

Skills and Innovation in G20 Countries



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Introduction and background

The Group of Twenty (G20) is a leading forum of the world's major economies that seeks to develop global policies to address the most pressing challenges today. Collectively, G20 members account for two-thirds of the world's population, 85% of the global economic output and 75% of international trade (G20, 2018). The G20 consists of 19 countries and the European Union. The 19 countries include: Argentina, Australia, Brazil, Canada, China, Germany, France, India, Indonesia, Italy, Japan, Mexico, Russian Federation, Saudi Arabia, South Africa, Republic of Korea, Turkey, the United Kingdom and the United States.

Building on the legacy and outcomes of previous G20 Summits, one of the three priorities of the Argentine Presidency of G20 in 2018 is: *The future of work: Unleashing people's potential*. Particularly in the area of education, the Argentine Presidency calls on G20 leaders to expand efforts to design quality education strategies that will equip citizens with appropriate skills for life and work (G20, 2018).

To build an appropriate set of skills needed to boost economic growth and enhance countries' capacity to innovate, new policies, combined with strategic planning, are needed. These include: ensuring children and young people acquire basic skills, fostering the cross-border mobility of highly-skilled people, and investing in research and development (R&D). These areas require an active role from the public sector. At the summit in Hangzhou (China), G20 leaders called for investments in science to influence the rate at which new technologies are developed, adopted and diffused (OECD, 2016).

Inspired by the Government of Argentina's recognition of innovation as a key source of growth and the G20 commitment to the 2030 sustainable development agenda, the purpose of this paper is two-fold. First, it presents the statistical profiles of selected aspects of skills and innovation in G20 countries. Second, it addresses learning and the fact that many children and young people are not meeting minimum proficiency levels in literacy and mathematics, even though access to education in most G20 countries has improved noticeably.

Specifically, this paper reviews the following three dimensions of the G20's potential to build skills:

- What is the level of basic skills of children and young people in G20 countries? To what extent are children and young people not learning?
- What are the levels of educational attainment and how many internationally-mobile tertiary students are there in G20 countries?
- What are the new trends in research and innovation in G20 countries?

Section 2 addresses the issue of whether or not children and young people in G20 countries are learning basic skills, as well as youth who are neither using their skills in employment nor investing in skills through education and training. Section 3 then reviews the level of educational attainment and cross-border mobility of higher education students, which contribute to human resources for research and innovation. Section 4 summarises new trends in research and innovation in G20 countries. Finally, Section 5 concludes by providing general policy implications.



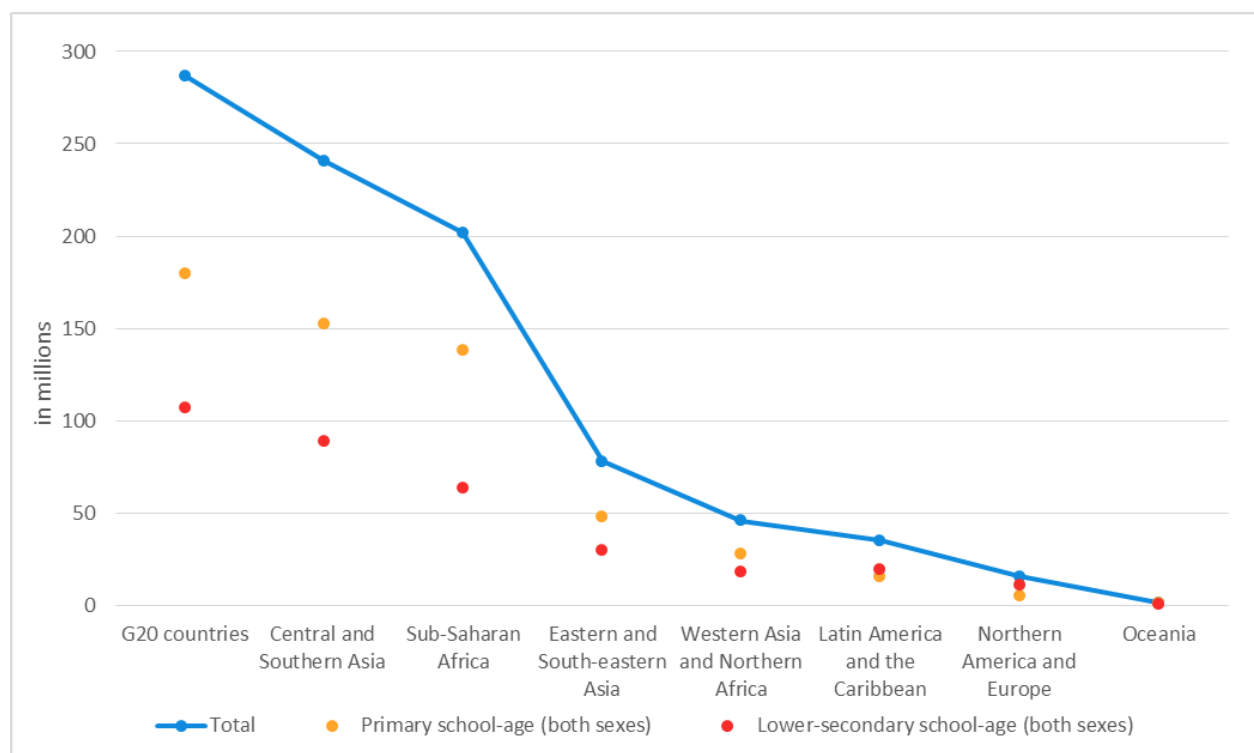
1. Basic skills

The quality of education still remains a challenge to be addressed by policymakers. Even though more children and adolescents than ever attend schools, many do not acquire the basic skills in reading and mathematics that help to set the foundation for lifelong learning, employment and sustainable development. This section starts with presenting the proportion of students achieving minimum levels of proficiency in reading and mathematics by country. Next, it addresses two challenges that may undermine the building of skills for economies and societies: the extent to which children and adolescents are not learning basic skills and the extent to which young people are not in education, employment or training.

Children not learning

The UNESCO Institute for Statistics (UIS) estimates that globally more than 617 million children and adolescents of primary and lower secondary school age do not achieve minimum proficiency levels in reading and mathematics (UIS, 2017b). About two-thirds of these children and adolescents are in school but are not meeting minimum standards either because they have dropped out or because they did not learn the basics. Among these 617 million children and adolescents, 287 million (47%) reside in G20 countries (see *Figure 1*).

Figure 1. Estimates of the number of children and adolescents who do not achieve the minimum proficiency level in reading in G20 countries and by region, 2015



Note: The grouping G20 countries covers data from 19 countries.

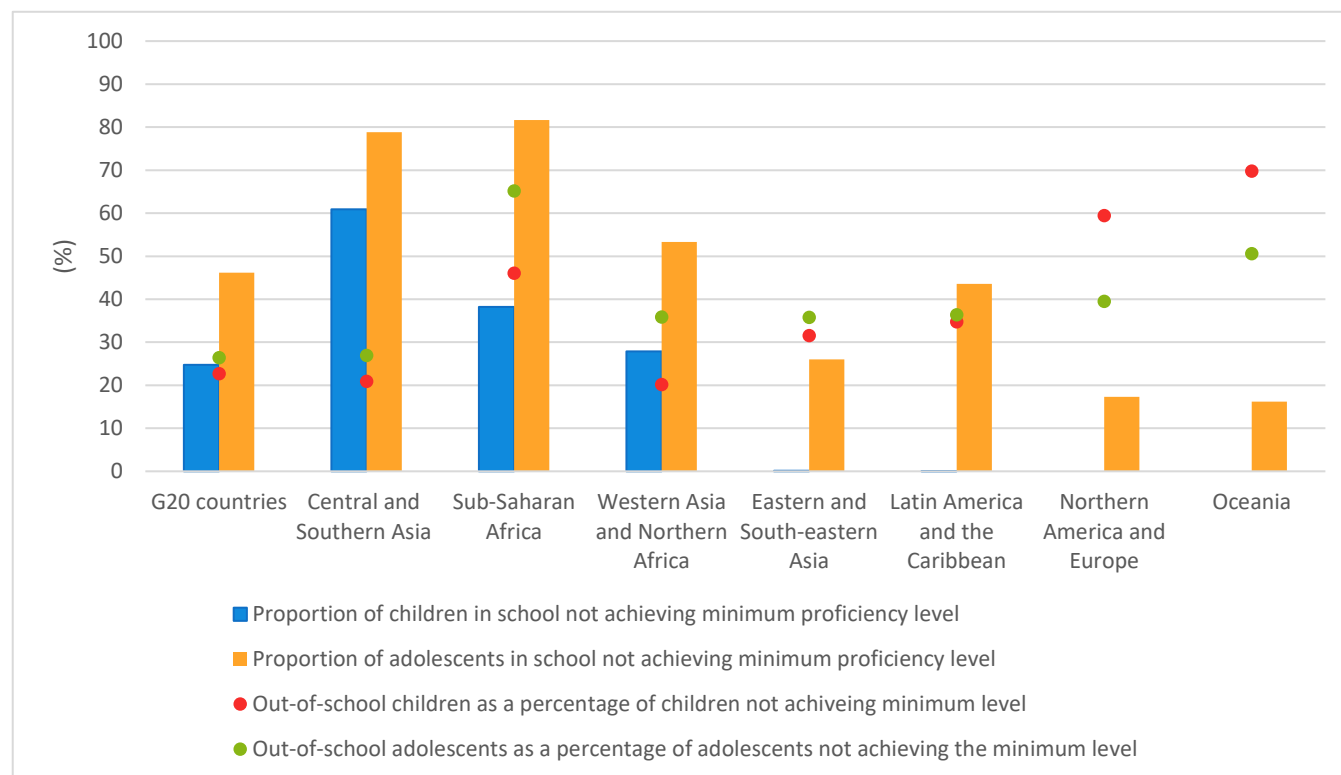


There are variations in defining what constitutes and how to measure minimum proficiency, and each learning assessment currently uses its own definition of proficiency. Nevertheless, the picture remains worrisome. Given that these assessments are school-based, results point towards low levels of basic learning and skills in the child and youth populations as a whole, including those who are out of school, and raises serious questions about the extent to which today's youth are equipped to address the challenges of the future.

