



Global report on teachers

Addressing teacher shortages

HIGHLIGHTS



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The Global Education 2030 Agenda

UNESCO, as the United Nations' specialized agency for education, is entrusted to lead and coordinate the Education 2030 Agenda, which is part of a global movement to eradicate poverty through 17 Sustainable Development Goals by 2030. Education, essential to achieve all of these goals, has its own dedicated Goal 4, which aims to *“ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.”* The Education 2030 Framework for Action provides guidance for the implementation of this ambitious goal and commitments.



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Cover graphic design: Aurélia Mazoyer

Caption: The photos from the front cover feature teachers from the 2023 UNESCO World Teachers' Day photo exhibition "The teachers we need for the education we want". From left to right: Rima Neo Maria Sifudi (South Africa), Priscilia Farinango (Ecuador), Punleu Be (Cambodia), Yuli Collazos Peñag (Colombia), Mo'men Youssef (Egypt), Pogorelov Oleksandr Mykaloiovykh (Ukraine).

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Key messages

1. Globally, 44 million additional primary and secondary teachers are needed to meet Sustainable Development Goal (SDG) 4 — the attainment of quality education for all by 2030. Teacher shortages affect both developed and developing countries. Most of these teachers (7 out of 10) are required at the secondary level, and over half of those needed are required to replace existing teachers leaving the workforce.
2. The challenge of teacher shortages is complex, influenced by an interplay of factors such as motivation, recruitment, retention, training, working conditions, and social status. Holistic and systemic approaches are needed to address the challenge effectively.
3. Teacher shortages have far-reaching consequences, including increased teacher workloads and diminished well-being, discouragement of future educators, perpetuation of educational inequalities, and increased financial burdens on educational systems.
4. Teacher attrition is also a global concern: between 2015 and 2022, attrition rates of primary education teachers doubled around the world from 4.6 to 9 per cent. Regardless of the country income level, and even remuneration, teachers are leaving the profession within the first five years of practice.
5. Strategies to reverse teacher shortages need to address recruitment, attractiveness, and retention. Attractive career pathways with equitable access to professional development are vital to retain teachers and keep them motivated throughout their professional life.
6. Inclusive policies are needed to promote gender equality in the teaching profession, address underrepresentation of women in certain subjects, levels and leadership roles and encourage men to enter and remain in teaching. Teaching workforces should reflect the diversity of the communities they serve, thus enhancing attractiveness and enriching learning experiences.
7. Improving teacher working conditions is key to enhancing the supply of quality teachers, this includes involving them in decision-making and providing a collaborative school culture characterized by mutual support.
8. Adequate domestic expenditure on education plays a crucial role in financing education, particularly ensuring that teacher salaries are competitive. Investing in novice teachers can be a cost-effective long-term strategy to address teacher attrition.

I. Introduction

Teachers have an essential role in supporting the right to education and are central to the achievement of all SDGs, especially SDG4. In fact, teachers are the most important school-related factor affecting student learning (Chetty et al., 2014; Rivkin et al., 2005). To achieve quality education for all, every child must therefore have access to a qualified teacher.

Set against this backdrop, the *Global report on teachers* aims to support the international community in monitoring and making progress towards its commitment to ensure that teachers and educators are empowered, adequately recruited, well-trained, professionally qualified, motivated, and supported within well-resourced, efficient, and effectively governed systems. Expected to be released during the first quarter of 2024 and biennially in the future, the report will present knowledge and analysis to advance evidence-informed policy-making that will ensure that all children have access to quality learning opportunities, and that will influence policy and practice related to teachers and teaching.

The report will be grounded in the international normative framework for teachers and the teaching profession. This includes the 1960 Convention against Discrimination in Education, and the 1966 and 1997 Recommendations Concerning the Status of Teachers. A human-rights-based approach to education and teaching will be the basis for the analysis and recommendations.

The transformative role of teachers in shaping the future of education, emphasized by the International Commission on the Futures of Education (2021), highlights four main issues to be addressed in order to reimagine teaching and the teaching profession: recasting teaching as a collaborative profession; recognizing professional development as a lifelong learning journey; mobilizing public solidarity to improve teachers' working conditions and their status; and promoting teachers' engagement in decision-making and public debate on education, providing them with the necessary support and autonomy. In line with this, the Transforming Education Summit (TES) recognized that the education workforce must be professionalized, trained, motivated,

and supported, so teachers can transform themselves and become agents of change (United Nations, 2022b).

The national statements of commitment coming out of the TES acknowledged the central role of teachers, educators, and other teaching personnel. Out of 131 national statements of commitment submitted by the time of the TES, most countries (94 per cent) highlighted pre- and in-service training and professional development of teachers as a key determinant to improving the quality of learning. Fewer countries mentioned, however, improving working conditions and social status of teachers (32 per cent) and addressing teacher shortages (23 per cent), and even fewer addressed the regularization of contract teachers and the professional needs of the invisible unappointed teacher workforce that often serves the poorest or most marginalized learners (2 per cent). Brazil, Croatia, France, and Latvia are among the one-third of the countries that committed to salary increases,¹ while Egypt committed to appointing 150,000 new teachers in the coming five years to address teacher shortage.

To build on the outcomes of TES and ensure that every learner has access to a professionally trained, qualified, and well-supported teacher who can thrive within a transformed education system, the Secretary-General of the UN convened a **High-Level Panel on the Teaching Profession (HLP)** in 2023 comprising ministries of education, teachers, students, unions, civil society, employers, international and regional organizations and academia, with the aim of producing evidence-based recommendations, which will be recollected in the Global Report.

This first *Global report on teachers* will fill a knowledge gap. Currently, there is no dedicated report that systematically captures and presents global, regional, and national data on teachers, nor country-level policies and programmes and international initiatives. The Report will leverage new data and case studies to shed light on the progress towards target 4.c of SDG4, which aims to, "By 2030, substantially increase the supply of qualified teachers, including through international cooperation for teacher training in developing countries, especially least developed countries and small island developing states" (UNESCO, 2016a). This Report will therefore fill a

¹ The four countries' commitments: Brazil for 33 per cent increase for basic education teachers in 2022, Croatia which has increased teachers' salaries cumulatively since 2017 by 27 per cent, France for 10 per cent increase for basic education teachers in 2023, and Latvia for 11 per cent and 8.4 per cent increase of lowest wages, respectively for pre-primary (40 hours work/week) and primary teachers (30 hours work/week). (United Nations, 2023)

gap in public knowledge, fulfilling UNESCO's mandate to lead and coordinate the 2030 education Agenda by monitoring progress towards education targets. The Report will complement the Global Education Monitoring Report's efforts towards an in-depth analysis of target 4.c, and other teacher issues.

The *Global report on teachers* is timely, as we are halfway to 2030. It will allow for monitoring progress towards SDG4 commitments, particularly target 4.c, and to accelerate the pace for their achievement. There can be as many as five or six years between governments committing to increasing teacher recruitment and the resulting impact of additional teachers, making early initiatives crucial to achieving these commitments.

This *Global report on teachers* will also adopt a thematic approach enhancing its action-oriented focus for greater impact as an advocacy tool to highlight key issues on teachers and advocate for greater teacher support. The theme of this first Global Report is teacher shortages. Having a qualified and motivated teacher in every classroom has a major impact on learning outcomes. Nevertheless, teacher shortages remain a pressing issue, with countries worldwide striving to meet the SDG-4 target, regardless of their income level.

In this framework, **the *Global report on teachers 2024* will inform and aim to influence policy-makers and relevant stakeholders in the development and implementation of best practices which provide solutions to challenges hindering the availability of qualified teachers, in terms of both quantity and quality.** This is key, as although shortages are widespread, some regions face more severe needs. This is the case in sub-Saharan Africa, where there has been a rapid increase in the school-age population in recent years, or Southern Asia, which has made strong progress, but still requires more teachers. The availability of qualified teachers may be intertwined with social inequality. Often, qualified teachers are distributed unevenly both between and within countries, to the extent that in some cases, a shortage of teachers can coexist with a surplus of them. Thus, this report will highlight the different causes and contexts of shortages.

For instance, while in some regions teacher shortages are mostly due to population growth, others face shortages mainly due to teachers leaving the profession. **The COVID-19 pandemic has had long-lasting effects on the availability of teachers**, but while there are indications of worsening working conditions and shortages, some data show mixed results (Ramírez et al., forthcoming) and the full impact on shortages has yet to be properly understood. Strengthening our understanding of how COVID-19 affected teacher shortages, including in educational crises and emergency scenarios, is critical to effectively prepare and support a resilient teacher workforce.

Teacher shortages are more pronounced in contexts affected by conflict, environmental crises and forced displacement. In addition to the expected roles associated with providing education, teachers are charged with numerous expanded roles, such as fostering a sense of belonging and psychosocial well-being among displaced and traumatized pupils (Falk et al., 2022; UNHCR, 2017). Yet, an overlooked fact is that most teachers in crisis contexts are also survivors of violence, experience their displacement, and contend with a similar array of well-being challenges as the pupils they teach (Adelman, 2019; Mendenhall et al. 2019).

The impacts of shortages are manifold. They include, among others, the fact that teacher shortages are costly, they have an impact on workloads, they may deter future generations from becoming teachers, which creates a cycle of low-quality education, disadvantaging students throughout life and reproducing and perpetuating educational inequalities.

Due to the multifaceted and complex nature of teacher shortages, addressing this challenge requires a systemic and holistic approach, guided by a strong vision of what the teaching profession should be. Among other factors, the Global Report will address the role of social dialogue and teacher collaboration as key levers to recast the teaching profession, and the role of teachers at the centre of a new social contract for education.



Due to the multifaceted and complex nature of teacher shortages, addressing this challenge requires a systemic and holistic approach, guided by a strong vision of what the teaching profession should be.

II. Teacher shortages: A state of the art

To monitor global progress towards target 4.c, internationally comparable indicators were identified to measure both the quantity and quality of teachers and teaching. Among those indicators that governments were called to report on and increase are the percentage of teachers with the minimum required qualifications by educational level; the percentage of teachers who received in-service training in the last 12 months by type of training; and the average teacher salary relative to other professions requiring a comparable level of qualifications. Governments were also asked to decrease pupil–trained teacher ratios and teacher attrition rates.

However, measuring teacher shortages is neither a straightforward nor a uniform process across contexts.

There is a lack of research on how teacher shortages are measured, how they have been addressed in the past and to what effect (Behrstock-Sherratt, 2016). Further, improving data availability and its quality are part of the enormous task of addressing teacher shortages.

The current projection of an increased teacher workforce for each country is grounded in the methodology developed by the UNESCO Institute for Statistics (UIS 2009)².

Based on this projection, progress has been made to recruit the required number of teachers to achieve universal primary and secondary education, yet there remains a projected teacher shortage of 44 million teachers by 2030, down from 69 million in 2016 (UIS, 2016). The largest need is in sub-Saharan Africa, followed by Southern Asia and Europe and Northern America (see Table 1). Furthermore, the number of teachers needed for replacements of those leaving the workforce accounts for a substantial 58 per cent, while the remaining 42 per cent is attributed to new teaching positions.

