feeding into existing inequalities. About half of the workers in Argentina have not completed compulsory lower secondary. On the other hand, one-fourth of the workforce is active in the informal economy, for example, in activities like care, small family businesses, including agriculture, recycling, etc.

#### Lifelong learning

• The education system provides options to adults to complete lower secondary, including some vocational training, but there is a very limited uptake.

• Some companies, particularly larger ones in the most competitive sectors (like software, audio-visual, automotive...), used to have training programmes for their employees. Some collective agreements include training provision. Some incentives are in place, like tax credits for companies investing in training, for an amount up to 8 per cent of annual labour costs.

• Private training providers have a reasonable offer, particularly for workers' certification in certain sectors. Online training options have grown significantly after the pandemic.

• However, for most SME workers and the general adult population, there are not many lifelong learning opportunities, and there is not a strong system facilitating a broad continuous training offer accessible to all.

• While it is possible to get informal learning recognised through a dedicated Agency established a decade ago, the scope and volume of recognition are very limited.

#### **Communicating education and businesses**

• Councils at national and province levels provide formal institutional participation, bringing together Education authorities with social partners and industry stakeholders. They can receive labour market statistics and use them as a base for discussions.

• There are also good methodologies in place to produce foresight exercises and build future scenarios. Employers promote surveys among their associates to identify needs, and there are good examples where this is transferred to an education and training offer (e.g. new Diploma in industrial commerce will be established by a University in San Juan, following employers' requests). However, while employers find that their voice is listened to, follow-up often fails. There is no systematic process to transfer identified needs to an updated learning offer, overall, discussions have a limited impact on the education system. Even in VET, where occupational standards are defined, they are only updated after relatively long periods.

• In the labour market, there are relevant unsolved qualifications mismatches. For example, there are shortages in information technologies, engineering, industry or mining, and surpluses of Law and Psychology graduates. While the country has a relatively significant unemployment level, many unemployed seem to lack employable skills. Vocational guidance systems don't look effective in correcting these imbalances.

• While there are very limited public-private partnerships, good practices can be found. For example, in Mar de Plata, education authorities worked with the shipbuilding sector, to identify needs and translate them quickly into a tailored learning offer, using business professionals also as trainers. The so-called San Juan Agreement, promoted after the COVID-19 pandemic, is a good example of public authorities and the private sector joining forces at the province level in several critical objectives, including the need to better identify learning needs and update of educational content. Cooperation with sectoral organisations at local level also exists, for example in the building and metal sectors.

• Working experience (*prácticas profesionalizantes*) are in principle mandatory in the last year of upper secondary, with some 200 hours. In higher VET, these stages are a percentage of the curriculum in all years. These working experience modules build on traditional pasantías, are linked to professional profiles, and have proved good value both in terms of in-work learning, and labour market integration. Roughly half of the students are hired by the same employer where they had the working experience. "Pasantías" are also mandatory at the university level, and in fact, companies seem more open to receiving university students rather than from the secondary level. As a result, not all students at secondary school are actually having this experience. Employers' associations are actively cooperating in these working experience schemes.

#### Strengths, best practices and recommendations

Argentina has a well-established education system with remarkable historical achievements, good participation levels in initial education, and a number of good quality education centres. There are some good examples of cooperation with stakeholders to adapt education to labour market and economic needs, particularly at local level or more generally in VET. Working experience modules can be considered a good practice to be extended. Social dialogue and institutional participation are embedded in the system.

However, the quality of education has deteriorated over time. Students' low performance on basic skills, particularly for those with less favourable background, low completion rates and early dropouts from education, as well as a low qualified work force remain important problems.

Recommendations at general level can include, first, increased efforts to expand preschool participation of children with disadvantaged background, to prevent

early dispersion of students' performance. Similarly, targeted measures to increase lower and upper secondary completion should be reinforced. Sufficient investment in education should be guaranteed, keeping in mind the target of USD 50000 of cumulative expenditure per student between the age of 6 to the age of 15, adjusted to a feasible and realistic budgeting plan for the country.

A longer-term strategy should be agreed with all stakeholders and followed up with detailed implementation action plans. Existing evaluations should be reinforced and, above all, followed up with targeted improvement action plans, appropriately resourced, and engrained in the general strategy.

The strategic approach should include better integration of skills related to the digital and knowledge economy and a more systematic adaptation of education to the labour market and economic needs. The existing gap between skills demand and supply should be addressed through reinforced vocational guidance measures and more systematic and permanent procedures that allow identification and anticipation of skills needs and a rapid translation to an updated learning offer. Participation of professionals in teaching activities should be facilitated. And private-public partnerships reinforced, building on existing good practices.