Children and adolescents in schools but not learning

Figure 2 shows the UIS' estimates on the number of out-of-school children and adolescents as a proportion of the number of children and adolescents not achieving the minimum level of proficiency in reading. In G20 countries, out-of-school children represent a relatively small proportion (23%) of the total number of children not achieving the minimum proficiency in reading. The proportion for adolescents is 26%. **This implies that a majority of children and adolescents not learning are actually in school, which raises concerns about the quality of education being offered.**

Figure 2. Proportion of children and adolescents in school not achieving minimum proficiency levels and out-of-school children and adolescents as a percentage of total children and adolescents not achieving minimum proficiency in reading, 2015



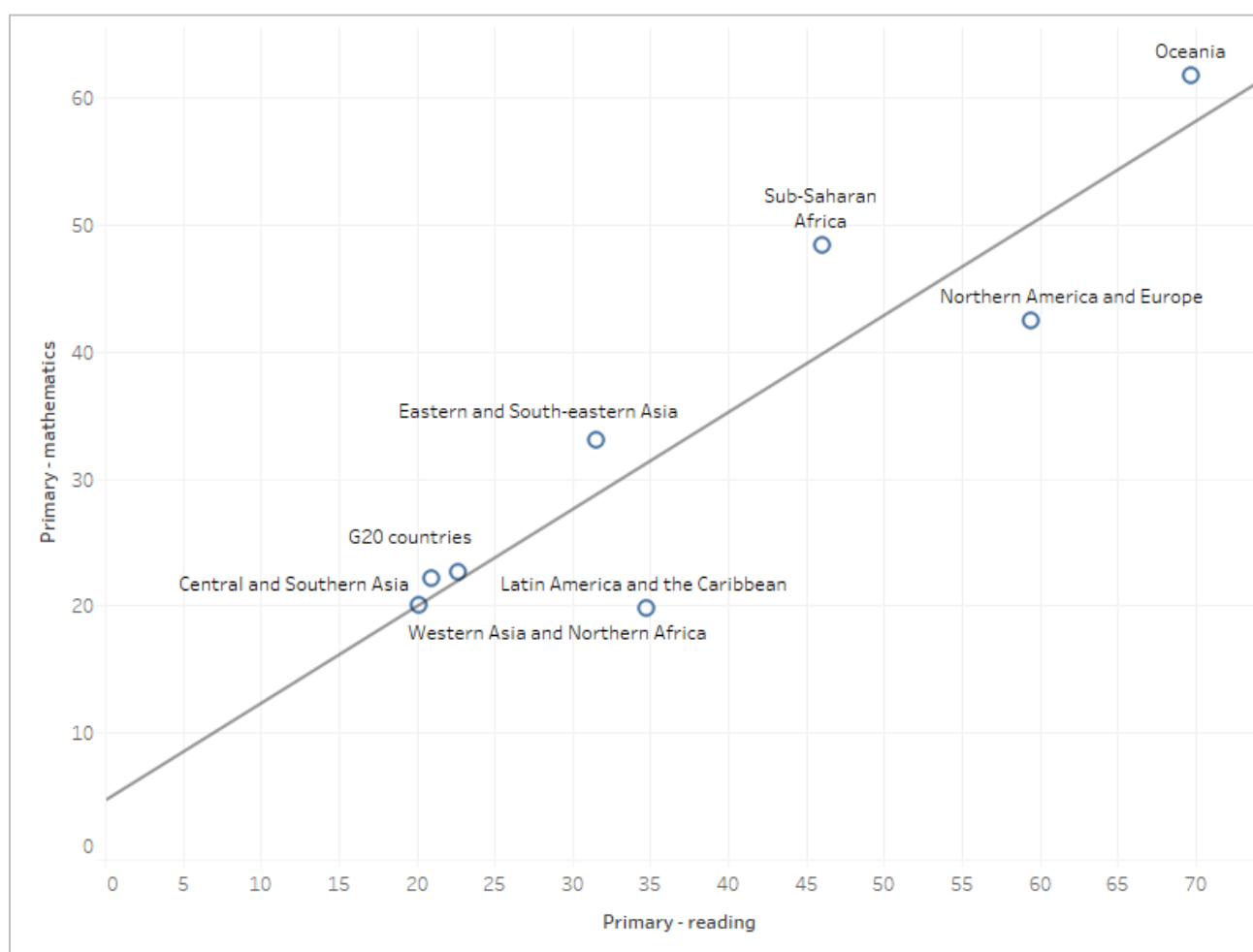
Note: The grouping G20 countries covers data from 19 countries.

Source: UNESCO Institute for Statistics.



Figure 3 is a graphical representation of the relationship between out-of-school children as a percentage of children not learning in reading and that in mathematics. The linear relationship that is noticed for a few regions – including G20 countries – indicates that the quality of education is very similar for both reading and mathematics, as there is not a large difference in the percentage of children in school not learning these subjects. Regional groupings below the trend line (i.e. Latin America and the Caribbean and Northern America and Europe) have a higher percentage of out-of-school children not learning in reading than in mathematics. Regional groupings above the trend line have the opposite interpretation.

Figure 3. Out-of-school children as a percentage of total children not achieving the minimum proficiency in reading in relation to that in mathematics, 2015



Note: The grouping G20 countries covers data from 19 countries.

Source: UNESCO Institute for Statistics.



Youth not in education, employment or training

Another dimension of missed opportunities and losses for individuals and societies are the youth that are neither using their skills through employment nor investing in skills through education and training. The risk for youth not in education, employment or training (NEET) is generally associated with low educational attainment and weak information-processing skills, such as poor literacy and numeracy.

To better understand the proportion of young people aged 15 to 24 years who are NEET, the UIS analysed data for 8 of the G20 countries plus 15 EU member states. **Figure 4** shows that the result varies greatly by country. The lowest proportions of youth NEET (or the NEET rate¹) are found in the Netherlands (4%), Austria and Sweden (7% each), while the highest NEET rates are found in India (43%), South Africa (31%), Brazil (23%), Italy (21%), and Argentina and Mexico (20% each).

This figure also shows that in European countries, NEET rates by educational attainment tend to be homogenous. The only significant difference is found in Greece, where a significantly high proportion of 15- to 24-year-olds with tertiary education are not in education, employment or training.

In 13 of 22 countries with data disaggregated by sex, females have higher NEET rates than males, especially in Argentina, Brazil, Mexico and South Africa. In India, NEET rates by educational attainment for males are higher than for females.

The distribution of youth NEETs and non-NEETs by level of educational attainment was available for 19 countries. **Figure 5** shows that in the majority of countries, among NEETs the proportion of individuals with less than primary education is greater than among non-NEETs, and these countries include middle- to high-income countries. The exception is India, where 28% of non-NEETs have less than primary schooling, compared to 1% of NEETs.