Teacher shortages are a global phenomenon, affecting countries at different income levels alike. In sub-Saharan Africa 15 million additional teachers are needed, a shortage mostly due to a rapidly expanding school-aged population, coupled with financial constraints. **Northern Africa and Western Asia** and **South-Eastern Asia** also face challenges in achieving teacher recruitment targets: 4.3 million and 4.5 million additional teachers are needed

across those regions, respectively. The current teacher recruitment targets in these two regions, standing at approximately 70 per cent of the 2016 objectives, make it seem unlikely that these targets will be achieved by 2030. Achieving the target in sub-Saharan Africa is even less likely since the current target stands at 88 per cent of the 2016 objectives.

Projections for **Eastern Asia** (3.3 million) and **Southern Asia** (7.8 million) are about half the share of the 2016 targets, suggesting that for these two regions, targets are more achievable by 2030. However, further efforts are needed to recruit teachers, particularly in Southern Asia where the reduction in need can be attributed to both an increase in teacher recruitment efforts as well as a decrease in the number of students expected, based on declining birth rates (Arora, 2021; Bora et al., 2023; UN DESA, 2022; Pearce, 2021).

Europe and Northern America, where fertility rates are low, show the third largest number of teachers needed: 4.8 million. Notably, most of the additional teachers required in this region, about 4.5 million, are due to staff attrition.

Latin America and the Caribbean also face challenges in achieving target 4.c, as 3.2 million teachers are needed for universal education by 2030, most of them due to staff attrition (2.8 million). The present teacher recruitment objective in this region, set at approximately 60 per cent of the targets established in 2016, suggests the need for renewed efforts to make the targets for 2030 more achievable.

Lastly, **Oceania and Central Asia** with 0.3 and 0.7 million, respectively, are the two regions with the relatively lowest need of teachers to meet universal primary and secondary education by 2030. In both cases, most of the additional teachers are required due to staff attrition.

Globally, most of the required teachers are needed to achieve universal secondary education by 2030. Projections show that 13 million primary teachers and 31 million secondary teachers are needed, meaning that about 7 out of 10 recruits globally are required for secondary education (UNESCO and Teacher Task Force, 2023a) (see Table 1).

2 Key assumptions for this estimation encompass the utilization of baseline teacher data from the UIS database, the attainment of universal primary and secondary enrollment and completion, the reduction of repetition rates (with a cap at 10 per cent for rates exceeding this threshold), the maintenance or improvement of pupil–teacher ratios (specifically adhering to minimum standards of 40:1 for primary and 25:1 for secondary education), the consideration of population growth projections provided by the United Nations Population Division, and the calculation of teacher attrition based on a decade's worth of UIS data (with missing data imputed at 5 per cent).

Table 1. Total number of additional primary and secondary teachers needed by region for 2030 (in thousands)**a. Primary**

Primary education teachers needed by region (in thousands)				
Region	Teachers 2022	Recruitment targets for 2030 by need		Total additional recruitment needed by 2030
		Replacing staff attrition	New teaching posts	
Central Asia	302	42	54	96
Eastern Asia	7,417	163	17	179
Europe and Northern America	4,862	1,689	25	1,714
Latin America and the Caribbean	3,071	979	30	1,009
Northern Africa and Western Asia	2,849	868	365	1,233
Oceania	199	114	10	123
South-Eastern Asia	3,682	2,945	104	3,050
Southern Asia	6,428	664	397	1,061
Sub-Saharan Africa	4,931	2,447	1,944	4,391
Total	33,741	9,911	2,946	12,857

b. Secondary

Secondary education teachers needed by region (in thousands)				
Region	Teachers 2022	Recruitment targets for 2030 by need		Total additional recruitment needed by 2030
		Replacing staff attrition	New teaching posts	
Central Asia	904	362	289	651
Eastern Asia	8,082	2,089	1,011	3,101
Europe and Northern America	7,775	2,830	285	3,115
Latin America and the Caribbean	4,126	1,867	331	2,198
Northern Africa and Western Asia	3,348	1,638	1,386	3,024
Oceania	m	82	69	152
South-Eastern Asia	3,075	1,070	420	1,490
Southern Asia	8,554	2,399	4,317	6,716
Sub-Saharan Africa	3,528	3,191	7,467	10,658
Total	39,392	15,531	15,574	31,105

Source: UIS, 2023c and UNESCO and Teacher Task Force, 2023a. Adapted from Ramírez et al., forthcoming. Date of database consultation: 11 October 2023.

Note: m = missing data

Only a few countries are on track to achieve the required teacher numbers by 2030. Based on the historical annual growth rate, it is anticipated that 78 out of 197 countries will achieve the required quantity of teachers to ensure universal primary education. Eastern Asia has the highest proportion of countries meeting this criterion (6 out of 7), while sub-Saharan Africa has the lowest with only 9 out of 46 countries meeting the target by 2030 (see Figure 1).

At secondary level, even fewer countries are expected to meet teacher recruitment targets in all regions, specifically, only 30 out of 187. In Europe and Northern America, merely 11 out of 44 countries will meet the target. Most significantly, only 2 out of 15 countries in Oceania, 2 out of 16 in Northern Africa and Western Asia, and just 4 out of 44 countries in sub-Saharan Africa are expected to achieve the target by 2030 (see Figure 1). Nonetheless, these are distinct regions, each grappling with unique challenges. For instance, in sub-Saharan Africa, this projection primarily stems from resource

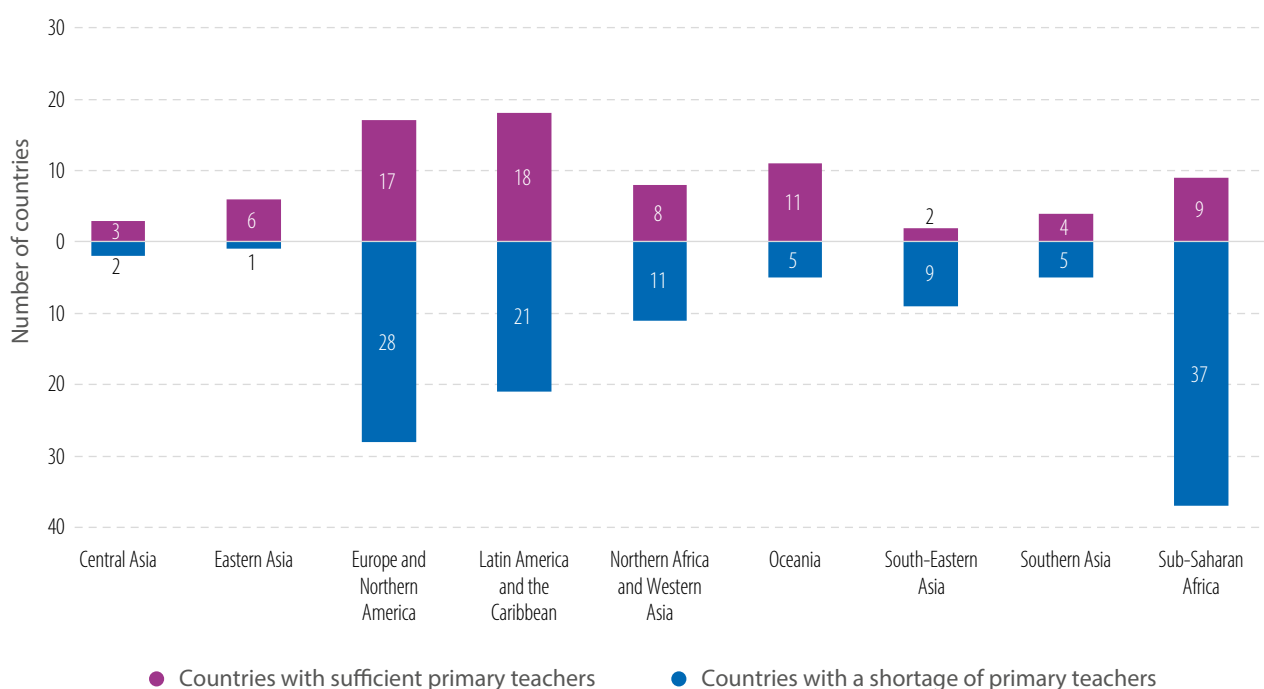
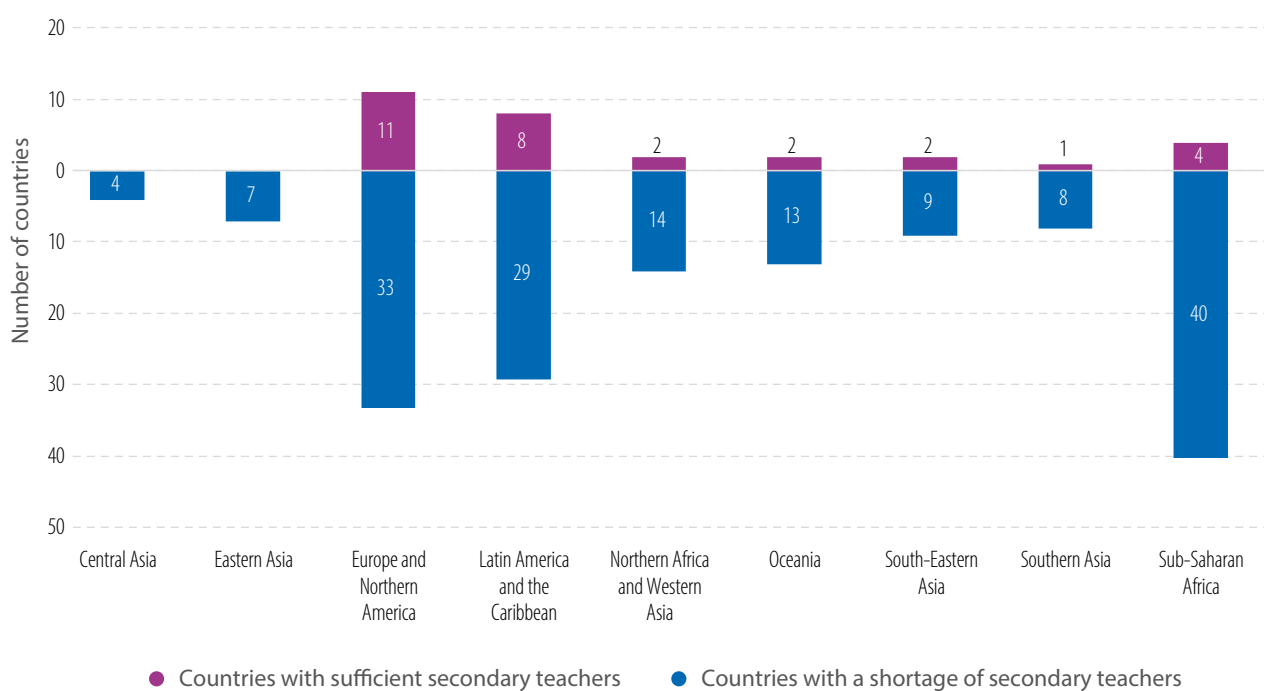
constraints in expanding the educational system, while in Europe and Northern America it is predominantly linked to higher attrition rates and the lack of competitiveness of the teaching profession.

While teacher shortages are a widespread challenge, there are reasons for optimism in certain contexts.