Training strategies should also consider how they can improve conditions and formalising the work of those in the informal sector.

## India

#### Education system basic features

The Gurukula system was one of the most ancient education systems. In the XIX Century, the British colonial period strongly influenced education in India, while it was reformed later after independence. The current education structure<sup>18</sup> includes four levels before higher education. Primary is divided in lower (ages of 6 to 10) and upper level (11 to 14), up to the 8th grade. High school covers 14 to 16, and higher secondary, 17 to 18. The VET path is managed by a separate Ministry and has a lower VET, parallel to high school, and further 3 years of VET, but is perceived as a second-class path and don't provide credits for the General education path. University follows roughly the typical structure of Bachelor, Master and PhD.

This structure has been reviewed under the National Education Policy (NEP) 2020 with suggested structural changes. The NEP 2020 is an ambitious reform which intends to bridge the gap between the current state of learning outcomes and what is required through major reforms from early childhood care and education through higher education. The final goal is to have achieved by 2040 equitable access to the highest-quality education for all. The reform was disrupted by the COVID 19 pandemic and has not yet been implemented.

Responsibilities are shared between the National government, which stablishes the National curriculum framework, and the States, responsible to develop and implement it.

There are four kind of school networks, State Schools, Central Board of Secondary Examinations (CBSE), ICSE/ISC (Indian Certificate of Secondary Examinations) and exclusive schools. The latter two, mainly private and with students with better socioeconomic background, have usually higher standards. There is approximately a ration of public to private schools of 7:5.

The size and diversity of the country are the most determinant factors also for education. The region of Kerala, for example, has achieved very high participation and much better students' performance than other states. Pockets of excellence coexist with large exclusion and underperformance issues. This has to be understood against the background of demography and the relevant share of population who is still under poverty.

#### About the strategy

• While current education policy doesn't seem to provide a comprehensive education and training strategy, the recent NEP 2020, developed after intense consultation, intends to introduce a more holistic view from early education and care to higher education, a better integration of general education and VET, currently coordinated by separate departments, and gives also consideration to lifelong learning.

• Participation of stakeholders in the education strategy and coordination with other policies is, in principle, provided through some formal mechanisms, but it

is often perceived as a sporadic exercise of limited impact. The Central Advisory Board of Education (CABE), for example, takes input from employers and other authorities often only once a year, with limited interaction and follow up. In fact, the NEP 2020 acknowledges this and foresees a reinforcement of CABE, not limiting its role to consultation.

 While there is no overall evaluation of the Indian education and training strategy and policies, a number of a relevant assessments offer useful evidence. The Annual Status of Education Report (ASER) is a citizen-led household survey that estimates enrolment of children aged 3-16 in rural India and assesses the basic reading and arithmetic levels of children aged 5-16. Standard exams are implemented in schools at the 10th and 12th level by different boards, like the Central Board of Secondary Education, and the Council for the Indian School Certificate Examinations. NEP 2020 calls for additional national exams at other levels, but not yet implemented. There is a growing popularity of international standards, like Cambridge International Examinations and International Baccalaureate, but limited to a number of schools with students from middle and high-income groups. India doesn't participate in international evaluations of learning outcomes. Additional reports including the annual India Skills Report focus on the post-school education and identifies skills and preparedness of students in various states of India in terms of employability and the skills sets they have achieved

#### The necessary base

• Public expenditure on education has grown and represented 16.54% of the total Government spending in 2022. In 2020, it was 4.47% of GDP, still below the 6% target declared by the NEP 2020, and also envisaged, but never achieved, much earlier by the 1968, 1986 and 1992 policies.

• Universal/compulsory education is established in the Constitution and considered by regulation a fundamental right to children aged 6 to 14 but was historically a problem (Right of Children to Free and Compulsory Education Act, 2009).

• In recent years, enrolment achieved a very high level, remaining over 95%, while in a country so populated even a small percentage of children excluded is a very high number. Participation after Primary (8th year) is currently a much more relevant problem, with less than 50% enrolled in grades 9th to 12th. National policy focuses now on increasing enrolment and avoid early dropouts at those ages. India has set a target of achieving Gross Enrolment Ratio (GER) in higher education of 32% by 2022 in comparison with global average of 36.7%.

• The low number of teachers per student can be an issue, particularly in rural areas, where sometimes there are multi-grade classrooms.