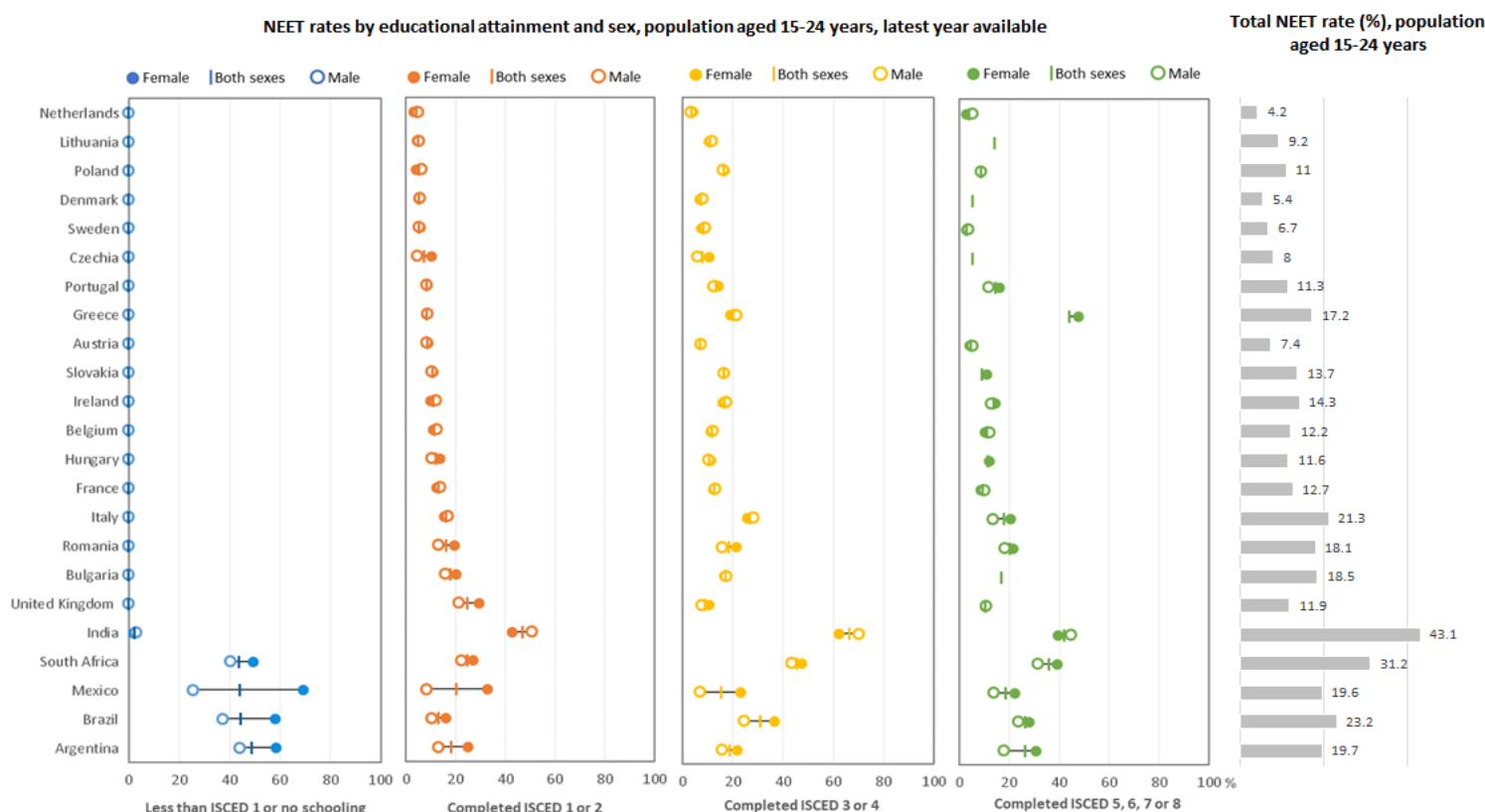
On the other hand, in the group of countries with data, NEETs have on average higher educational attainment than non-NEETs, as indicated by the proportion of the population which completed upper secondary education (ISCED 3) or higher. In 68% of the countries with data, about one in two youth NEETs has completed ISCED 3 or a higher level of education. Countries with the lowest proportions (less than 40%) of NEETs who complete ISCED 3 or higher include Mexico (26%), India (34%), South Africa (38%) and Argentina (39%). These four countries also have the highest proportions of youth NEET who completed lower secondary education (ISCED 2) or a lower level of education.

Nearly one-third (32%) of the countries with data have 10% or a higher proportion of NEETs who completed tertiary education (ISCED levels 5, 6, 7 and 8). The highest proportions are found in Lithuania (15%), Greece (14%), Belgium and Portugal (13% each). However, in the group of countries that were examined, non-NEETs have similarly high levels of completion of tertiary education.

¹ The NEET rate for youth is defined as the proportion of youth not in education, employment or training.



Figure 4. Rate of youth not in education, employment or training (NEET) by educational attainment and sex in selected G20 and EU countries, latest year available (2012-2016)

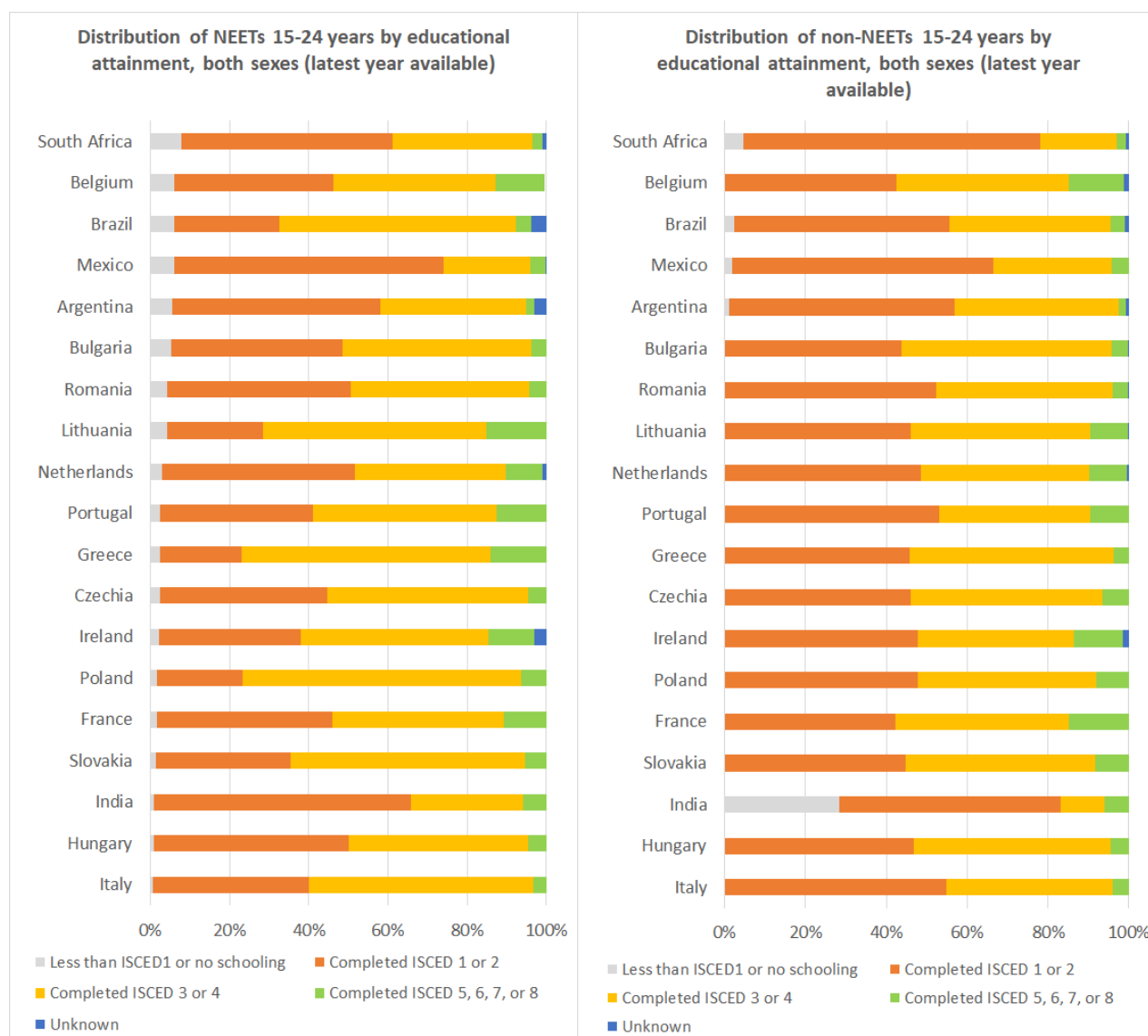


Note: Countries are sorted by the NEET rate among 15- to 24-year-olds who completed less than ISCED 1 or who have no schooling. Countries where data for “less than ISCED 1 or no schooling” are nil are sorted by the NEET rate among 15- to 24-year-olds who completed ISCED 1 or 2.

Source: UNESCO Institute for Statistics calculations based on NEET dataset from ILO (as of 5 October 2017).



Figure 5. Distribution of NEETs and non-NEETs, 15-24 years old



Note: Countries are sorted by the proportion of NEETs who completed less than ISCED 1 or who have no schooling.

Source: UNESCO Institute for Statistics calculations based on NEET dataset from ILO (as of 5 October 2017).