Countries from a diverse set of regions, including Micronesia, Kenya, Congo, Fiji, Ireland, Nauru, China, Tokelau, and Anguilla are projected to best meet the demand for primary teachers by 2030 if the historical growth remains at the same level, either by steadily augmenting the size of the teacher workforce or due to a combination of strong recruitment and a decrease in the school-age population (Ramírez, Mackintosh and Atherton, forthcoming). As for secondary teachers, countries projected to best meet the demand by 2030 are, once again, Kenya, with an annual rate of 29 per cent growth, followed by Montserrat, United Arab Emirates, Central African Republic, Congo, Gambia, Dominican Republic, Philippines, and Myanmar (ibid.).



By 2030, 78 out of 197 countries will achieve the required quantity of teachers to ensure universal primary education.

Figure 1. Number of countries which are expected to fill the teacher gap for primary and secondary education by 2030, based on current trends**a. Primary****b. Secondary**

Source: UIS, 2023c and UNESCO and Teacher Task Force, 2023a. Adapted from Ramírez, Mackintosh and Atherton, forthcoming. Date of database consultation: 11 October 2023.

As teacher vacancy needs differ by region, tailored approaches to attract and retain teachers should be adopted. In contexts with rapidly growing populations such as sub-Saharan Africa, where the demand for new teaching positions is high, a balance is needed between expanding available spots in training institutions — ensuring that new recruits are appropriately trained and

qualified — and making the profession more attractive to ensure retention. Conversely, in regions like Europe and Northern America, as well as Latin America and the Caribbean, where attrition is the main cause of the gap, greater focus in professionalizing teaching is needed to attract and retain quality candidates.

More qualified teachers are needed

Teachers play a key role in ensuring the quality of education provided. All teachers should receive adequate, appropriate and relevant pedagogical training to teach at the chosen level of education and be academically well-qualified in the subjects they are expected to teach (UIS, 2018; 2023d). However, there is considerable variation in how different education systems define and operationalize the concept of a qualified teacher, making international comparisons and benchmarking challenging.

Overall, there is a lack of data on qualified teachers, especially for certain educational levels and for some regions. However, the worldwide average remains steady across various educational levels, standing at approximately 85 per cent.

At the **pre-primary level**, sub-Saharan Africa, Latin America and the Caribbean, and Small Island Developing States (SIDS) have less than 75 per cent of qualified teachers. Data on trained pre-primary teachers in sub-Saharan Africa and SIDS show gradual improvement, increasing from 54 and 60 per cent in 2012, to 61 and 73 per cent in 2020, respectively (see Figure 2).

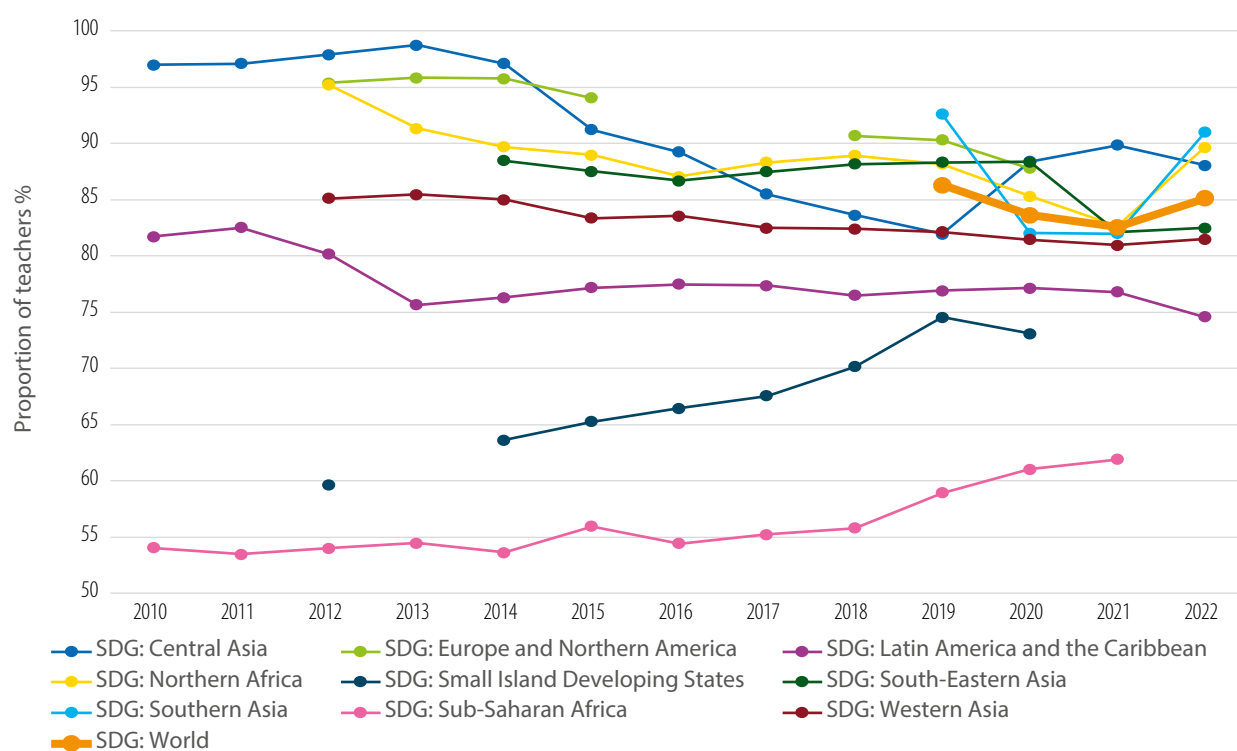
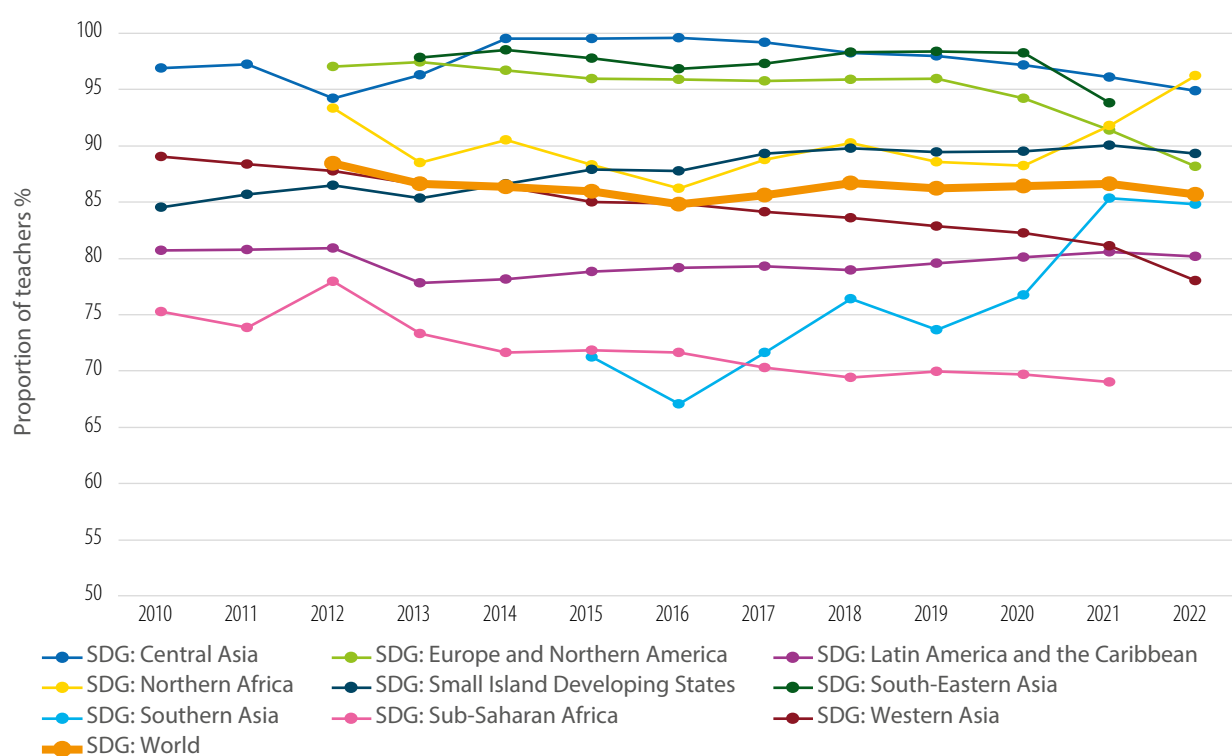
At the **primary level**, except for Western Asia (78 per cent) and Southern Asia (85 per cent), most regions show higher percentages of qualified teachers compared to the pre-primary level. Furthermore, 86 per cent of primary

teachers worldwide possess the minimum required qualifications. Nevertheless, this percentage significantly decreases to only 69 per cent in the case of sub-Saharan Africa, marking a decline since 2010 when it was at 75 per cent. South-Eastern Asia had almost all primary teachers meeting minimum requirements (98 per cent) in 2020, declining to 94 per cent in 2021. In Central Asia and Northern Africa the vast majority of primary teachers meet the requirements, with figures of 95 and 96 per cent, respectively. Notably, SIDS have made efforts to raise the levels of qualification among primary teachers, increasing rates from 85 in 2010 to 89 per cent in 2022.

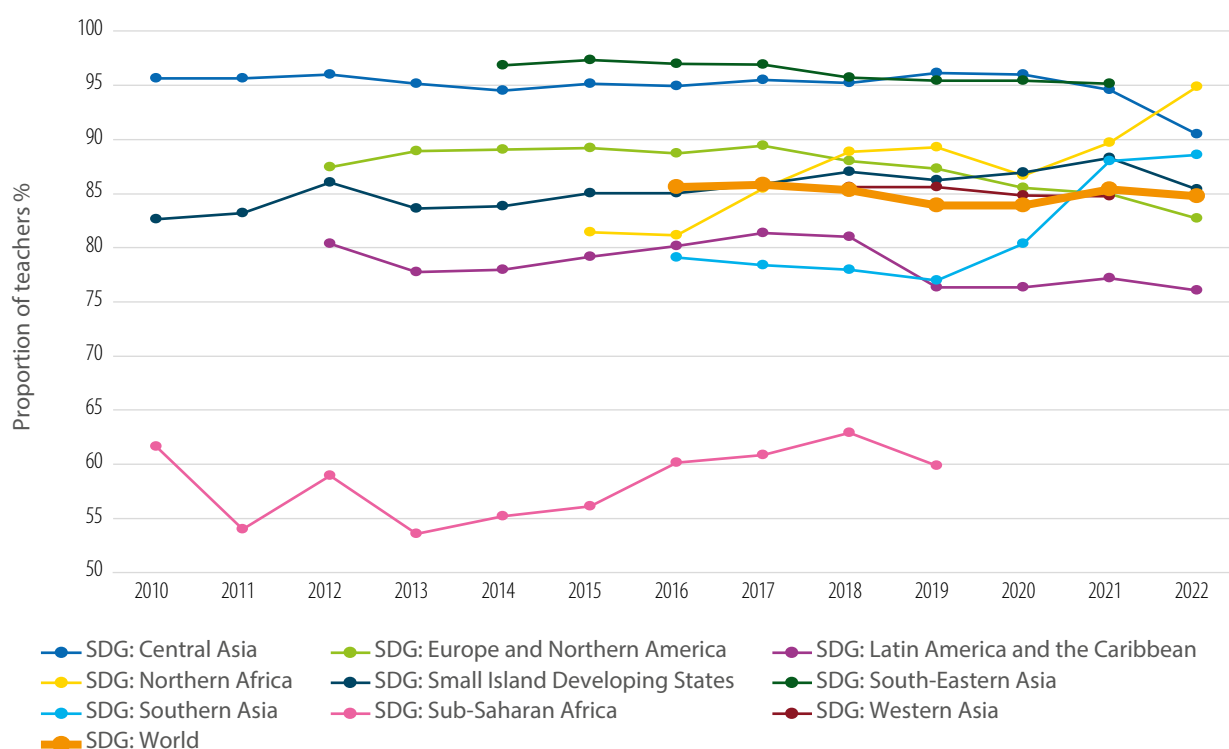
Globally, 85 per cent of **secondary teachers** have the minimum required qualifications, ranging between about 80 and 90 per cent in most regions. Sub-Saharan Africa lags at just over 60 per cent. In most regions, the percentage of qualified secondary teachers is less compared to primary education. The proportion in Latin America and the Caribbean has dropped from 80 in 2012 to 76 per cent in 2022, while Europe and Northern America have seen a decrease from 89 per cent in 2017 to 83 per cent in 2022. In both South-Eastern Asia and Northern Africa there is a notable achievement, with most secondary teachers meeting qualification requirements, reaching 95 per cent. Notably, from 2020 to 2022, Southern Asia has made large gains increasing from 80 to 89 per cent, while in Northern Africa substantial progress has also been made, from 81 to 95 per cent between 2015 and 2022.