• Participation in tertiary education is still relatively low. There is a problem of access to university in rural areas and in less developed states, and a shortage of teachers at higher education.

• Whilst the Outcome based education is now becoming the norm, it is argued that sometimes this is more practiced in letter than in spirit.

• From a national perspective, there is a skew which needs to be addressed. Several states with larger younger populations still fall short on delivering the desired value or quality. This is evident in higher education where there is a large migration to states like Karnataka, Maharashtra and Tamil Nadu of students seeking higher education and subsequently seeking employment out of their home state. Whilst this is acceptable, but there is a state brain-drain which in effect, impacts the home state over a longer run.

#### **Employable Skills**

• Education system is increasingly being perceived as divorced from labour market needs. Primary education offers very low employability, and the high level of dropouts after grade 8th, mostly due to poverty and social, economic conditions, can only be hired for unqualified jobs or join the informal economy.

• Basic skills performance is very low and remains a relevant quality problem. It has been estimated that one out of four students in the age group of 14-18 years cannot read basic text fluently and more than half faced challenges in performing basic arithmetic. Moreover, there is still a relevant proportion of illiterate adults. Attaining foundational literacy and numeracy is a declared objective of NEP 2020.

• Many employable cognitive and non-cognitive skills are not really trained, as the system is mainly based on traditional knowledge. Entrepreneurship skills are only considered as a small module in VET or, exceptionally in some other programmes.

• Use of education technologies and development of digital skills are blocked by lack of infrastructure and equipment in rural areas and by large part of the population. At the time that schools were closed, during the pandemic, and activities were shifted to online learning, one out of three students in rural areas didn't have access to a smartphone at home (ASER, 2021).

#### Lifelong learning

• There is not an extended culture of lifelong learning in India, something perceived even as a privilege. In general, there are very few training opportunities available for adults. Informal learning is more spontaneous and not structured, for example simply learning by doing in the job or, for younger generations, learning via YouTube tutorials.

• There are no incentives to foster employers' investments in training. Some big industries do provide training to their employees, but this is a small part of the workforce. SMEs practically cant afford to provide training and even for medium-size organisations, training is an exception.

• There is room to increase flexible paths to accumulate learning. For example, connecting better VET and general education, increasing usability of online

training offer, building on the strong mechanism to recognise prior learning to connect it better with further training, etc.. .As in other areas, there are government plans in place, including a credit framework for lifelong learning.

#### Communication between education and businesses

• In some areas, there is good communication between education and business. For example, sector skills councils, operating in VET, discuss sectoral needs and receive information about labour markets, and develop curricula of the respective sectors VET. Some labour market intelligence is also provided by private operators, like the annual India skills report.

• However, the difficulty to communicate and coordinate with business in a country where 85% of employment is highly unorganised, in very small SMEs or mostly in informal economy, is a real challenge.

• Some emerging sectors, like IT, are under big strain, suffering from a shortage of the talent required. While some of the biggest firms have managed to include part of their needs in university curricula, this is the exception. Most IT companies feel that education institutions are not receptive, and they haven't been able to influence their curricula. There are complaints about the quality of learning outcomes and a mismatch with the employers needs, so employers in this sector feel forced to organise long induction training programmes for newly recruited staff in the company.

• Some sectors, like IT and health care, are also experiencing shortages of some occupations, which remain unsolved. And, when they find graduates, often discover that the equipment used in training centres was outdated. Up to now, there were not agreements in place to share more recent equipment with industry.

• Only a small percentage of students have some industry exposure. Apprenticeships have been extended to vocational and general education . Whilst increasing, apprenticeship as a means of skilling, is yet to become a norm. India has disparate geographies and India's industrialisation is mainly city driven. Many students in rural areas simply have no access to industries offering work placements. Industrial technical institutes (VET) provide most training in the education centre. There seems to be a paradox that industry cannot find a skilled workforce and students cannot find work placements to learn the job.

• Of most importance, children are often uninformed about their options and potential careers, due to a lack of career counselling.

#### Strengths, best practices and recommendations

Implementation of NEP 2020 seems to open a good opportunity for significant progress of education policies in India. It provides a more comprehensive strategy, supported by stakeholders. It intends to shift from knowledge to competencies, focusing on learning outcomes and promoting experiential learning. It expands the focus to a broader range of employable competencies, ranging from like creative thinking, scientific temper and innovativeness to digital literacy and many others. Recommendations should start reinforcing the commitment to achieve sufficient investment, a minimum infrastructure, and sufficient number of trained teachers. These remain major challenges for a country of the size and diversity of India. These are prerequisites, but advancements in funding have to be accompanied with an improvement of policies. Developing further a monitoring system and formative evaluations of learning outcomes, with the characteristics mentioned in this report, can help to better identify shortcomings, target measures and ensure effectiveness. Pockets of excellence and best performers can be used as inspiration to shape improvement programmes for a broader range of learning centres.