2. Higher education and cross-border student mobility in G20 countries

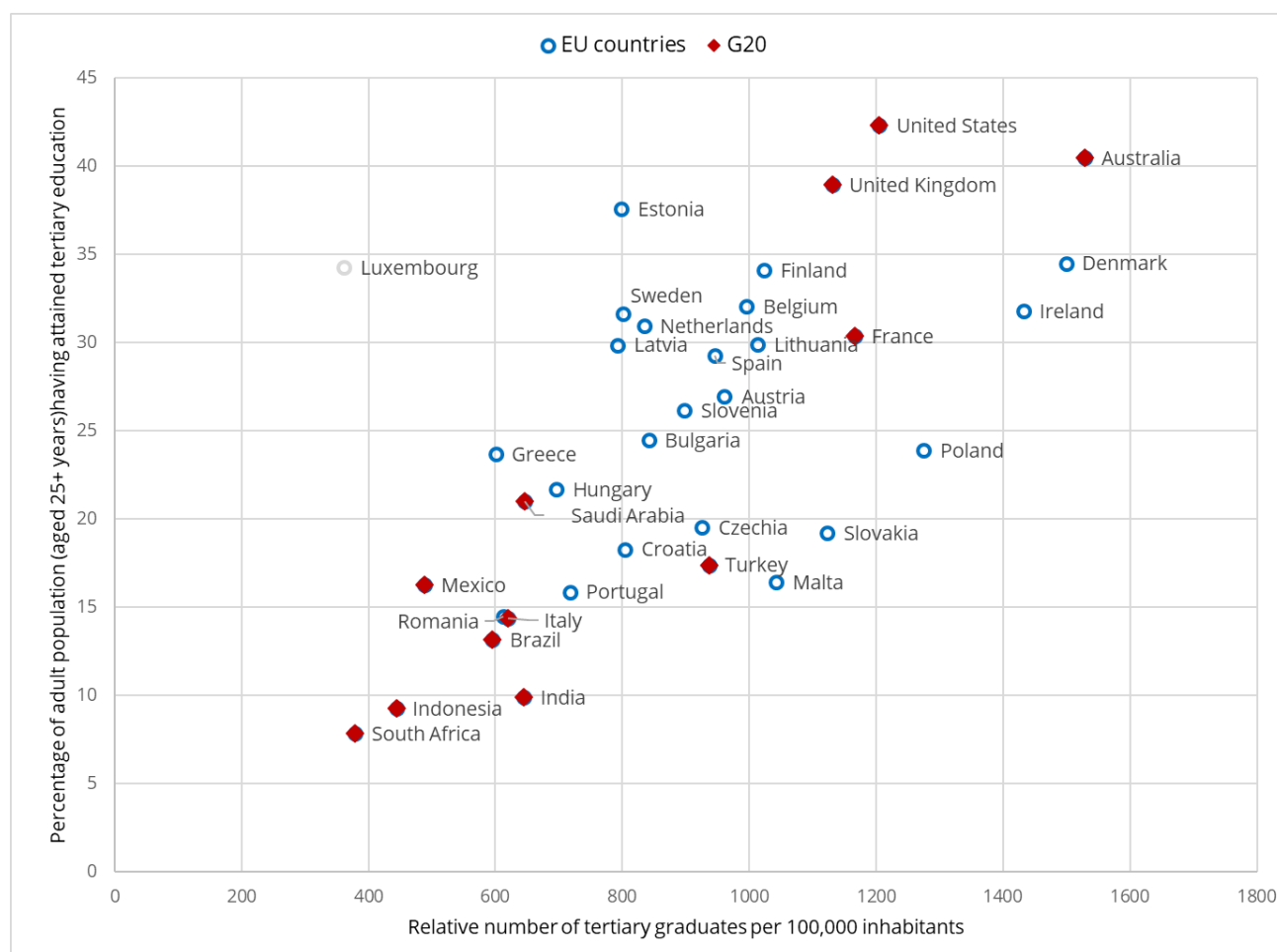
Figure 6 illustrates the correlation between the total stock of tertiary graduates in G20 countries and the current number of tertiary graduates in the most recent year available. Among G20 countries with data, Australia, France, the United Kingdom and United States (around the upper-right quadrant of the figure) show both a high stock and a high flow of tertiary graduates. In these countries, the adult populations which have attained at least tertiary education is high (over 30%); at the same time, their higher education systems produce a relatively high number of graduates who are expected to join the highly-skilled workforce.



The opposite scenario is found in countries such as South Africa and Indonesia at the lower-left quadrant of Figure 6. In these countries, the percentage of adult populations who have attained tertiary education is low (<10%) and their higher education systems continue to produce relatively low numbers of tertiary graduates each year.

Among G20 countries with data, Saudi Arabia and Turkey show a trend that may allow them to catch up with high-income countries that have high proportions of adult populations with tertiary education. For instance, in Turkey, the percentage of adults which have attained tertiary education is 17%, still lower than several high-income countries. However, Turkey is heavily investing in higher education by producing a greater number of tertiary graduates each year. As a result, the relative number of tertiary graduates in Turkey in 2015 was much higher than in other G20 countries, such as Brazil, Indonesia, Italy, Mexico and South Africa.

Figure 6. Percentage of adult population having attained tertiary education and the current level of tertiary graduate, 2015 or latest year available



Notes: Argentina, Canada, China, Germany, Japan, Republic of Korea and Russian Federation are not presented due to a lack of data. Educational attainment data for India and Ireland refer to 2011.

Source: UNESCO Institute for Statistics

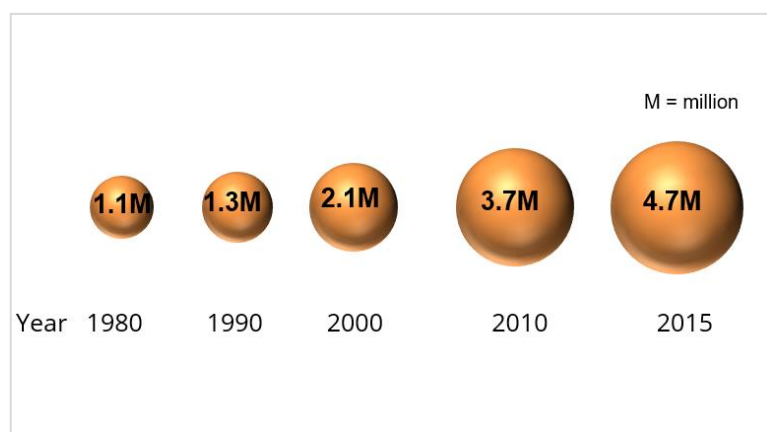


Cross-border student mobility

The number of students studying abroad continues to surge as higher education institutions around the world vie for the best minds and diverse cultures on campus. A growing number of countries are competing to attract these students by offering more affordable and culturally-relevant programmes of study.

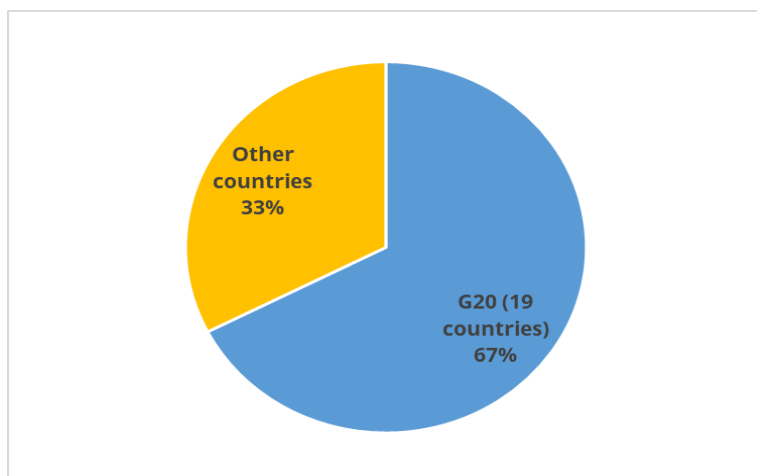
The rise in mobile students reflects growing tertiary-level enrolment around the world. In 2015, at least 4.7 million students went abroad to pursue a higher education degree or diploma, up from 2 million in 2000 (see **Figure 7**). This means that about 2%, or 2 out of every 100 higher education students, pursued their studies abroad. The 19 countries in the G20 alone hosted over two-thirds of global mobile students in 2015 (see *Figure 7*).

Figure 7. Long-term trend in the global numbers of internationally-mobile students, 1980-2015



Source: UNESCO Institute for Statistics.

Figure 8. The global share of internationally-mobile students who studied in a G20 country (19 countries), 2015

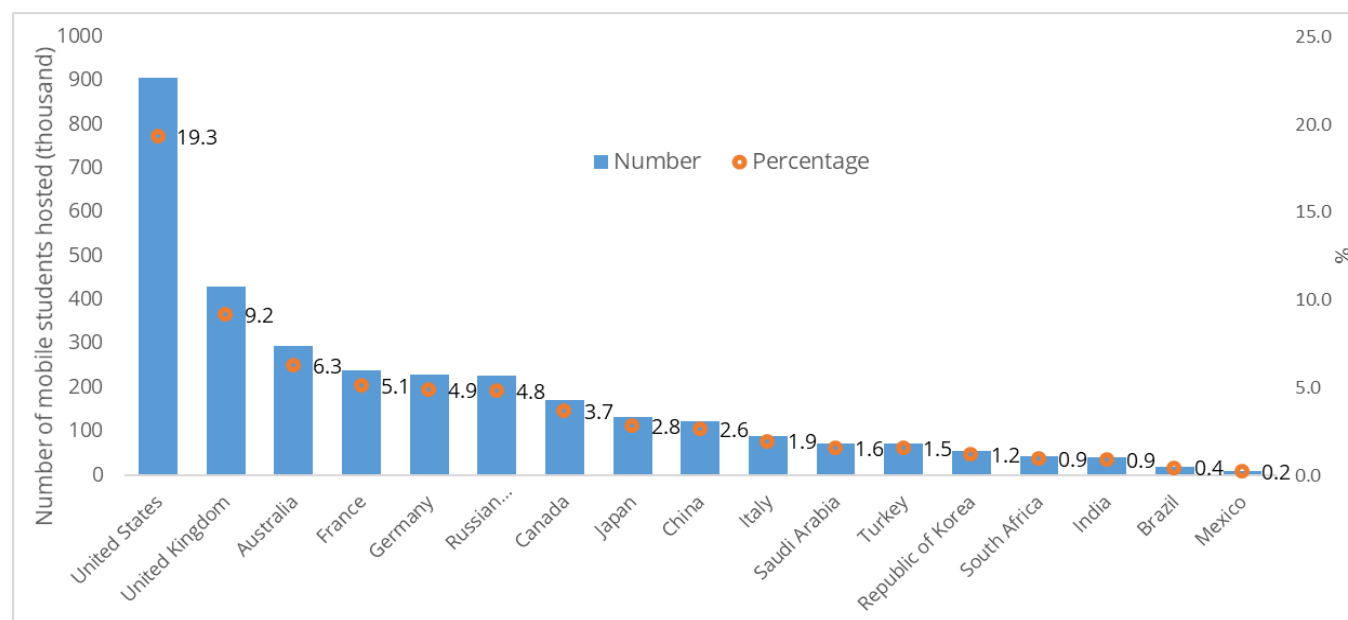


Source: UNESCO Institute for Statistics.