Globally, 85 per cent of secondary teachers have the minimum required qualifications, and, in most regions, this represents about 80-90 per cent of teachers. Sub-Saharan Africa lags at just over 60 per cent.

Figure 2. The proportion of teachers in pre-primary, primary and secondary education with minimum required qualifications, 2010-2022**a. Pre-primary****b. Primary**

c. Secondary



Source: UIS, 2023c and UNESCO and Teacher Task Force, 2023a. Indicator 4.c.1. Adapted from Connolly and García-Chinas, forthcoming. Date of database consultation: 27 September 2023.

Regional trends can hide wide disparities among countries. While in some sub-Saharan African countries over 90 per cent of **pre-primary teachers** meet the minimum required qualifications, such as Cote d'Ivoire, Mauritius and Niger; in 11 other countries, less than 50 per cent do. The trend is also evident in the Latin America

and Caribbean region, where less than 50 per cent of **secondary teachers** are trained in six countries, whereas more than 80 per cent meet the minimum required qualifications in 13 countries, including Jamaica, Cuba and the Dominican Republic where about 100 per cent meet the minimum required qualifications.

Crowded classrooms have a negative impact on quality and working conditions

Crowded classrooms may be indicative of teacher shortages, with more pronounced shortages associated with higher pupil-teacher ratios. In this regard, there are large differences between countries and also between regions.

Globally, pupil-teacher ratios, or the number of students per teacher, have generally declined since 2000 (UIS, 2023a). Moreover there are large disparities between regions and countries of different income groups (see Table 2). High pupil-teacher ratios resulting in overcrowded classrooms is particularly a problem in low-income countries compared to their high-income counterparts.

Pupil-trained teacher ratios (PTTR), which measure the ratio of students to only the teachers that hold the minimum required qualifications, are substantially higher in low-income countries, mostly due to the lower proportion of trained teachers. For this reason, the PTTR is less of an indicator measuring class size and more of an indicator measuring how thinly qualified teachers are stretched as a resource. In **primary education**, high-income countries had an average pupil-trained teacher ratio of 15:1, while low-income countries faced a considerably higher ratio, tripling that number at 52 pupils per trained teacher in 2022 (see Table 2 and Figure 3). When analyzing this indicator by regions, sub-Saharan Africa exhibits the highest pupil-trained teacher ratio at 56:1, followed by Central and Southern Asia at 35:1 in 2022. In contrast, Europe and Northern America have

the lowest pupil–trained teacher ratio, with an average of 16 pupils per trained teacher in 2022.

Less data on **pre-primary education** hinders efforts to present all regional trends (e.g., Central and Southern Asia) and a global trend. With the exception of sub-Saharan Africa, where the pre-primary pupil–trained teacher ratio stood at 54:1 in 2022, most regions maintain pupil–trained teacher ratios for pre-primary education below 30:1.

Global regional averages in **secondary education** are generally below 25 pupils per trained teacher, except for sub-Saharan Africa. Both sub-Saharan Africa and Central and Southern Asia have exhibited higher pupil–trained teacher ratios, although they have also achieved notable improvements in recent years. For example, in sub-Saharan Africa the ratio has decreased from 40 in 2013 to 34 pupils per trained teacher in 2019. Likewise, a decline is observed from 35 in 2016 to 25 pupils per trained teacher in 2022 in Southern Asia.

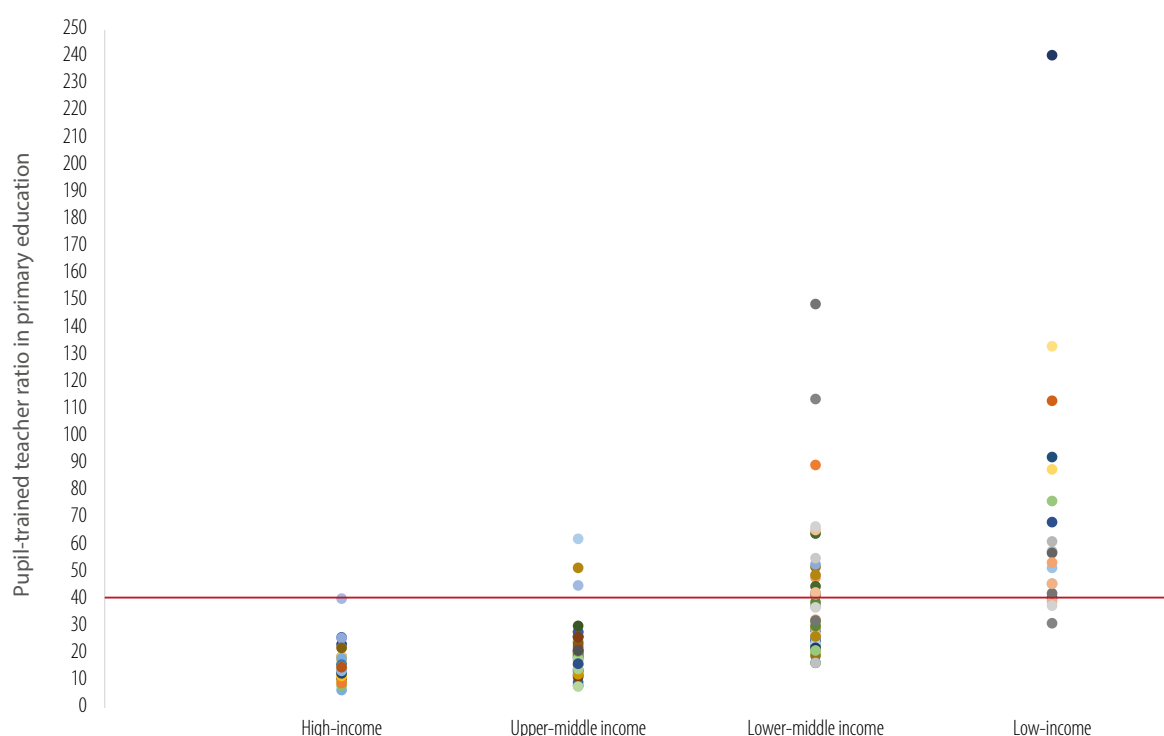
Table 2. Pupil–teacher ratio in primary education by region and income level, 2022

Region	Pupil–teacher ratio	Pupil–trained teacher ratio
Sub-Saharan Africa	38.4	55.7
Central and Southern Asia	29.8	34.9
Oceania	22.0	m
Latin America and the Caribbean	20.1	25.0
Northern Africa and Western Asia	20.0	24.5
Eastern and South-Eastern Asia	16.9	m
Europe and Northern America	13.7	15.5
Low-income	37.8	52.5
Lower-middle-income	30.2	36.4
Upper-middle-income	17.3	m
High-income	13.5	15.1
World	22.8	26.7

Source: UIS, 2023c and UNESCO and Teacher Task Force, 2023a. Pupil–teacher ratio adapted from UIS, 2023a. Date of database consultation: 17 October 2023.
Note: m = missing data.



Globally, pupil–teacher ratios, or the number of students per teacher, have generally declined since 2000.

Figure 3. Pupil–trained teacher ratio in primary education by country income groups, 2022 or latest data available

Source: UIS, 2023c. Adapted from UIS, 2023a.

Note: Each data point corresponds to a country. The red line shows the benchmark for the pupil–trained teacher ratio. Date of database consultation: 05 October 2023

Teacher salaries remain unattractive

One of the main goals of analysing and understanding teacher salaries is intended to explore the competitiveness of the profession to attract and retain teachers over time as well as the inequalities teachers face regarding earning liveable wages.

Teacher salaries vary greatly with respect to other professions across all educational levels. In some countries, teachers earn double their counterparts while in others, they earn much lower salaries. Notably, there

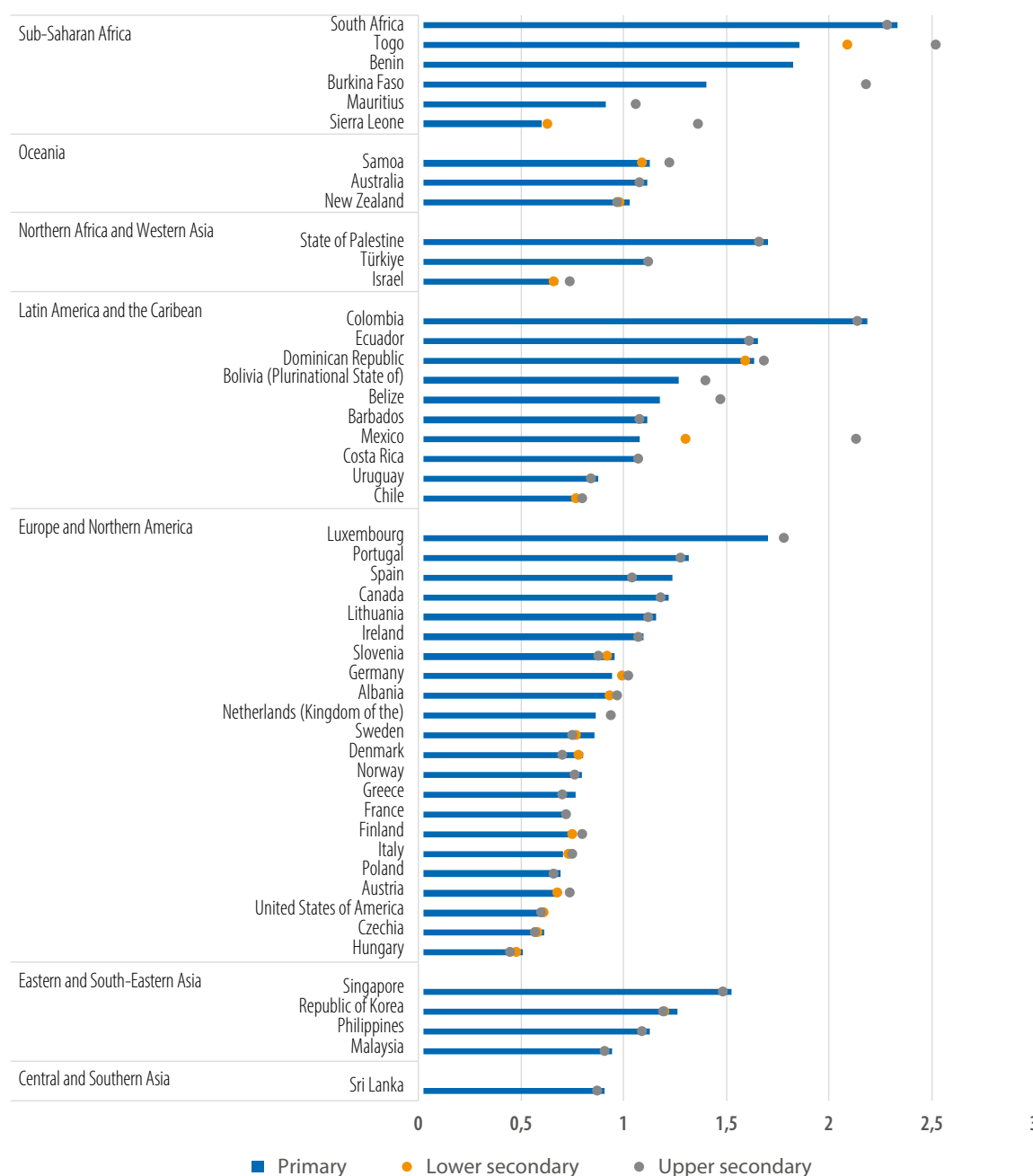
is a lack of data on teacher salaries globally; therefore, regional averages are not available for analysis.