Skill-based learning, starting from a sound base of foundational skills, is another key element. Particular attention is required in the rural areas, where basic computing skills need to be supported through free access to equipment.

Building strong career guidance mechanisms seem to be critical, to find the best suited paths for children and encourage them to continue more years in education and training. This has to be accompanied by broadening learning opportunities, with an improved VET ecosystem and wider flexible pathways.

Lifelong learning also remains a significant challenge, where a broad strategy should include an increase of flexible and cumulative learning open opportunities, as well as incentives to foster employers' investments in training, among other measures.

Cooperation with employers must be improved, ranging from building better partnerships to identify needs and update curricula, to facilitate working exposure during education, and share equipment for training purposes.

For an effective transition, a number of challenges need to be addressed. These include the teacher/faculty-stakeholder buy-in and the expedient need to re-skill them to deliver 21st century skills to their students, make best use of technology and implement more active pedagogies, as indicated in the general part of the report. The NEP 2020 provides this direction and its effective implementation is needed to ensure a consistent and quality based approach and continuous improvement process.

## Italy

#### Education system basic features

The Italian education system structure<sup>19</sup> is not uncommon in western countries. Compulsory school covers ages 6 to 16. It includes Primary, Lower Secondary and the two first years of Upper Secondary level, which can be followed through the general or vocational pathways. Before Primary, Early education and care cover up to the age of three and Early school up to six. After compulsory years, Upper Secondary can be general or vocational. At the tertiary level, Italian University follows the Bolognaprocess structure (BAC, Master and PhD), and there is also a Higher VET, the *Instituti Tecnici Superiori* (ITS).

The two parallel paths in VET are a specific feature. The Ministry coordinates one at national level, and the second is managed by the regions. The latter can act in occasions as second chance, leading to equivalent qualifications. With recent reforms, both must adjust to the same vocational standards.

Three reforms are trying to integrate better education and work: —the reform of vocational guidance and the reforms of VET at secondary and at a higher levels. The latter (Higher VET reform, ITS) is built on a successful 10-year pilot test and has been approved in July 2022, implying major changes.

#### About the strategy

• There is no overall strategy coordinating education and other policies, including employment or industrial policies, and coordination of shared responsibilities at national and regional levels. can be challenging. However, good examples of coordination can be found. In higher VET, education authorities cooperate with the Labour and Economic Development Departments and the State-Regions Conference, and more concrete coordination at sectoral level is developed in each particular ITS. Cooperation with private employment agencies can be found, particularly for apprenticeships. Regarding coordination at more local and regional level, the so called "Fornero law" on lifelong learning established territorial networks, with the participation of education and training providers, employers, universities and research centres, social services, third sector entities, etc...

• The education system, at different levels, is regularly assessed by the Ministries of Education and of university. Students' knowledge is regularly evaluated in education centres, but skills are more rarely assessed. INVALSI, a research centre of the ministry of Education, produces regularly reports on schools' quality. "Eudoscopio", an independent evaluation managed by the Agnelli Foundation, measures school performance based on employment and academic achievements of graduates. Italy participates in international assessments like PISA and PIAAC. While there is a significant effort in evaluation in place, it is not clear if and how results are used to feed systematically into improvement programmes and policy reforms.

<sup>&</sup>lt;sup>16</sup>See a description of the Italian education system in https://eurydice.eacea.ec.europa.eu/national-education-systems/italy/italy

• In terms of Governance, participation of social partners is not always provided. For example, the lifelong learning table provides participation of regions and education stakeholders, but not of labour market stakeholders as social partners.

#### The necessary base

• According to experts consulted, the Italian system carry on a number of issues due to lack of investment in the last decades. However, the current context of the resilience and recovery plans, in the framework of the EU strategy, is more promising. Public expenditure on primary to tertiary educational institutions in 2019 was USD 10902 per student<sup>20</sup>, and 3.8 per cent of GDP. Both figures are below OECD average, but within an acceptable range regarding UNESCO 2030 targets and above the minimum threshold suggested by evidence as a barrier for good educational performance. The share of public expenditure on education was 7.4 per cent of total public expenditure.