The United States leads in hosting the largest number of mobile students worldwide (hosting about 907,300 or 19% of the global total), followed by the United Kingdom (430,700, or 9.2%), Australia (294,500, or 6.3%), France (239,400, or 5.1%), Germany (228,800, or 4.9%), Russian Federation (226,400, or 4.8%), Canada (171,600, or 3.7%), Japan (132,000, or 2.8%), China (123,100, or 2.6%) and Italy (90,400, or 1.9%) (see **Figure 9**).

Figure 9. Number of internationally-mobile students hosted in G20 countries and share of the global total, 2015



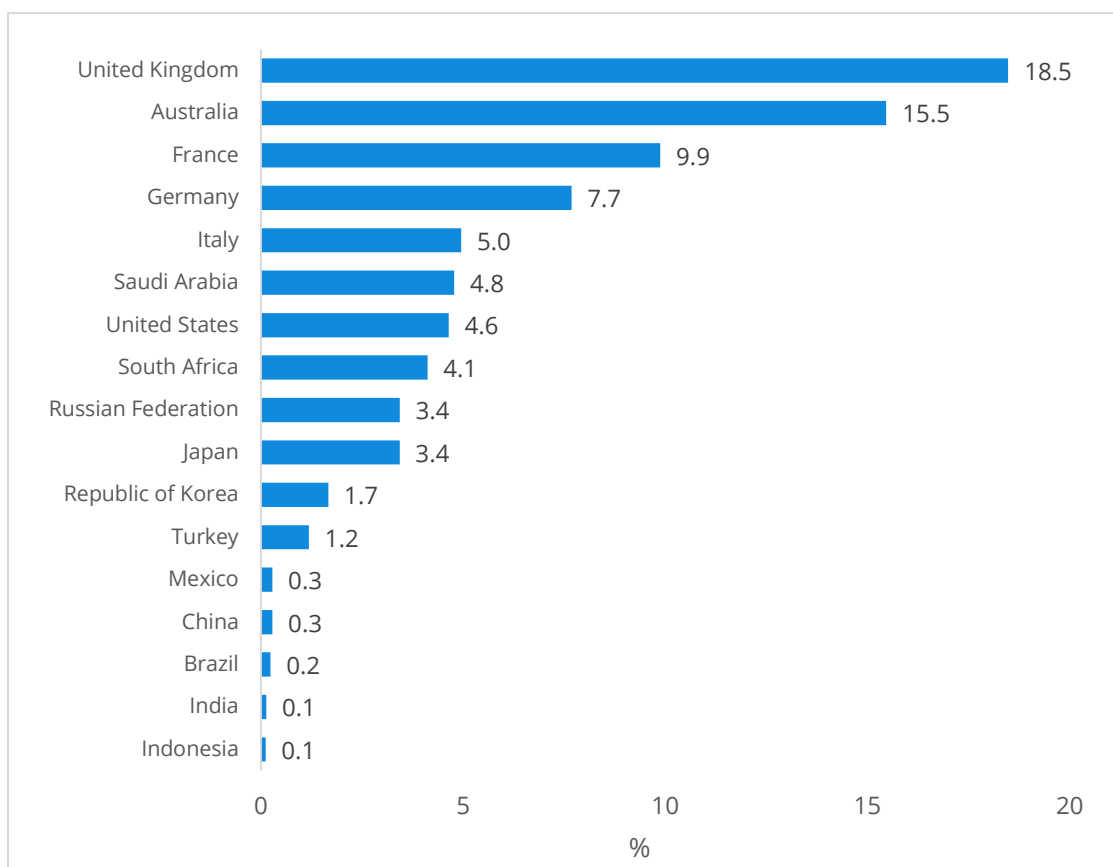
Note: Argentina and Indonesia are not presented due to a lack of data.

Source: UNESCO Institute for Statistics.

Among G20 countries, internationally-mobile students make up an important share of tertiary-level students, especially in Australia, France, Germany, Italy, Saudi Arabia, the United Kingdom, and the United States. Particularly in Australia and the United Kingdom, mobile students account for a significantly high proportion of their higher education students (15% and 18% respectively), as measured by the inbound mobility rate (see **Figure 10**). In other words, on the campuses of universities and colleges in the United Kingdom, nearly one out of every five students is an internationally-mobile student.



Figure 10. Inbound mobility rate by country, 2015



Source: UNESCO Institute for Statistics.

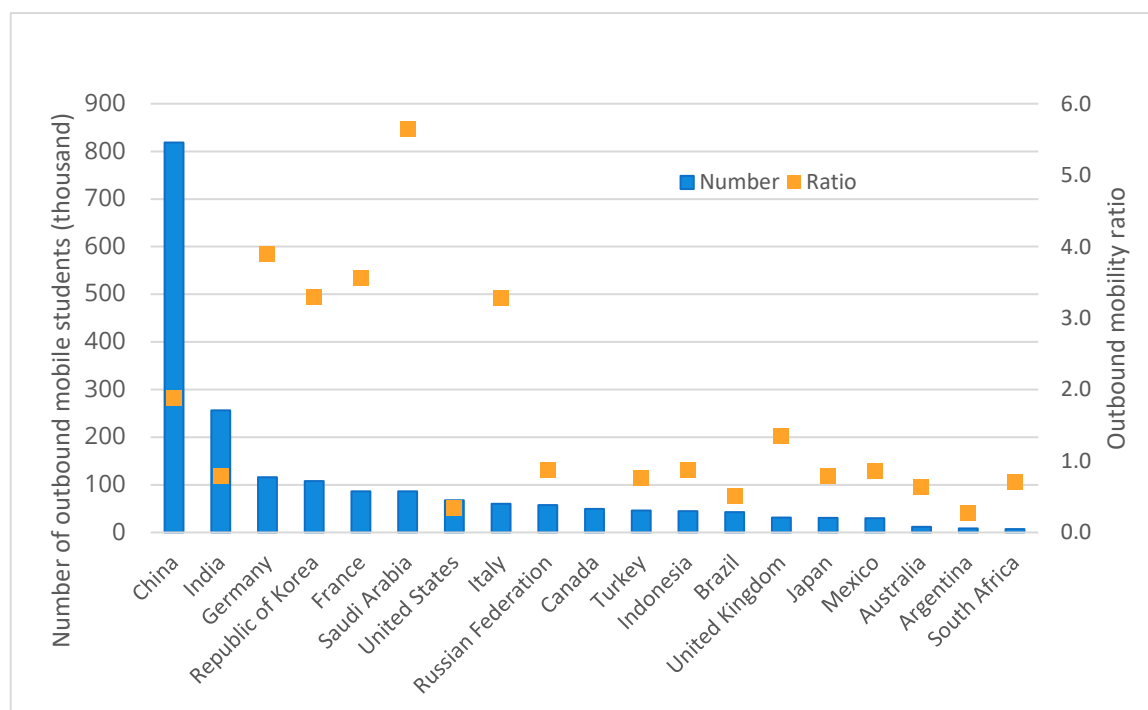
Among G20 countries, China accounted for the largest number of students going to study abroad in 2015, amounting to 819,000 (or 17% of global total) (see **Figure 11**). The other major countries of origin include: India (256,100), Germany (115,900), the Republic of Korea (107,900), France (86,300) and Saudi Arabia (86,300).²

Looking beyond the total numbers, the outbound mobility ratio offers unique insight on the situation in the countries of origin of mobile students. For example, despite the high numbers of students from China who are studying abroad, they represent only 2% of the country's tertiary students. In contrast, among the G20 countries, Saudi Arabia has the highest outbound mobility ratio of 5.6%, suggesting that for every 100 higher education students studying in Saudi Arabia, there were 6 students enrolled in higher education institutions abroad. The outbound mobility ratio is also high in Germany (3.9%), France (3.6%) and Italy (3.3%). In the United States, the ratio is only 0.3%.

² It is important to note that these numbers can be under-reported in some countries.



Figure 11. Number of outbound mobile students and the outbound mobility ratio by country, 2015