In **pre-primary education**, teachers in Samoa and Sierra Leone earn half as much as they might expect in a profession requiring a similar level of qualifications, while in Colombia, Togo, Benin, Luxembourg, Ecuador, and Dominican Republic teachers earn at least 50 per cent more than similarly qualified professionals.



In 20 countries in sub-Saharan Africa teachers earn, on average, less than \$7,500 purchasing power parity per annum.

Figure 4. Average teacher salary in primary, lower and upper secondary education relative to other professions requiring a comparable level of qualification, both sexes, 2021 or latest data available



Source: UIS, 2023c and adapted from UNESCO and Teacher Task Force, 2023a. Indicator 4.c.5. Date of database consultation: 27 September 2023.

Analysis of **primary education** shows that half of all countries pay primary teachers less than other professions requiring similar qualifications, while this decreases to just 3 in 10 countries in Europe and Northern America. In Hungary, primary teachers earn half of what comparable qualified professionals do, while in Singapore, Luxembourg, Colombia, Dominican Republic and Ecuador teachers earn at least 50 per cent more than similarly qualified professionals (UNESCO and Teacher Task Force, 2023a). Data show that teachers can also earn relatively

higher salaries in sub-Saharan Africa. For instance, primary teachers in Togo, Benin and South Africa earn on average more than 50 per cent the salary of those working in other professions requiring similar level qualifications. However, this does not necessarily translate into large salaries. For example, research shows that in 20 countries in sub-Saharan Africa teachers earn, on average, less than \$7,500 purchasing power parity per annum, which means that their pay is largely inadequate to meet basic family needs (Bennell, 2023).

Lower and upper secondary teachers enjoy relatively more competitive salaries in some countries such as Togo and Mexico, where especially at upper secondary they earn more than the double that of similarly qualified

professions, while in countries like Hungary, United States of America, Denmark, France, Austria, Israel and Sri Lanka, secondary teachers earn less than their equivalently qualified peers (see Figure 4).

Many teachers leave the profession, but more and better data are needed to gauge its impact

Teacher attrition refers to the number of personnel leaving the profession in a given year. Departures may be due to any number of reasons, such as retirement, health, family commitments, taking a job in another field or death, among others (UIS, 2023b; OECD, 2021).

A system with a steady attrition rate of above 10 per cent would result in an average teaching career of merely 10 years. For systems aiming to have teachers working for extended careers of 30 years or more, it would be necessary to sustain attrition rates considerably below 5 per cent (UIS, 2023b).

Global attrition rates among primary teachers almost doubled from 4.6 in 2015 to 9 per cent in 2022 (see Table 3). In lower secondary education, the rate increased substantially in 2019 but has begun to decrease since 2021. In the case of upper secondary attrition, there is a lack of recent data, although older UIS data generally show that attrition decreases at higher levels of education (UNESCO and Teacher Task Force, 2023a). Elsewhere data show that in some high-income countries, attrition is higher in secondary education (OECD, 2021).

Table 3. Global teacher attrition rates (%), both sexes, 2015-2022

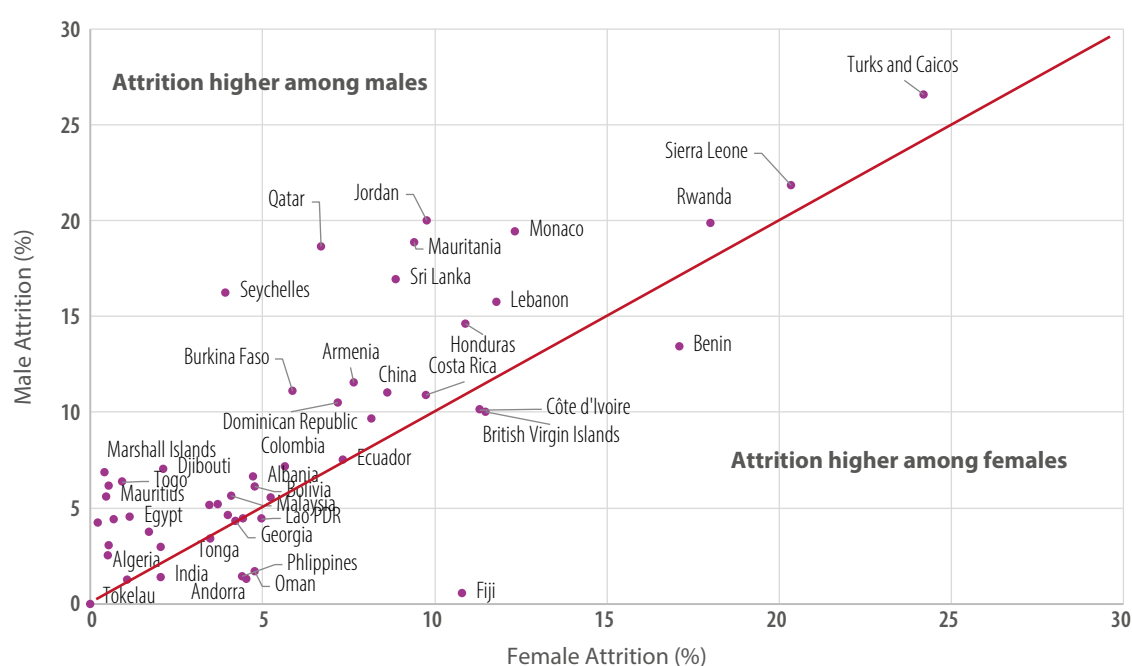
Educational level	2015	2016	2017	2018	2019	2020	2021	2022
Primary	4.62	m	m	m	5.36	5.17	5.83	9.06
Lower secondary	m	5.00	4.89	4.14	6.61	7.85	5.75	5.71
Upper secondary	m	4.14	4.03	4.19	m	m	m	m

Source: UIS, 2023c and UNESCO and Teacher Task Force, 2023a. Indicator 4.c.6. Adapted from Connolly and García-Chinas, forthcoming. Date of database consultation: 05 October 2023.

Note: m = missing data

Male teachers generally leave the profession at higher rates than their female colleagues (see Figure 5). Global attrition rates in 2021 were 9.2 and 5.9 per cent for male primary and lower secondary teachers, compared to 4.2 and 5.6 per cent for female teachers (UIS, 2023c). Attrition among male teachers in primary education is higher than females in 80 per cent of countries. It is more than two times higher in Algeria, Belarus, Bhutan, Djibouti, Egypt,

Marshall Islands, Mauritius, Morocco, Mongolia, Niger, Seychelles and Togo. In some circumstances, women have higher attrition rates than men: for instance, in India, female primary teachers had an attrition rate of 2 per cent in 2022 compared to a 1.4 per cent rate for male primary teachers (UIS, 2023c; UNESCO and Teacher Task Force, 2023a).

Figure 5. Teacher attrition in primary education, by sex, 2021 or latest data

Source: UIS, 2023c and adapted from UNESCO and Teacher Task Force, 2023a.

The causes of higher male attrition rates vary by region or country. However, some general trends have emerged such as men having more employment mobility than women, especially in fields such as construction, business, manufacturing and agriculture (OECD, 2023). Globally, women are overrepresented in lower-paying service sectors (such as education and social care) and the gender gap in labour force participation stands at 25 per cent (OECD, 2023).

Teaching at lower levels of education is frequently perceived as a women's profession, influenced by cultural norms and gender bias that assign women the primary role in educating and caring for children (OECD, 2023). **In early years education, teaching remains predominantly a female profession.** Globally, women make up 94 per cent of pre-primary, 67 per cent of primary, and 54 per cent of secondary teachers (UIS, 2023c). This trend only seems to be growing, as female pre-primary teachers represented 92 per cent of the global teaching force in 2000 and 94 per cent in 2022, and female primary teachers increased from 60 per cent to 68 per cent over the same period (UNESCO, 2022).

Overall, there are insufficient data to calculate all regional averages and to determine long-term trends in terms of teacher attrition. Furthermore, country-level attrition rates can vary widely by education level and from year to year. In fact, UIS only includes attrition

inputs from 79 countries at the primary level, 44 at the lower secondary level and 48 at the upper secondary level between 2012–2022 (UIS, 2023c).

In primary education, only the available data for Eastern Asia allows for a long-term analysis, showing a significant teacher attrition rise from 1.3 per cent in 2018, to nearly 9 per cent in 2022. Between 2020 and 2022, primary level teacher attrition was very high (10 per cent or more) in a number of countries across different regions: 10 per cent in Sri Lanka; 11 per cent in the British Virgin Islands and Côte d'Ivoire; 12 per cent in Honduras, Jordan and Lebanon; 16 per cent in Mauritania and 19 per cent in Rwanda. It was alarmingly high (20 per cent or more) in Benin, (28 per cent), Sierra Leone (21 per cent) and Turks and Caicos (25 per cent).

There are insufficient attrition data to calculate regional averages for **pre-primary teachers**. Available country level data show the complex and varied nature of pre-primary teacher attrition across different regions and countries. While some countries maintain low attrition rates such as India and Nepal around 2 per cent in 2023 and 2022 respectively, others experienced high attrition rates, particularly in Latin America and the Caribbean, such as Dominican Republic and Turks and Caicos Islands, with 39 and 34 per cent, respectively. Notably for Jamaica, this represents a rise from reported attrition of 3 in 2018 to 23 per cent in 2020.

Similarly, the lack of sufficient data on **secondary teachers** hinders a long-term trends analysis on attrition rates for many regions. Available data for Eastern and South-Eastern Asia reveal stable primary teacher attrition rates of less than 4 per cent since 2013, with increasing variability from 2019 onwards. This evolving pattern includes a subsequent rise to more than 5 per cent in lower secondary education and more than 3 per cent in upper secondary in 2022. Compared to other regions, the teacher attrition rates in SIDS at lower secondary schools are notably high and have remained stable, with rates around 16 per cent between 2018 and 2020.