• Participation in initial education is good, with practically full participation in compulsory education (98,5 per cent, 2021, OECD) and a very high rate also in early education and care (93 per cent, 2021, OECD). However, the early dropout rate is 13 per cent (2021, Ministry of Education), the third highest in the EU, and the number of people with only compulsory level education is too high. Moreover, the rate of young people not in employment, education and training is particularly high in Italy compared to other EU countries.

• Attractiveness and working conditions of teachers do not appear to be particularly good compared to other OECD countries.

#### **Employable Skills and performance**

• There is room for improvement in basic skills performance of Italian students. PISA results show a decline in reading and science, scoring on 2018 below OECD average. Performance in mathematics remained stable and around average. However, results of national evaluations (INVALSI tests) often differ from those of PISA. Adults' skills performance in PIAAC are even less favourable, with a suboptimal level placing Italy at the bottom of the countries ranking. Average result hides important regional disparities.

• While a significant number of adult workers lack a minimum level of basic skills, they are reluctant to attend adult learning in education institutions, and these skills are rarely addressed in continuous training. An exception can be found in the Metal-mechanics collective agreement, which sets a minimum of 24 hours retraining of basic skills.

• In general, Italian VET systems seem to provide good employable skills, with 75 per cent to 80 per cent of VET secondary graduates employed after 6 months, a figure that exceeds 85 per cent for higher VET.

• Regarding digital skills, EU-level standards have been adapted to a national level

<sup>&</sup>lt;sup>20</sup> Annual public expenditure per full-time student in equivalent USD converted using PPPs for GDP (OECD, 2022)

with relatively short training modules leading to three digital competence levels. More generally, teachers need to be upskilled in digital competencies both to teach them and to use them as a pedagogic resource.

#### Lifelong learning

• There are many opportunities for lifelong learning. The education system offers flexible adult learning for low-qualified adults, through compressed, shorter curricula. Adults enrolling in schools, however, is limited (less than 8 per cent of targeted adults). However, the most relevant offer for workers is provided by many training institutions financed through interprofessional funds (social partners bilateral funds financed through a training levy of 0.30 per cent of workers salary). Companies training can be also financed. Large companies also organise their own training plans.

• There is a formal right of paid leave for training, developed also through collective agreements.

• There are tax credits to incentivise companies to invest in training in the technology area. Other tools encourage companies' involvement in training, but they have difficulties to reach SME 's. An example is the recent competences fund, a scheme to pay back part of the salary spent in training (one week salary per month), while training costs can be paid in parallel by interprofessional funds.

• Despite the wide offer, adult participation in lifelong learning in the last 4 weeks Adults was close to 10 per cent, slightly below the UE average.

• Despite legislation in place and the right to have informal learning validated, this has not been systematically done. A new legal framework, however, has been adopted with higher expectations to better recognise workers' tacit knowledge. While the system is well defined, implementation remains challenging.

• Some ambitious initiatives have recently been implemented to facilitate training paths. The GOL programme (Garanzia di Occupabilità dei Lavoratori) targets some 3 million workers, who will be profiled according to occupational standards to offer them adapted learning programmes. Training paths with short training modules, ranging from 80 to 400 hours, and cumulative micro-accreditations, intend to facilitate workers to achieve a formal qualification in a relatively short period.

• In some way, a similar approach is considered in the reform of secondary VET, allowing students to be evaluated and profiled, so they can benefit from personalised (shorter) curricula when they demonstrate some prior competencies.

#### **Communicating education and businesses**

• There are systems in place to analyse labour market needs, but they are not comprehensive and fully embedded in the curricular update process. "Excelsior", a system created by Unioncamere (Chambers of Commerce Association) and ANPAL (an Agency of the Ministry of Labour), offers regular overviews and forecasts of labour market needs at the national and regional level based on employers' reports. Thanks to this system, employers are also getting more

involved in other activities, like school guidance. INAPP, a research institute with labour market intelligence linked to the Labour Ministry, provides information and scenarios based on a number of sources, including a survey of 50,000 enterprises. The exercise is repeated every three years, with partial annual updates. While information is disseminated, it doesn't transfer systematically to update education and training content. Big data analytics of vacancies are currently explored but not yet used to examine how to complement existing analysis.

• The project *Con la scuola* (With the school) promoted by Confindustria, Luiss University, SNAM and the Association of Italian Principals provides for the joint training of teachers and business managers to build a common language for the benefit of work-integrated paths.

• The Italian system ensures a first set of work-related technical skills before leaving initial education. They can be acquired through the vocational pathway under the compulsory years. On paper, everyone has the right and duty to receive at least 12 years of education or until they have obtained a three-year vocational qualification by 18.