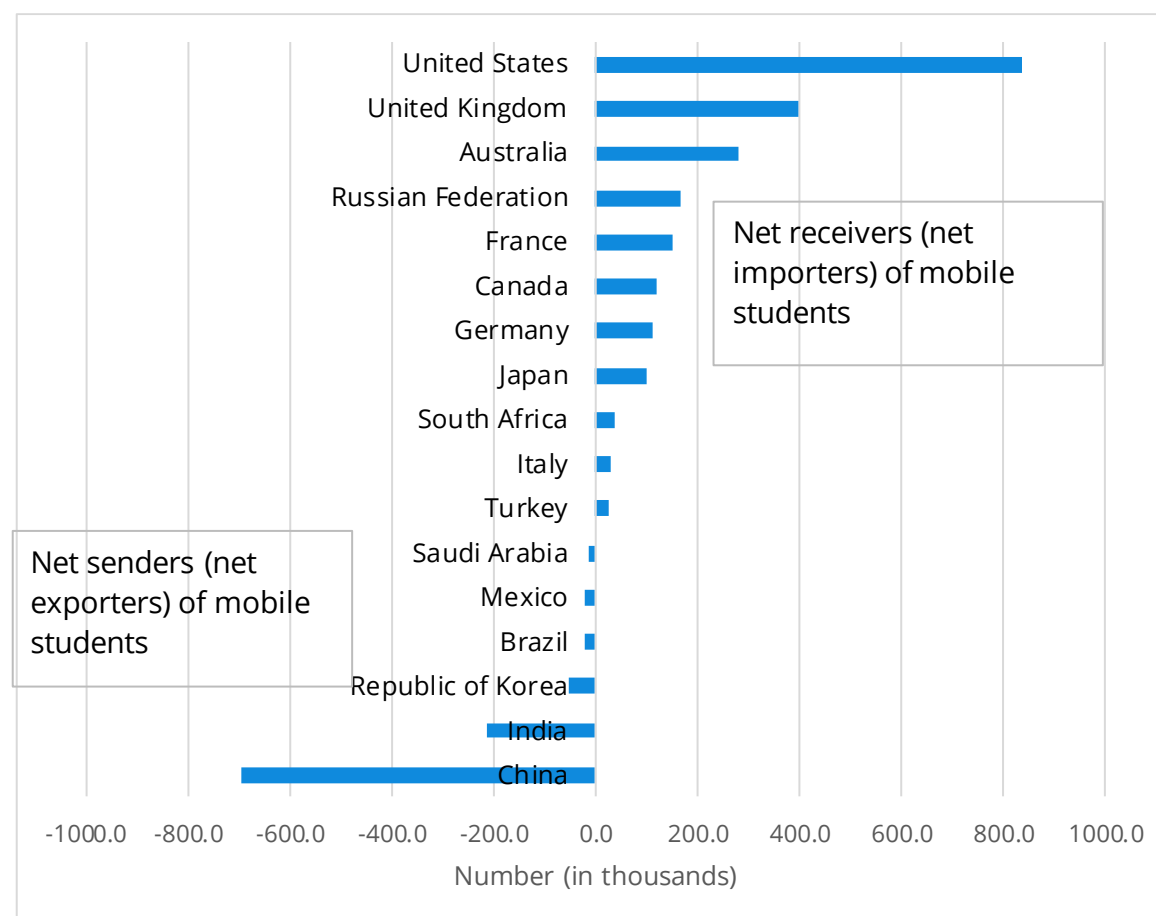
Source: UNESCO Institute for Statistics.

The analyses above refer to inflows or outflows of students into or from given countries; the difference between those two is net flow. The majority of countries (two-thirds) in the G20 are net receivers (or net importers) of internationally-mobile students, meaning that the number of mobile students coming to study in their countries is greater than the number of their students pursuing higher education abroad. These countries are shown on the top bars in **Figure 12** in descending order: United States, United Kingdom, Australia, Russia Federation, France, Canada, Germany, Japan, South Africa, Italy and Turkey.

On the other end of the spectrum, the net senders (or exporters) of mobile students include: China, India, Republic of Korea, Brazil, Mexico and Saudi Arabia. In these six countries, more students left their country to study abroad than the number of students from abroad coming to study in their country.



Figure 12. Net flow (inflows minus outflows) of mobile students by country, 2015



Note: Argentina and Indonesia are not presented due to a lack of data.

Source: UNESCO Institute for Statistics.

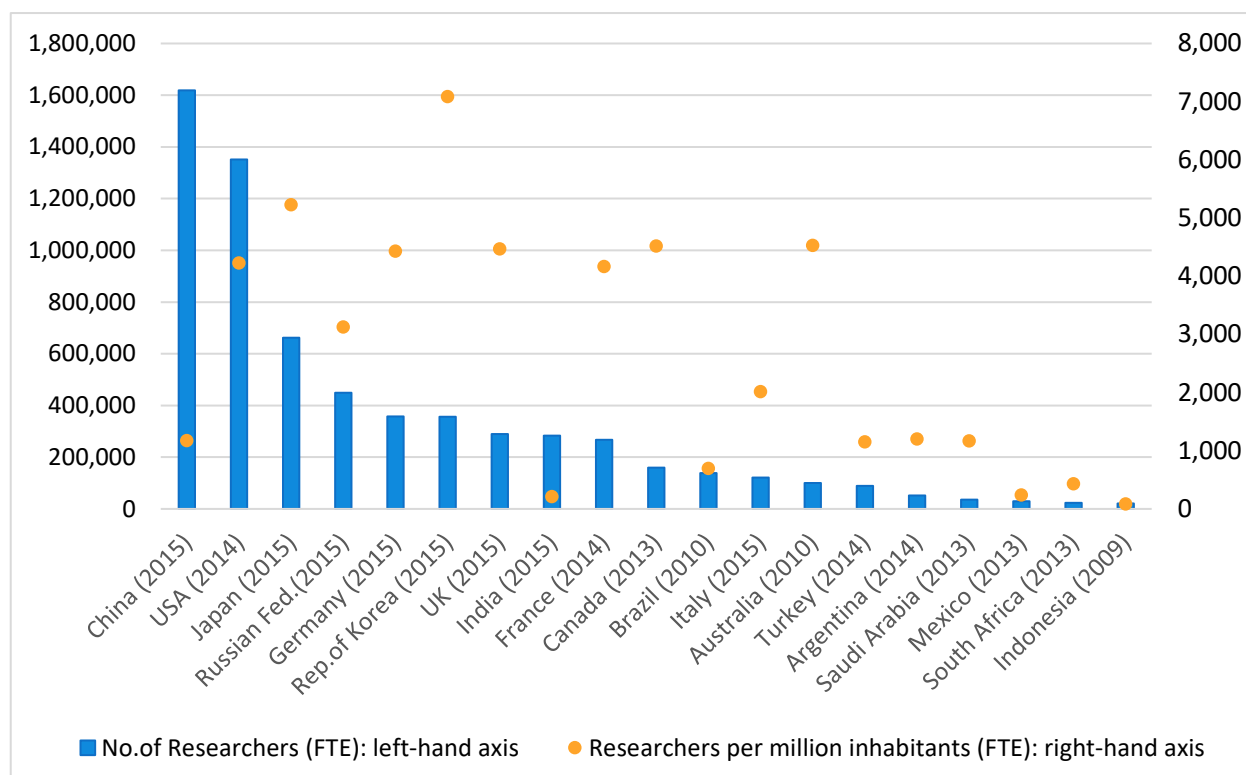
3. Researchers, R&D expenditure and innovation in G20 countries

In 2015, collectively there were almost 7.3 million researchers in G20³ countries, which accounted for around 86% of the world's researchers. Over the last 10 years, the number of researchers in the G20 has increased from 5.2 million to 7.3 million, representing an average annual growth rate of 3.5%. (During the same period, the number of researchers worldwide has increased from 5.9 million to 8.5 million). Almost one-half of the G20's researchers are based in three countries: China (1.6 million), the United States (1.3 million) and Japan (0.7 million) (see **Figure 13**).

³ The regional total/average for G20 countries also includes data for members of the European Union, not individually represented in the G20.



Figure 13. Researchers in G20 countries, 2015 or latest year available



Notes: Data are based on full-time equivalents (FTE) except for Saudi Arabia where data are presented in headcounts (HC).

Source: UNESCO Institute for Statistics, June 2017.

In relative terms, in G20 countries, the number of researchers per million inhabitants⁴ is 1,547, which is slightly above the world average of 1,151. This indicator ranges from as high as 7,087 researchers per million inhabitants in the Republic of Korea to less than 250 researchers per million inhabitants in Mexico, India and Indonesia (see Figure 13).

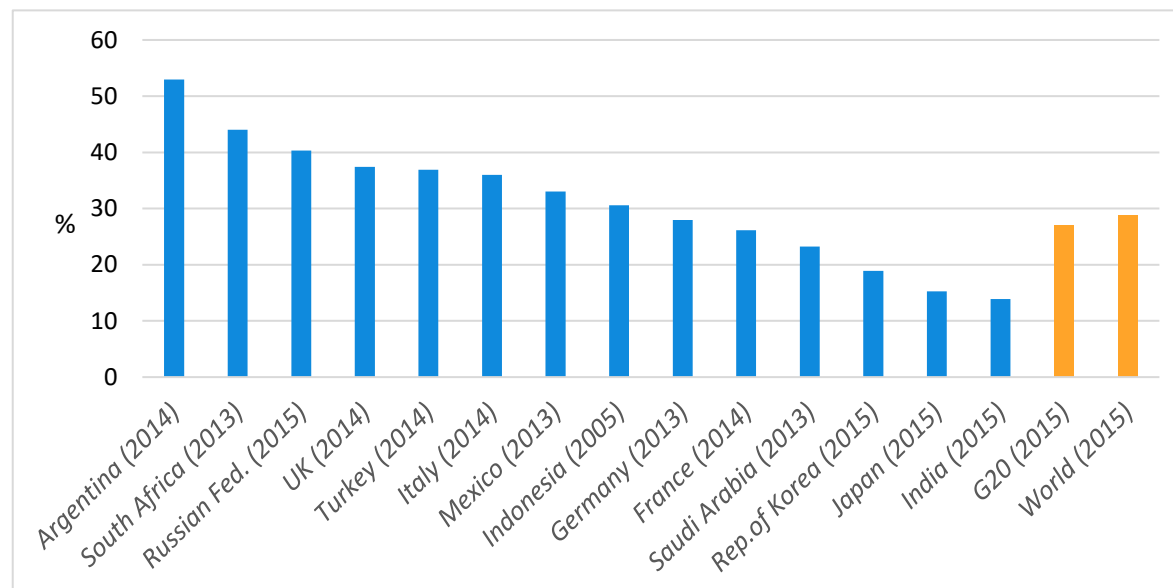
Female researchers

In G20 countries, women account for 27% of all researchers, which is slightly below the world average of 28.8% in 2015. There are wide variations in the share of women researchers at country level in the G20. Argentina and South Africa are the only countries which have achieved gender parity, whereby 45% to 55% of researchers are women (see Figure 14). However, for about one-half of the countries for which sex-disaggregated data are available, just over one-third of researchers were women. The lowest levels of representation can be seen in the Republic of Korea, Japan and India where women make up, on average, 19%, 15% and 14% of researchers respectively.