Novice teachers are more likely to leave the teaching profession, and teachers about to retire also put pressure on educational systems and increase shortages. A few countries provide data about when teachers leave the profession over the course of their careers, and some studies show that, unless they are appropriately supported, novice teachers are more likely to leave the profession than their more experienced colleagues (Ingersoll and Smith, 2003; Papay et al., 2017; DFE, 2023; Allen and Sims, 2018).

While the loss of novice teachers strains education systems and results in high recruitment and training costs, teachers retiring also adds pressure. High average teacher age, as in Italy and Lithuania (over 50 per cent of primary teachers aged 50+), poses significant adaptation challenges (Eurostat, 2023). To address these challenges, the Teacher Demographic Dividend (TDD) in South Africa seeks to gather extensive data on the teacher

workforce to model future teacher workforce dynamics, including the identification of windows of opportunity to improve education. So far, the TDD has identified the upcoming challenge of replacing half of all government-employed teachers, who will retire by 2035, along with its potential impact on public expenditure (Stellenbosch University, 2023).

The departure of teachers from the profession and those who move between schools, leading to subsequent teacher shortages, depend heavily on the material and symbolic conditions of teaching, ranging from the status of their employment, contracts and remuneration to the trust, appreciation, sense of fulfilment, and the autonomy they are granted.

Reversing teacher shortages requires addressing its multidimensionality, using a broad perspective, including short-, medium- and long-term strategies. Furthermore, it is imperative to tackle both the structural aspects shaping educational system arrangements and the individual dimensions implied in teacher shortages, and to understand the contextual factors affecting the interaction between these two components.

Teacher shortages result from a combination of factors, each presenting unique challenges. Shortfall in recruitment systems and failure to retain teachers in contexts of higher attrition rates and turnover, are some of the key dimensions that give rise to teacher shortages.

Uneven teacher deployment makes shortages coexist with a surplus of teachers and reinforces existing inequalities

Teacher shortages persist when there is a misalignment between teachers' qualifications and the subjects or areas where they are needed. Addressing this mismatch requires ensuring the recruitment of appropriately qualified teachers and an equitable teacher distribution within education systems.

Teacher shortages in certain subjects often lead teachers to teach out-of-field. Due to external labour opportunities, some subjects are more prone to shortages than others. For science, technology, engineering, and mathematics (STEM) graduates, for example, there are numerous non-teaching opportunities with favourable pay and conditions (Pitsoe and Machaisa, 2012). In England, in 2022, only 17 per cent of physics teaching positions had been filled (Long

and Danechi, 2022). Linguistic diversity is often affected by lack of qualified teachers to teach in the language of their students, as estimations indicated that around 40 per cent of the global population does not have access to education in a language they speak or understand (UNESCO, 2016c).

Requiring teachers to teach out-of-field may also contribute to higher attrition rates (Connolly, 2023; Donaldson and Johnson, 2010). In Brazil, 41 per cent of mathematics teachers in rural schools lack certification in that subject, while 57 per cent of science teachers in low-income schools in Chile and 72 per cent of language teachers in indigenous schools in Ecuador are also not certified in their respective subjects (Bertoni et al., 2020). In Australia, university graduates are more reluctant to



In Zimbabwe, nearly half of the science teachers in rural schools lacked proper training, compared to roughly one-quarter in urban areas.

take early childhood teaching posts, (Gibson et al., 2020), meaning that this education level is often more at risk of qualified teacher shortages.

Recruiting teachers for remote and rural areas often results in significant disparities in pupil-teacher ratios and the hiring of contract teachers, elevating turnover rates. As in other contexts, many sub-Saharan African countries face challenges in hiring teachers for rural schools, resulting in significant disparities in pupil-teacher ratios (Mulkeen, 2010). Also, data from the Organisation for Economic Co-operation and Development (OECD) suggest that teacher shortages are more prevalent in rural areas (OECD, 2020b), although this is not true of all countries. While teaching quality disparities between rural and urban areas are generally common, certain countries show large disparities, such as Türkiye, with 34 per cent more experienced teachers in urban compared to rural areas (OECD, 2022). Peru struggles to staff rural public schools in impoverished areas with qualified and competent teachers, as many prefer to work in wealthier urban regions. Less qualified teachers often fill these positions through short-term contracts or non-certified routes (Bobba et al., 2022).

Intersecting and overlapping factors such as teacher subject shortages and hard-to-staff-locations may exacerbate the negative effects of teacher shortages among those already disadvantaged. In Zimbabwe, for instance, nearly half of those teaching science in rural schools lacked proper training, compared to roughly one-quarter in urban areas (Bashir et al., 2018). Similarly, the unequal distribution of qualified teachers between rural and urban areas and a shortage of educators in key subjects like science and mathematics are also challenges in Thailand. These imbalances entail remote schools struggling with staffing shortages at the primary level, while urban schools exhibit a surplus of teaching personnel (World Bank, 2015).

Schools in economically disadvantaged areas often struggle with teacher shortages. In a cross-national study of India, Mexico and the United Republic of Tanzania, teachers responsible for marginalized children more consistently expressed dissatisfaction with their working conditions and a desire for reassignment (Luschei and Chudgar, 2017). In the United States, those working in high-poverty schools were more than twice as likely to leave as those in low-poverty schools (Darling-Hammond et al., 2017; Ingersoll et al., 2019). Low-income countries not only struggle with overcrowded classrooms, but also often have less qualified and experienced teachers (Avvisati, 2018). Financial incentives are often used to address these shortages, either benefiting recruitment or retention (Elacqua et al., 2022; Steele et al., 2009), yet these incentives may not have long-term benefits after withdrawal (See et al., 2020).

Low teacher retention is a loss on numerous fronts

Both attrition and turnover³ are disruptive for schools, students, and education systems, representing a significant loss of trained professionals.

Teacher turnover may bring fresh perspectives, talent, and foster productive teacher-school connections (James and Wyckoff, 2020), **although it may also pose challenges.** Departing teachers take valuable school-specific knowledge, and newcomers require training and time to adapt, which also implies administrative costs (Gibbons et al., 2021).

Why do teachers leave the profession? There are personal, professional and organizational factors leading teachers to quit the profession. Work-life balance, working conditions, health, intellectual satisfaction, school leadership, and personal resilience resources impact teachers' decisions to leave, while supportive school environments, professional development, and collaborative relationships improve teacher retention.

3 Attrition should not be confused with teacher turnover, which could also include teachers moving between schools or levels of education in addition to leaving the profession (OECD, 2021; UIS, 2023b). Attrition rates can be estimated directly- by obtaining the number of individual teachers leaving the profession- or indirectly by examining the number of teachers in a system in two consecutive years as well as the number of new teachers entering a system.

Some personal factors entail work challenges intersecting with teachers' personal lives, affecting their decision to stay or leave. Notably, work-life balance (Goldring et al., 2014), health, and personal resilience resources, like social networks and a sense of identity, play a role in teachers' retention (Day et al., 2006).

Furthermore, several professional characteristics are associated with attrition, such as experience, certification, self-efficacy, and better career opportunities. For example, evidence suggests that teachers may quit in search of increased intellectual satisfaction, professional autonomy and an act of agency, seeking out ongoing career development outside of the classroom (Goldring et al., 2014; Rinke and Mawhinney, 2017; Smith and Ulvik, 2017).

In addition, school-level and organizational factors significantly impact teacher attrition. Some research indicates turnover is primarily influenced by workplace conditions rather than student-related factors, while fostering collaborative cultures and relationships within schools had the most significant impact on reducing turnover (Johnson et al., 2012; Ladd, 2011). Factors like insufficient resources, overcrowded classrooms, heavy workloads, and classroom management issues have been identified as key contributors to teacher turnover (Marais, 2016; Mulkeen et al., 2007; Palm, 2020; Pitsoe, 2013). In addition, adequate support from school leaders, as identified by a study in the UK (DFE, 2017), is essential for novice teachers (Allen and Sims, 2018).

Teachers' well-being is essential for retention. Poor working conditions, excessive workloads, and isolation can lead to dissatisfaction, burnout, and attrition. In five English-speaking OECD member countries, both objective and subjective work conditions — in particular workload — have been linked to well-being (Jerrim and Sims, 2021). In addition, low and irregular payments are a source of dissatisfaction in many contexts, and this can demoralize teachers and affect different dimensions of their well-being (Katete and Nyangarika, 2020). Accountability-driven workloads, and the associated regimes of high-stakes inspections in some contexts, have been linked to attrition (Ryan et al., 2017; Perryman and Calvert, 2020). Also, when teachers are isolated from peers or feel that they do not belong in a community, their well-being may be impaired (Hascher and Waber, 2021). Systems where teachers compete for promotions and desirable postings might work counter to collaboration and collegiality (Tournier et al., 2019). Conversely, effective teacher retention is linked to strong collegial relationships and a supportive school context (Skaalvik and Skaalvik, 2011, 2017).

The 2018 Teaching and Learning International Survey (TALIS) report showed that teachers who experience high rates of stress at work are more likely to want to leave teaching in the next five years (OECD, 2020c). Depending on the context, teachers may also face a range of threats to their health, such as higher risk of hypertension (Scheuch et al., 2015), depression (Agyapong et al., 2022), and muscular-skeletal difficulties (Ng et al., 2019; Corby, 2021). In crisis contexts, programmes like 'Teachers for Teachers' in Kenya and teacher education professional development in South Sudan and Uganda, have provided vital support to teachers facing displacement and trauma (Ladegaard, 2022), by offering training, coaching, and mentoring to improve teachers' skills and well-being, leading to better teaching methods and a stronger sense of belonging among educators.

Brain drain or brain gain? There is limited up-to-date data available on teacher mobility between countries (Bense, 2016). However, high-income countries have historically filled teacher shortages by recruiting from abroad, and current dynamic teacher migration trends are increasingly extending teacher outflows even within countries like in the UK, where teachers may leave state schools for private international ones (Dickens, 2016; Phillips, 2015). For example, the Caribbean is a preferred provider of teachers for the international market (IOM 2023), especially to high-income countries. In Jamaica, teacher exodus has resulted in the hiring of pre-trained graduate teachers, classes being merged, engaging teachers scheduled for pre-retirement leave, increasing the pupil-teacher ratio, increasing the use of information and communication technology, using recorded lessons or removing subjects from the suite of subjects on offer for secondary exit examinations (Bristol et al., forthcoming). Conversely, teachers working abroad can benefit professionally and financially, and their home countries can gain from their financial remittances and their valuable experiences when they return. To maximize benefits and ensure fairness, international teacher recruitment should focus on expanding international exchange programmes while protecting the rights and support of migrant teachers. Careful international teacher recruitment is crucial to address shortages fairly and effectively, to avoid reinforcing unequal distribution of teachers. For example, Barbados has faced increased international teacher recruitment since the late 1990s. To ensure an adequate supply of trained educators and protect their education system, especially in hard-to-staff areas, the country opted for a managed migration approach (Bristol et al., forthcoming).

Teacher absenteeism may potentially increase teacher shortages. Teacher absenteeism can be related to teacher

attrition, as high rates of absenteeism are often seen as an indication of low motivation (UNESCO et al., 2022), affecting instructional time. Additionally, absenteeism is cited as a cause of stress for teachers, as they often face an increased workload to compensate for their absent colleagues (Schleicher, 2021). However, research has also found that many causes of teacher absences are beyond the teacher's control, which points to poor or stressful working conditions (Bennell, 2022; Játiva et al., 2022).