• Compulsory working experience modules are incorporated at the upper secondary level. They range from 90 hours in the last three years of General Upper Secondary, 150 or 210 in two types of VET, and almost 30 per cent of the time in Higher VET. The situation of apprenticeships is, however, heterogeneous at the regional level. Apprenticeship contracts exist at three levels. First level is used to tackle early dropouts with limited impact. The second level is used more effectively in dual system schemes. And the third level is thought for tertiary graduates. In general, apprenticeship contracts are, above all, labour- marketentry-contracts, effective to integrate but with very heterogeneous training value. At upper secondary general education, up to 400 hours of working experience are foreseen, but companies willing to host students can be challenging, so simulated modules had to be organised. This working experience tries to address also transversal skills, in some cases including entrepreneurship.

• Despite many excellent local examples , the system for vocational guidance is generally very weak and with minimal participation of employers.

• The new ITS (Higher VET), managed by specialised Foundations with public and private partnerships, can be considerd best practice. The system is based on the participation of companies in governance and teaching, recognising businesses' training capacity, and has been successful, in its ten years test phase, in terms of employability and quality of training provided.

#### Strengths, best practices and recommendations

Education and training systems and policies are common to other western developed economies. Foundations are relatively solid, with good participation in initial education, a minimum investment, regular evaluations, broad possibilities to get the first set of employable skills and minimum working experience before leaving initial education, wide opportunities for lifelong learning, with updated occupational standards, and advanced legislation adopted as well as the good tradition of social dialogue.

ITS reform can be considered best practice, bringing closer the worlds of work and education, with a public and private partnership involving employers, including in

governance and training provision.

Recommendations at the general level could be made to develop a more comprehensive strategy, coordinated with other policies, with more substantial involvement of stakeholders, including at the governance level. Mechanisms monitoring and forecasting learning needs should be strengthened and better embedded in permanent processes to update education and training offers and career guidance not limit businesses' involvement to initial consultations. Evaluations of the educational system and education centres should be followed up more systematically to feed into continuous improvement programmes and educational reforms.

In compulsory education, efforts must concentrate on improving basic skills. Beyond compulsory ages, in expanding participation in education at other levels, fighting high levels of early dropouts and NEETs rate.

In lifelong learning, moving from the legislative framework and tools developed to practical implementation. Particular attention should be paid to involve those usually excluded, like low-qualified and SMEs workers.

## **South Africa**

#### Education system basic features

The South African education system has a relatively typical structure<sup>21</sup>. Compulsory school covers seven years of Primary/elementary and two years of compulsory Lower Secondary school, up to grade 9 ( age of 15). Upper secondary takes another three years and has two tracks, general up to Grade 12 (also known as Matric) and technical/ vocational, which is imparted in a separate school's network. Higher education comprises levels 5 to 10 in the National Qualifications Framework. Levels 5 and 6 conduct higher and advanced certificates in vocational education (TVET), and levels 7 to 10 to two levels of University Bachelor, Master and Doctoral degrees. South African Universities have a good reputation and are among the best in Africa according to different rankings.

While there has been significant progress in Education policies over the last decades, the country still suffers from legacies of the Apartheid period, concretely from the 1953 Bantu education law, which excluded black students from certain areas, expanding second-class standards for a majority.

#### About the strategy

• The overall strategy for education and training is relatively stable. Coordination with other policy areas exists, for example, with the Department of Home Affairs regarding the "critical skills list" for migration purposes. Education may also receive spontaneous information from other Departments, like the health care alerting about shortages. However, the coordination scope is limited and not systematic and implementation is not always aligned. For example, there is little coordination with departments like trade and industry and employment and labour to consider economic strategies, like those linked to foreign investment, trade or industrial policies.

• The quality of the basic education system is regularly monitored and evaluated. South Africa participates in international Evaluations like the Trends in International Mathematics and Science Study (TIMSS). Graduation requires passing national standardised tests (National certificates). While results are published, recommendations formulated, and schools are supervised, the very limited progress shows an insufficient or ineffective follow-up through targeted programmes, improvement action plans and reforms. Universities are evaluated by peers and benchmarked in Global rankings, in some cases with very good results.

• Regarding governance, some institutional participation arrangements are foreseen, like the Quality Councils of the South African Qualifications Authority (SAQA), which integrate representatives from employers, trade unions, education providers, professional bodies, and experts. Employers' perception, however, is that this institutional participation is rather general and doesn't facilitate a deep involvement in improvement programmes or reforms.