⁴ Researchers per million inhabitants is one of the indicators used to monitor SDG Target 9.5.



Figure 14. Female researchers as a percentage of total researchers in G20 countries, 2015 or latest year available



Notes: Data are based on headcounts (HC) except for India where data are presented in full-time equivalents (FTE).

Source: UNESCO Institute for Statistics, June 2017.

Expenditure on research and development (R&D)

The investments in research and development (R&D) in G20 countries stood at PPP US\$ 1.8 trillion, up from PPP US\$ 929 billion in 2005. This represented an average annual growth rate of 4.6%. G20 countries accounted for a massive portion (91% out of 1.9 trillion) of global R&D expenditure, maintaining a stable share over the last decade. In absolute terms, the top three R&D investors were the United States (US PPP\$503 billion), China (US PPP\$410 billion) and Japan (US PPP\$170 billion), which represented around 62% of the G20's total investment in R&D (see **Figure 15**).

In relative terms, R&D expenditure as a proportion of gross domestic product (GDP)⁵ has remained relatively constant in the G20, growing only modestly between 2005 and 2015, from 1.8% to 1.9% of GDP. At the global level, 1.7% of global GDP was devoted to R&D in 2015, up from 1.5% in 2005.

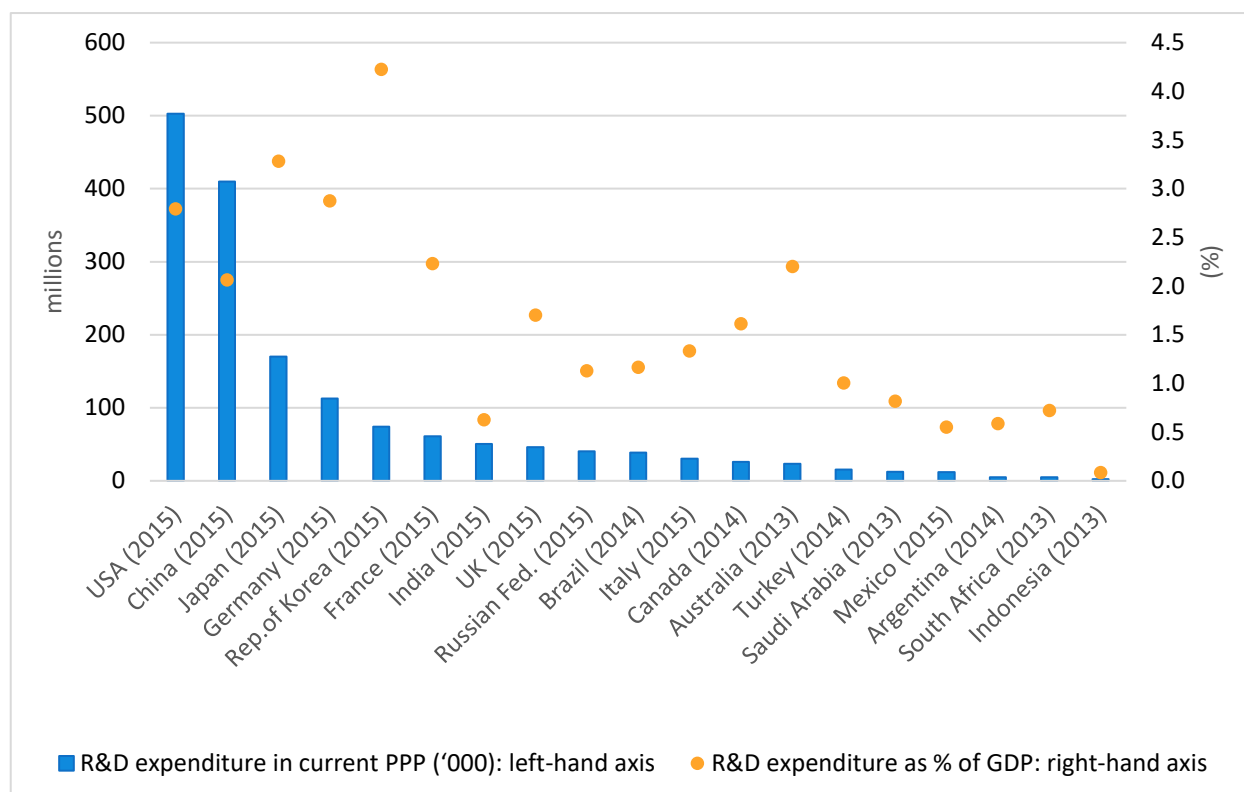
The highest R&D investor in the G20 in relative terms (R&D expenditure as a proportion of GDP) is the Republic of Korea (4.2%), followed by Japan (3.3%), Germany (2.9%) and the United States (2.8%). Most of the other G20 members spent more than 1% of their GDP on R&D, whereas Argentina, India, Mexico, Saudi Arabia, and South Africa spent around 0.6% to 0.8% (see **Figure 15**).

A large proportion of R&D expenditure goes towards the wages and salaries of researchers, which is why the figures for researchers follow a similar pattern.

⁵ R&D expenditure as a proportion of GDP is one of the other key indicators used to monitor SDG Target 9.5.



Figure 15. R&D expenditure in G20 countries, 2015 or latest year available



Source: UNESCO Institute for Statistics, June 2017.

Innovation

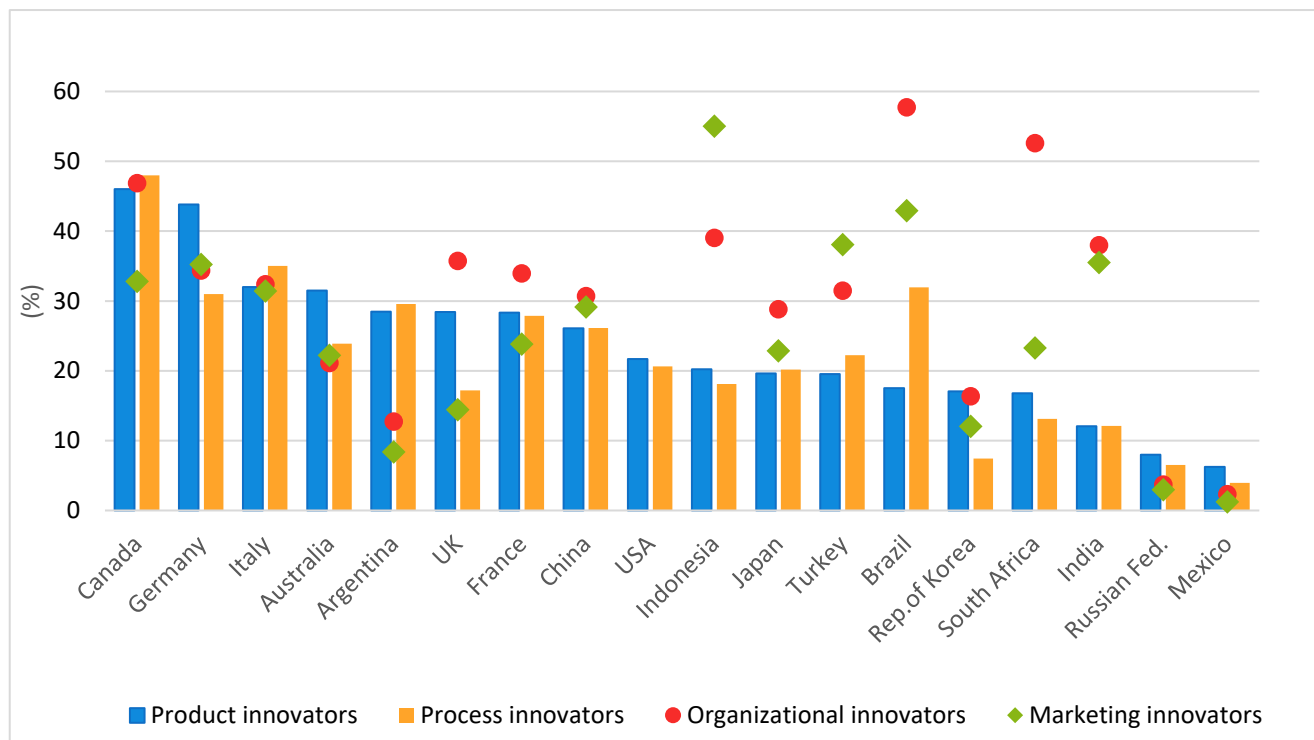
Innovation can greatly influence the rate and fashion in which new technologies are developed, adopted and diffused, in addition to their broader impact.

Types of innovators

Figure 16 presents the shares of manufacturing firms that implemented four types of innovation (product, process, organizational and marketing innovation) in G20 countries for which data are available through the 2015 UIS Innovation Survey. Product innovation has the highest share of innovators in six countries including Germany, where around 44% of manufacturing firms were product innovators, followed by Australia, United States, Republic of Korea, Russian Federation and Mexico. In seven countries, organizational innovation was the prevailing type of innovation that was implemented by most firms. This was observed, for instance, in Brazil and South Africa, where 58% and 53% of manufacturing firms respectively were organizational innovators. In Canada, around 48% of firms were process innovators and almost as many were organizational innovators (47%) and product innovators (46%). In Indonesia (55%) and Turkey (38%), marketing innovators prevailed as the highest share of innovators.