For example, research from Senegal found rural primary teachers miss on average approximately 10 more days each school year than their urban colleagues due to issues such as difficulty withdrawing monthly salaries or extreme isolation and inadequate housing (Niang, 2017). Data during the pandemic is sparse, but about half of countries responding to a global survey on national responses to COVID-19 indicated an increase in teacher absences from 2020 to 2022 (UNESCO et al., 2022).

III. Levers to address teacher shortages

Addressing teacher shortages requires making teaching an appealing profession

Teaching should increase its attractiveness, understood as the ability to recruit and retain qualified and motivated individuals relative to other professions (Stevenson and Milner, 2023). Raising the value of teaching requires respecting teachers' roles in education transformation and creating conditions where they may be agents of change.

Teacher attractiveness is multifactorial, which is why comprehensive policies work best, including financial incentives, career structures and professional opportunities, working conditions, teacher status, school leadership, collaborative environments, accountability systems, and social dialogue.

A profession attractive to all must embrace diversity, while adopting varied strategies to reach out to different constituencies when recruiting and retaining teachers. Education policies supporting people from underrepresented backgrounds into teaching may contribute to improving equity and performance within education systems (Harbatkin, 2021; Holt and Gershenson, 2015).

A diverse workforce benefits everyone, as it may include an ample range of knowledge and perspectives historically excluded from formal learning (International Commission on the Futures of Education, 2021; Ware et al., 2022; Pesambili and Novelli, 2021). Strategies to make the teaching profession more attractive to all might be legal, structural, or institutional, and they might affect individuals, targeted groups of teachers, or the whole workforce.

A gender-balanced workforce that reflects the broader community is needed. Women make up most teachers worldwide (except for sub-Saharan Africa), but they are

underrepresented in certain subject areas and in leadership (Avolio et al., 2020; Bergmann et al., 2022). According to the 2018 TALIS data, female representation among lower secondary school leaders stands at 47 per cent, despite the fact that 68 per cent of teachers are female (OECD, 2019). Thus, even in a workforce where women represent the majority, men hold the majority of leadership positions. Evidence also suggests that barriers to women succeeding as principals are greater in rural settings from East and West Africa (Lindsay et al., 2017). In addition, gender-based violence and stereotypes make the profession unsafe and unattractive for women (Haugen et al., 2014; Stromquist et al., 2017; Stromquist 2018).

Male teachers have a key role to play in the psychological (McGrath and Van Bergen, 2017) and social development of girls and boys (McGrath and Sinclair, 2013) as well as in shaping gender equality dynamics within society as a whole (Moosa and Bhana, 2017). However, it can not only be difficult to attract more males to teaching positions, as seen in Jordan (Bengtsson et al., 2021), there are also challenges linked to specific subjects. In this country, for instance, a lack of qualified male teachers affected availability of mathematics and science teachers (Belal, 2014). Moreover, the underrepresentation of males in the teaching profession diminishes the chances of aspiring male students viewing teaching as a viable career option, limiting the potential to challenge stereotypes related to gender roles (McGrath et al., 2020).

Efforts should be made to implement gender-responsive policies across levels and subjects by increasing the presence of male teachers in the lower levels of education and the presence of women in lower and upper secondary, as well as to support them in breaking the glass ceiling in leadership roles. Further, flexible

working options, support for childcare while ensuring compatibility between teaching and parenting, water, sanitation and hygiene facilities, community-based approaches, and laws that protect women from violence and ensure their rights — such as maternity leave — may contribute to supporting their well-being (CooperGibson Research, 2020; Education Support, 2021; Teacher Task Force, 2023; Gromada and Richardson, 2021; Stromquist et al., 2017; UNESCO, 2017; Smethem, 2007).

Supporting minority and migrant teachers enriches learning processes, outcomes and minimizes shortages, but this group of teachers may require targeted recruitment and retention interventions.

Students from minority groups benefit from teachers who share their ethnic, racial, linguistic, or cultural background, as they can serve as role models. However, teachers with minority and migrant backgrounds are at higher risk of attrition compared to their peers and may face direct and indirect discrimination (European Commission, 2016; Ingersoll et al., 2019, Carver-Thomas, 2018). Initiatives in the United States, such as the teacher residency programmes, have successfully addressed retention challenges (Carver-Thomas, 2018).

Developing inclusive workplace environments for all could help to attract teachers with disabilities.

However, once in the profession, teachers with disabilities may face isolation at work (Ware et al., 2022). In addition, their motivation to remain in the profession may diminish if they lack support or face discrimination at work, depriving them of their rightful equal opportunities and denying students essential role models and mentors (UNGA, 2023). Peer networks, training and continuous professional development focused on inclusion for

teachers with and without disabilities, along with collaborations and interactions among staff may help to achieve inclusive work environments (Ware et al., 2022, Neca et al., 2022).

Low status undermines the attractiveness of teaching.

Teacher status is made up of different dimensions including salary, working conditions, employment procedures, and subjective viewpoints (Thompson, 2021). Education systems that heavily rely on unstable contracts, such as contract teachers, are unlikely to present teaching as an appealing career choice. Although the poor prestige associated with teaching might be particularly off-putting for graduates with migrant and minority backgrounds, the low status of teaching may deter many candidates from entering the profession (Han et al., 2018; Park and Byun, 2015; Schleicher, 2011). High-achieving candidates may be also discouraged from entering the profession, as observed in Latin America, where teaching is perceived as a profession that does not require high academic achievements (Bruns and Luque, 2015).

How media portrays teachers may greatly influence public perceptions and affect their social status.

The COVID-19 pandemic temporarily improved teachers' status in some countries by publicly acknowledging their hard work and adaptability (Thompson, 2021). However, this perception did not last, as negative views arose when teachers voiced their concerns related to safety in returning to in-person teaching (Nerlino, 2023; Kim et al., 2023). Media campaigns to promote teaching as an attractive profession should be accompanied by other policy reforms to increase the likelihood of their success (Donitsa-Schmidt and Zuzovsky, 2020; Education International, 2022).

Making teaching a vocation and a profession

Effective recruitment systems must cater to diverse talent pools, including individuals who have not previously considered teaching, former teachers not currently in the profession, and qualified candidates for teacher training.

Motivations for choosing the teaching profession vary based on altruistic (to serve and support others), intrinsic (a passion for teaching and personal and intellectual growth), and extrinsic factors (work-life balance, job security and income).

For school-leaving students, these three motivations are influenced by individual characteristics such as gender

and academic background, as well as local contexts.

This underscores the importance of implementing tailored recruitment strategies in initial teacher training and teacher placements. For instance, among secondary students in China, SAR Hong Kong, altruistic and intrinsic factors are key, such as opportunity for continuous professional development, personality fit, interest in a subject, and a desire to help others (See et al., 2022).

People who have not previously considered teaching may be potential recruits, although they are often an overlooked constituency. They may help ameliorate teacher shortages, since early career decisions are not

set in stone and late conversions are always possible. Research has found that those who rejected teaching often mentioned fit issues, negative perceptions of teaching (e.g., workload and past school experiences), and more attractive alternatives as reasons. Meanwhile, those who never considered teaching tend to prioritize factors such as salary, career advancement, job status, and working conditions in their career decisions (See et al., 2022). Recruitment campaigns emphasizing the external benefits of teaching could potentially work for this group. For example, in an Australian study (Sikora, 2021), young people's career aspirations changed, shifting from not wanting to be teachers in secondary school to considering teaching in their twenties, and vice versa.

Qualified teachers who quit teaching are an important talent pool. Understanding their reasons for leaving

and returning is key to bringing them back to the profession. Timely policy measures and support are needed, since the longer teachers stay away, the less likely they are to return. There is also a higher risk that once teachers do return, they might leave the profession once again (DFE, 2018). Most who leave teaching transition to different roles within education (administrators or support staff), often with lower pay, suggesting that money is not the primary factor influencing teachers' decisions to leave or stay. Key factors contributing to teacher attrition include workload, work-life balance, autonomy, and intellectual stimulation (DFE, 2017; Goldring et al., 2014; Worth et al., 2015). Limited data on qualified teachers who no longer teach is critical to bringing them back to the profession (Bengtsson, forthcoming) and more effort is required in this area.

Addressing teacher shortages requires both sustaining and enhancing teacher motivation while fostering their professional development

Career pathways with both horizontal and vertical growth opportunities are strategic levers to retain teachers. The career structure is a cornerstone of teacher professionalization as it links to teacher motivation, progress, work stability and development. Career pathways aimed at intrinsic and extrinsic teacher motivations are more likely to improve teacher retention and attractiveness. However, the implementation of career reforms should align with the ability of education systems to effectively maintain them over time (Tournier et al., 2019). Several countries have implemented career pathways with both horizontal and vertical growth, including South Africa, Singapore, and Lithuania (ibid.).

Teachers enter and remain in the profession for different reasons, and clear tracks for career advancement are key factors considered, among others. However, many new graduates are dissuaded from seeking a teaching career as prospects are seen as limited compared to other professions, as evidenced in Southeast Asia and Europe (See et al., 2022; Snoek et al., 2019). In Uganda, limited opportunities for professional growth were the second most cited reason for teachers' job dissatisfaction after salary (Nkengne et al., 2021). Linear career prospects with little chance of progression affected teachers' motivation in the Asia-Pacific region (UNESCO, 2016b).

Ensuring that teachers have careers with long-term prospects is key to keeping them motivated throughout their work life. However, mid- to late-career teachers are often neglected in teacher support efforts (e.g. professional development), which tend to focus on novice teachers who are at the highest risk of attrition (Stevenson and Milner, 2023). In 2023, France started introducing reforms in its career systems to enhance the profession's long-term appeal by allowing experienced teachers to further progress in their careers (Ministère de l'Éducation Nationale et de la Jeunesse, 2023).

Effective and attractive careers pathways need to offer equitable access to professional development and advancement for all teachers. Contract teachers and those teaching in hard-to-staff areas should be considered when designing career pathways. Due to substantial teacher shortages in Africa, some countries are actively advocating for alternative routes into the profession. Specifically, they are focusing on providing in-service training and the qualification of contract and volunteer teachers (Bengtsson, forthcoming). Policies addressing teachers' careers must pay attention to resources required to implement changes, ensuring transparency in promotions and providing adequate training for those evaluating teachers. In Ethiopia, principals needed more training in how to evaluate teachers (Yimam, 2019), and in Mexico and South Africa there were difficulties in training appropriate personnel to help with these tasks (Chimier et al., 2019).

Fostering teacher professionalization: empowering teachers through autonomy and lifelong learning to tackle teacher shortages

Effective school leadership enables motivating school environments, enhances working conditions and empowers teachers with greater autonomy.

Distributed decision-making improves teachers' autonomy and sense of professionalism, as they are involved in shaping the environments where they work, increasing job satisfaction, motivation, and teacher retention (OECD, 2014; Chimier and Tournier, 2019; Shuls and Flores, 2020). Conversely, under managerialism, teachers have limited say in curriculum decisions and policy-making that directly affects them. Policies are often imposed without teacher input, potentially eroding trust in teachers and sometimes creating a competitive culture among schools and teachers.