<sup>&</sup>lt;sup>21</sup>See structure in https://gpseducation.oecd.org/CountryProfile?primaryCountry=ZAF

#### The necessary base

• According to OECD statistics, in 2018, South Africa spent a total of USD 2562 per student on primary to tertiary educational institutions, significantly below the OECD average of USD 10000 OECD average (OECD, 2021). This figure is also under the minimum threshold suggested as a barrier to good educational performance. While the absolute figure is probably insufficient, in relative terms, South Africa has been making a notable financial effort. With UNESCO figures, public expenditure in education has been growing and, in 2021, was 6.6 per cent of GDP, meaning almost 20 per cent of the total Government expenditure, a remarkably high share.

• Participation at the preschool level (early childhood development centres) is remarkably low, with only 9 per cent of 3 to 5 years old children enrolled<sup>23</sup>. At compulsory education, while participation used to be an issue, the country has managed to achieve practically full enrolment in the recent decades, and concerns have shifted from participation to quality. Dropouts after the age of 15, however, remain high with over 50 per cent not completing any further education and training after compulsory school. Among those continuing in education and training, a good part enrol in the TVET path, which is perceived mostly as a second choice with limited employability.

• While enrolment in higher education has expanded significantly, participation is still very low. Tertiary attainment in 2018 was the lowest among the G20 countries, with only 7 per cent of adults having attained a tertiary qualification. Beyond the apartheid legacies, which continue to impact, part of the problem lies in failures at previous stages, with a large part of the students simply not meeting university entry requirements. The South African government has recently attempted to address financial exclusions by increasing funds to make access free for low-income students.

• A segmented education system seems to be a key issue. While there are pockets of high-quality school provision, most schools have a quality problem. National test score results show significant differences. The performance of students enrolled in top quintile schools compare well at international level. The gap with the rest of schools is wider than in almost every other country analysed by the OECD. Top quintile schools are mainly fee-paying, urban and with students of higher social, economic and cultural status. In a government effort to provide more options, a number of subsidized private schools have opened. Rural-urban divides also have an influence, with some 40 per cent of the population living in rural areas with poorer access for example to safe and reliable transport, internet resources and qualified teachers.

• Quality is higher at university, but only a small number enrol at this level. There are also differences between the country's top-performing and lowest-level institutions. While, after years of sustained investment, the proportion of black students has increased, it is still very low.

• Some issues related to teachers and class size school might influence the results. For example, the pedagogic skills from a generation of teacher educated in a segregated system could still have an influence, at least in certain areas.

<sup>&</sup>lt;sup>20</sup> OECD statistics. 9% in South Africa, compares to 78% in Argentina, to mention other country analysed in this report.

#### **Employable Skills**

• Basic skills performance of students in general education is very low according to UNESCO statistics. It places the country at the bottom of OECD ranking. 2019 TIMSS scores also place the country at or near the bottom of various ranking. Most shocking is that results are much lower than what could be expected from the country's GDP. After 5 years of school, there was no improvement in maths compared to 2015 results, when about half of the students couldn't work a very simple division. After 9 school years, there has been some improvement in mathematics and science, but results remain very low. Assessments of literacy also offer bad results (Reddy & et al, 2022; Economist, 2017).

• Unemployment level is very high, with the highest rate of young people below upper secondary attainment among OECD and partner countries (OECD, 2021).

• Regarding technical skills, only a small share of those leaving school enrol in TVET or have access to any post-school education and training. And the few who do, aren't sufficiently prepared with the skills required for the workplace to ensure they are productive and remain employable. Moreover, there is a significant TVET mismatch, with an excessive offer of some occupations not required in the labour market and shortages of others.

• On a better note, those achieving a university qualification usually integrate well into the labour market. The country also has higher education centres in highly employable areas, like STEM or health care, than comparable economies.

#### Lifelong learning

• The proportion of adults participating in learning activities is limited, and there are not too many available opportunities from education institutions. Information and advice can be an issue, with very limited career guidance provision for adults.

• Lifelong learning of workers is perceived as a shared responsibility of the government and employers. A National Skills Development Plan is regularly approved. The Sector Education and Training Authority (SETA) is responsible for developing the appropriate skills in several sectors, establishing structured learning programmes at different NQF levels (not restricted to artisan training in apprenticeships). Employers contribute a levy (1 per cent of the payroll) to be used by the SETAs for training purposes. Many companies do provide training to their employees. They can claim back a proportion of their contribution, provided they submit a training plan (workplace skills plan), including some activities giving credits in the NQF and an Annual Training Report stating the training achieved and accredited by the South Africa Qualifications Authority (SAQA). The National Skills Fund, also partially funded by these contributions, finance skills development initiatives identified by the National Skills Development Plan, including in TVETs colleges and an offer targeting the unemployed. A significant share of the workforce participates in these structured learning initiatives.