Figure 16. Innovators in G20 countries as a percentage of manufacturing firms



Source: UNESCO Institute for Statistics, April 2017.

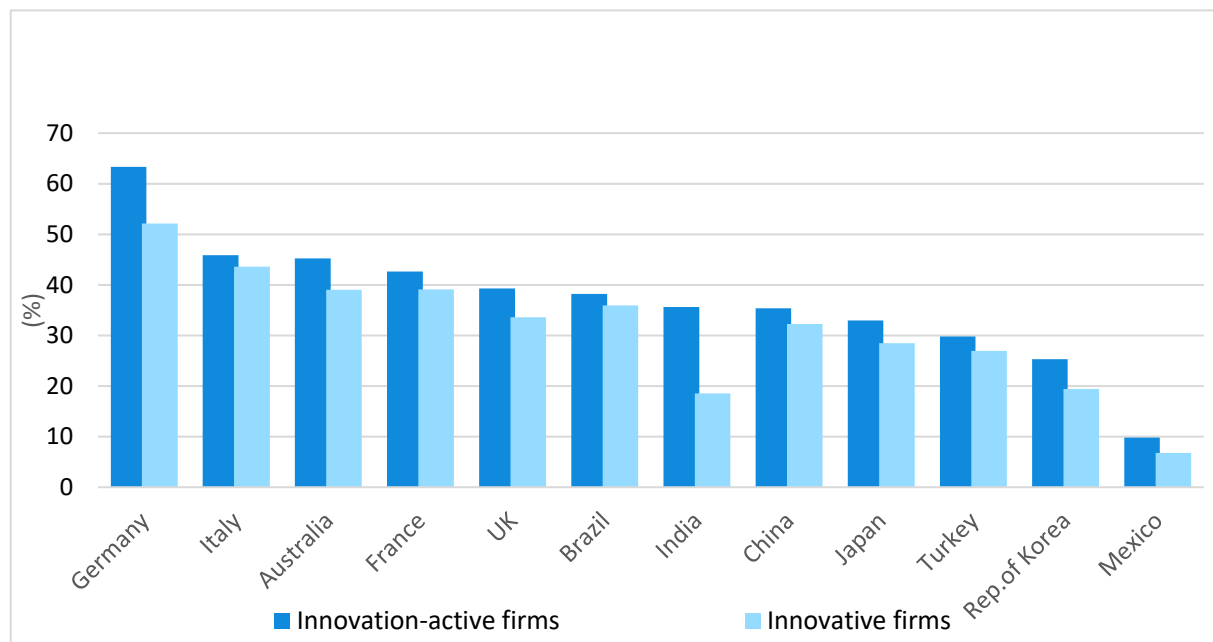
Innovation-active and innovative firms

Figure 17 presents the shares of product or process innovation-active and innovative firms⁶ in G20 countries for which data are available. In many countries, the percentage of firms engaging actively in innovation matches the share of innovative firms, except in Germany and India.

⁶ An innovative firm is one that has implemented an innovation during the period under review. An innovation-active firm is one that has had innovation activities during the period under review, including those with ongoing and abandoned activities.



Figure 17. Product or process innovation-active and innovative firms in G20 countries as a percentage of manufacturing firms



Note: The difference between the two bars (darker and lighter) represents the share of firms that only had abandoned or ongoing innovation activities.

Source: UNESCO Institute for Statistics, April 2017.

4. Policy implications

Basic skills: Access and learning crisis

The data signal a learning crisis that could threaten progress as development is reliant on having literate and numerate populations. The waste of human potential signaled by data confirms that getting children into classrooms is only half the battle. The international community must ensure that every child in school is learning and developing the skills they need for work and life.

UIS data suggest that the numbers are rooted in three common problems. First, a lack of access shows that children who are out of school have little or no chance to reach a minimum level of proficiency in reading and mathematics. Second, schools are failing to retain every child and keep them on track. Third, the quality of education and classroom practices are impacting learning. The numbers are staggering and they indicate the urgency with which these issues need to be addressed. More than two-thirds of children and youth not learning are actually in school.

These children and adolescents are not hidden or isolated from their governments and communities – they are sitting in classrooms with their own aspirations and potential. Reaching them requires more than hope: we must understand their needs and address the shortcomings of the education currently on offer. This will require commitment and resources, but also a new approach to improving the quality of education. Data



can help us to understand the needs and contribute to more effective and impactful national education policies.

Student mobility

Studying abroad as an alternative route to expand human capital

Studying abroad to enhance human capital for developing countries is referred to in SDG 4 on education. Target 4.b specifies that “By 2020, substantially expand globally the number of scholarships available to developing countries, in particular least-developed countries, small island developing States and African countries, for enrolment in higher education, including vocational training, information and communications technology, technical, engineering and scientific programmes in developed countries and other developing countries.”

Overall, the majority of students who study abroad are financed through private funding (e.g. households). Yet, several national governments are increasing sponsorship for their students to study abroad to grow national stocks of highly-skilled human capital. —This is effective particularly for countries that lack the capacity to accommodate rapidly-growing numbers of secondary school graduates transitioning to higher levels of education and countries that do not offer certain programmes or offer low-quality programmes (British Council and DAAD, 2014). Some governments provide scholarships for students to study science, technology, engineering and mathematics (STEM) in scientifically-advanced countries in order to keep up with the latest developments in science and technology.

Ensuring the quality of cross-border educational programmes and the recognition of higher education qualifications

The demand for various types of higher learning opportunities, both locally and abroad, is on the rise, and there are innovative approaches to supply these education programmes (e.g. online learning, foreign campuses, international joint degree programmes). To protect learners’ rights to receive quality education, quality assurance and accreditation systems are imperative and need strong normative and policy frameworks (UNESCO, 2018). In response, UNESCO and the Organisation for Economic Co-operation and Development (OECD) have jointly published a report, *UNESCO-OECD Guidelines for Quality Provision in Cross-Border Higher Education*, to safeguard against low-quality services.

In addition to quality assurance, it is necessary to ensure that cross-border education qualifications are recognised. As part of this response, UNESCO is developing a *Global Convention on the Recognition of Higher Education Qualifications* to further facilitate academic mobility, improve quality and enhance international cooperation in higher education (UNESCO, 2018).

However, guides and conventions from international organizations are not enough. It is critical that national governments, higher education institutions, private companies, staff and students (and their parents) work together to guard the quality of cross-border educational programmes.



Cross-border mobility not only contributes to national innovation capacity but also to international collaboration on global issues

Internationally-mobile students in science and technology fields account for about one-third of all mobile students. These students can be potential members or facilitators of ‘international knowledge networks’⁷, as mentioned in the *UNESCO Science Report 2030* (UNESCO, 2016). International knowledge networks are valuable in several ways, including gathering scientists across nations to deal with global issues. For instance, numerous international knowledge networks were formed during the Ebola virus outbreak in West Africa in 2014 to bring together health care professionals, researchers, governmental and non-governmental agencies, and international organizations to combat the fatal disease.

Cross-border mobility may not only be a private good (e.g. a prospect of a promising employment) but also a public good. Returned ex-patriates may contribute to the stock of highly-skilled human capital by bringing home advanced knowledge and skills acquired when they studied abroad. Moreover, they can serve as nodes of international knowledge networks to work with their fellows in other countries on global issues. Therefore, it is in the interest of governments and the international community to strategically promote cross-border mobility for the public good.

Research and innovation

In the field of research and innovation, the following principles are encouraged:

- ✓ Continue to strengthen scientific research and technological capabilities by fostering more financing for research and development (R&D), in particular through the business sector, and formulating policies on funding.
- ✓ Strengthen the quantity and quality of the of R&D workforce with the required skills for innovation.
- ✓ Promote gender equality in scientific research and innovation by increasing the participation of women and by designing and implementing relevant policies.
- ✓ Continue to strengthen business capabilities for innovation by establishing an enabling environment for innovation and strengthening public research and private industry linkages for innovation.

G20 intragroup collaboration

G20 countries are heterogeneous, hence, there is scope for cooperation in areas related to education and innovation and research, such as:

- ✓ G20 leaders should address the need for inclusion of all groups and foster collaboration to ensure access to education and lifelong learning for all. This implies generating platforms to share

⁷ ‘International knowledge networks’ refers to “a system of coordinated research, results dissemination and publication, intellectual exchange, and financing across national boundaries” (Parmar, 2002, p.13) Such networks can be informal or structured.



knowledge on policies and best practices, given that there are different experiences in meeting education needs in G20 countries.

- ✓ G20 leaders should encourage relevant international institutions and G20 countries to enhance their efforts to support the harmonisation of education systems, including the provision of equal access to higher education, recognition of qualifications and credit mobility. This includes financial aid for student mobility, for example scholarships.
- ✓ G20 leaders should encourage G20 education ministers to establish closer cooperation channels between education and labor ministers in each country and across countries.
- ✓ G20 leaders should also encourage education ministers to cooperate more closely with labour ministers to establish linkages between education and the labour market. G20 leaders should encourage intragroup collaboration with respect to research and innovation and the mobility of researchers, to ensure intragroup peer learning.



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