• A process for recognition and certification of prior informal learning is established, allowing access to further complementary training. Skills are assessed for a specific qualification and may lead to the achievement of credits. A relevant number of people have gone through the system over the years. Yet, this is still a relatively modest share of the working-age population. • There are some options for a modular offer, including online, and they are not too extensive.

#### **Communicating education and businesses**

• Regarding the identification and anticipation of skills needed in the labour market, insufficient data is available. There are no vacancy rates or systematic quantitative assessment of supply and demand. However, there are some regular contacts with employers, for example, at the sectoral level. The SETA requires employers annually to provide information on existing vacancies and upcoming needs within their workplace skill plans and annual training reports, used to claim back part of their training contribution. It is not too clear, however, how information is used, and there is little follow-up with the employers to detail further their needs and translate them into an updated education and training offer, for example identifying new occupations for which curricula could be designed or updating obsolete curricular contents. At the university level, most curricular updates come from the Universities themselves, not by employers' demands. At the TVET level, there are some good examples of regular contacts with businesses for curricular design and workplace training, like the sugar industry. A project to build Centres of specialisation is another good example which intends to identify TVET colleges that could be leaders in a particular sector, with an industry champion attached to them. This has been done for sectors like the automotive and steel, but this is not generalised and employers feel that there is much work to be done to ensure private sector partnership to ensure that skills and curricula are better fitted to the sectors' needs.

• Employers participate in some institutional bodies, like the Quality Council for Trades and Occupations (QCTO). In this forum they have expressed frustration about the little and slow process to review outdated qualifications within the South African Qualifications authority.

• While structured learning programmes defined by SETAs were initially supposed to replace apprenticeships, these schemes remain in place for "artisan" jobs. A tripartite advisory body under the Department of University and training, the National Artisan development advisory body (NADAP) provides participation to employers, mainly through the sectoral associations. Assuming placements can be found, the apprenticeship system seems to work well.

• Regarding working experience during the studies, a minimum number of certified working hours with an employer are required for a number of professions and occupations, both at university and in TVET. These placements seem to work well, providing the necessary hands-on skills.

#### Strengths, best practices and recommendations

The education system and policies in South Africa enjoy stability and have some established connections with stakeholders. The Government has been making a significant financial effort, in relative terms, and managed to overcome old problems like participation at the elementary level.

Examples of high-quality education can be found in a number of schools, particularly Universities. And good practices of cooperation with industry can be found in specific

sectors, Universities of TVET colleges.

However, the main problem of South African education remains at the basic foundations. The system is segmented, particularly at the school level, with a few high-quality pockets and a vast majority with poor performance. Students' dropouts remain high, and progression to higher qualifications is limited.

Recommendations should start with a call to increase the participation of children in preschool, prior to compulsory education, particularly in disadvantaged areas. Evidence shows that investments at these early stages pay back the biggest returns in terms of longer-term achievements.

Existing evaluations and national exam results should be followed up more systematically with targeted improvement action plans, appropriately resourced. Evaluations should also help to identify if there are teachers' skills gaps that need to be addressed. In compulsory education, targeted programmes should emphasize basic skills, particularly literacy and maths, and the resources necessary to deal with heterogeneous talent in the same classroom. And after compulsory age, targeted measures should aim to increase lower and upper secondary completion and the number of students achieving university entry requirements. Introducing the computational thinking skills needed for the digital world is an additional challenge in this context.

These objectives are likely to require an additional budget. The target of USD 50,000 of cumulative expenditure per student between the age of 6 to 15 should be kept in mind, adjusted to a feasible budgeting plan for the country, considering the already high relative public investment. Funding regimes might consider some healthy competition to drive quality programmes, provided students background is controlled, and school in disadvantaged areas are not further penalised.

The overall strategy should reinforce communication of education authorities and centres with the world of work, as well as coordination with other relevant policies. Permanent procedures should be established to assess, identify and anticipate more systematically labour market needs, and to transfer them to a learning offer that matches better the employers demand. Procedures should ensure an active participation of all stakeholders, particularly the employers, and a permanent contact with other relevant policy areas, like economic and industrial policies.

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