Granting autonomy to teachers is key for teacher professionalization and has the potential to significantly enhance job satisfaction and self-efficacy, but it requires adequate teacher training and support.

If not, it may be perceived as an extra burden by teachers. Providing teachers with opportunities for professional development, access to high-quality resources, and the tools needed to exercise their agency is crucial. This enables them to make informed choices on key matters such as curriculum content and pedagogical methods. In addition, it supports their capacity to act as professionals, highly knowledgeable actors who understand the needs of their students and communities, instead of positioning them as merely implementers of policies designed by others (Pantić et al., forthcoming). Furthermore, opportunities to innovate lift teachers' attractiveness by professionalizing teachers as key agents of education (OECD, 2019). Teachers can innovate in knowledge and methods, products and services, and technology, tools or instruments (OECD, 2014).

Teachers should be equipped with the ability to identify and seek support from different sources and actors, such as colleagues and communities (Pantić et al., forthcoming). Technology, however, does not replace teachers, and it must be incorporated using human-centred teaching and learning approaches. Availability of technology and connectivity to access online resources and distance training opportunities may help teachers to overcome time and location barriers. Moreover, teachers can use technology to learn from each other, share best practices and work together on projects (UNESCO, 2023). For instance, virtual communities of practice enabled teachers in Arab States to continue professional

development and emotional support during the COVID-19 pandemic (Ghamrawi, 2022; Zaalouk et al., 2021).

Strong teacher preparation is associated with enhanced teacher efficacy, and better prepared teachers are more likely to remain in the profession

(Kini and Podolsky et al., 2016). Research found that novice teachers with extensive preparation are two times more likely to stay in the classroom compared to teachers with little or no preparation (Ibid.).

Teacher education and professional development must be recognized as lifelong learning trajectories.

Rather than expecting teachers to possess all specialized knowledge and skills, teacher education programmes need to be understood as learning ecosystems that support lifelong learning for educators in various settings. Teachers may engage in inquiry, research, experimentation, and reflection, connect theoretical and practical knowledge to address diverse and emerging educational needs, which empowers them to critically assess policies and practices. Reflecting on other education systems and engaging with research can help teachers identify areas for improvement. Availability of professional development opportunities in a variety of formats (e.g., micro-credentials, formal, non-formal, shorter trainings over a sustained period instead of one-off longer trainings, etc.) and delivery methods (online, in person) is crucial to ensure relevance and flexibility to accommodate teacher workloads.

Initial teacher training with an adequate in-school experience, followed by induction and mentoring in the novice years, are key elements retaining teachers.

However, in OECD countries, nearly 40 per cent of novice teachers reported some induction, and only 22 per cent indicated having a mentor (OECD, 2019). Nevertheless, teachers highly appreciate collaboration and obtaining formative feedback from their peers (Tournier et al., 2019), and novice teachers benefit greatly from mentoring and induction programmes. Programmes are more likely to be effective if novices are paired with mentors who possess training and experience in both teaching and a mentoring role, as observed in New Zealand (Grudnoff, 2012; Spooner-Lane, 2017). It is also recommended that mentors not be involved assessing novices' competencies (Spicksley, 2023).

Current teacher training is not adequately preparing teachers. Many feel unprepared to teach in diverse classrooms, which may encompass students with mixed abilities or multiple languages (UNESCO, 2018; UNESCO and Teacher Task Force 2020; International Commission on the Futures of Education 2021). Additionally, teachers have reported lack of adequate training in information and communication technology skills (Darling-Hammond and Hyler, 2020), and insufficient training on socio-emotional competences.

A recent analysis revealed that while a bachelor's degree is the typical prerequisite for teaching, teacher qualifications differ by region. Notably, only countries in sub-Saharan Africa mandate less than a bachelor's degree for primary and lower secondary level teachers. Additionally, low-income countries tend to have considerably lower minimum qualifications for teachers (UIS, 2023a).

Teacher shortages may influence the quality of teacher training. Education systems might opt to create faster certification tracks, lowering entry and qualification requirements, and introduce alternative pathways to teaching in case of shortages (OECD, 2019). Alternative pathways for teaching can involve specific training programmes or require no training at all. In low-income countries, about 1 to 2 out of every 10 countries, depending on the educational level, offer pathways without training. In contrast, in upper-middle-income and high-income countries, these pathways are more prevalent, with 2 to 4 out of 10 countries having them. However, in these wealthier countries, alternative pathways always include pre-service teacher training (UIS, 2023a). Lowering of entry requirements can be particularly pernicious in contexts where the standards for teacher training have been traditionally low (Pitsoe and Machaisa, 2012). In countries where entry into teacher preparation requires a high level of academic achievement, teachers are highly regarded. While raising the entry standards of the teaching profession can help increase its prestige (Ingersoll, 2003), such reforms should be implemented carefully, as they might lead towards teacher shortages.

Standards are a relevant tool for the professionalization of teaching. They can be used in different ways, such as to guide the design of initial teacher training and professional development, as frameworks for teacher assessment, or to guide teacher recruitment processes. However, when they are used as rigid frameworks to guide and evaluate teacher practice, they can curtail teacher agency, increase teacher stress and job dissatisfaction. Hence, it becomes crucial in the case of accountability systems to be anchored in well-defined standards, while also being connected to formative feedback and professional development opportunities. Consequently, the assessment process is not seen as a scrutinizing and punitive tool, but rather as a means of supporting professional development and growth.

Qualification frameworks play a role in defining teacher professionalism and knowledge. Alternative certification programmes might be a good response to fight the shortage of teachers in the short term, and a valuable venue to increase the diversity of the teaching workforce. However, they can create a shortage of qualified teachers if the quality of these programmes is not monitored. It is therefore critical to develop quality standards to monitor and control certification programmes. The African Teacher Qualification Framework, for instance, encourages the elevation of minimum entry requirements to a degree-level teacher education, among other significant measures (African Union, 2019). An influential initiative is the International Standard Classification of Teacher Training Programmes (ISCED-T) by the UNESCO Institute for Statistics, to which is a framework for assembling, compiling and analysing cross-nationally comparable statistics on teacher training programmes and the related teacher qualifications. This is key since current monitoring relies on varying national standards. ISCED-T will also contribute to explore the possibility of creating a global minimum standard for teacher qualifications (UIS, 2022).

Teachers have a unique role in building a new social contract for education, leading collaborative knowledge co-creation and fostering social dialogue in their communities.

Relationships and collaboration with colleagues, families, students, and other professionals are an essential part of the teaching profession and

therefore, crucial for effective teaching. Teaching is not solitary but a collaborative, relationship and community-based practice. Collaborative relationships are critical for

building inclusive and engaging learning communities. Community engagement during teacher education is fundamental, and programmes should allocate time to this (Pantić et al., forthcoming).

Quality teachers advance their communities, which in turn provide them with support to thrive and achieve professional growth. This is a key factor to increase the motivation of teachers to stay in the profession. In Southern Asia, teacher retention increased when teachers were able to work in their home areas, thanks to social support, networks and familiarity with the community (Bennell and Akyeampong, 2007).

Active participation in networks and communities of practice can contribute to enhancing the appeal of the teaching profession. Active participation in communities of practice in Argentina and Republic of Korea has improved teacher collaboration, feedback and job satisfaction, along with teachers' sense of self-efficacy (Barroso and Cruz, 2022; Yoo and Jang, 2022). Similarly, in Rwanda, communities of practice have positively impacted teacher motivation, problem-solving skills, and collegiality (VVOB, 2021).

Time for building relationships and communities needs to be part of teachers' contractual hours, alongside time for instruction to allow them to engage with others in problem-solving. Allocating time for collaboration has been identified as a key factor to address teaching and learning during the pandemic and beyond (Darling-Hammond and Hyler, 2020). However, collaborative time given to teachers is often limited, and many teachers seem to do this collaboration outside of contracted hours (voluntarily and unpaid) (Kaplan et al., 2015).

Crises and uncertainties have an impact on teacher well-being and the teaching profession, which in turn may

contribute to decreased job satisfaction and higher teacher turnover rates (Pantić et al., forthcoming). During the COVID-19 pandemic, inclusive educational communities helped teachers navigate the pandemic by providing a space for collaboration and support to cope with social and psychological challenges (Ávalos et al., 2022; Zaalouk et al., 2021). Moreover, the pandemic emphasized the need for flexible pedagogy, granting teachers agency to adapt their teaching to various factors such as learning environment, technology, and assessment method (Huang et al., 2020). Peer communities can provide valuable support to such practices.

Effective social dialogue has the potential to raise the status of teaching by empowering teachers, giving them a voice (Stevenson et al., 2018). Social dialogue is a continuous process rather than a discrete event and plays a pivotal role in the development of mutually agreed-upon strategies and policies, including those related to teachers' salaries and working conditions. This in turn ensures the ongoing attraction of an adequate number of teachers to the profession.

Teachers need to have the opportunities to participate in decision-making at different levels, including choices of pedagogical and curricular approaches, as well as wider system development. Moreover, a structured democratic voice enables teacher engagement in decision-making. In Zambia, for instance, the National Framework for Social Dialogue for Teachers was launched to guide ways to facilitate teachers' input into the policy-making process (UNESCO and Teacher Task Force, 2023b). Similarly, the Nepal National Teachers Association, the Nepal Teachers Association, and the Institutional Schools' Teachers' Union have agreed with local Nepali governments to hold biannual social dialogue meetings (Education International, 2023a).

Comprehensive policies are needed to mitigate structural factors that contribute to teacher attrition and turnover

Addressing structural factors behind the decision to leave the teaching profession requires tackling government policies, salaries and incentives, working conditions as well as accountability regimes.

Frequent changes in public policy can lead to greater teacher stress and attrition, as much as a lack of reform. Carefully designed and implemented policies may pay off, such as in high performing Finland, noted for its slow and steady approach to policy development (Sahlberg, 2015). In addition, for policies

to succeed, they must factor in both individual and system-level barriers that hinder teacher adoption and policy scalability. To address individual barriers in teacher policies, changes should be clear, achievable, and beneficial for teachers. On a systemic level, policy success and sustainability hinge on operational feasibility (funding and management capabilities) and political acceptability (a supportive political environment), both underpinned by effective data utilization (World Bank, forthcoming).

Offering competitive salaries is a key lever to attract the best candidates to the profession and sustain their motivation and retention once in post.

Well-trained teachers receiving locally competitive salaries is crucial for ensuring access to education (UN Committee on Economic, Social and Cultural Rights, 1999). Conversely, low wages can make teachers feel undervalued and financially strained, exacerbating teacher shortages. When teachers are underpaid, it may cause them to feel demoralized and reduce their motivation due to the absence of appropriate financial recognition (Bennell and Akyeampong, 2007). In many developing countries, private school salaries are much lower, more closely tied to performance and more often determined by market conditions. For instance, in Kenya, public sector teachers earn a wage premium of over 100 per cent above their private sector colleagues (Barton et al., 2017). Late or cumbersome payments also impact teacher well-being and retention. In addition, in most countries, salaries increase with the age group of the children they teach, which may exacerbate shortages at lower levels. For example, among OECD countries and economies, statutory salaries of teachers per hour vary from 59 USD in primary education to 76 USD in upper secondary teachers in general education (OECD, 2020a), despite evidence to suggest that investment in the foundations has high returns. Also, although being the majority in the teaching profession, women may be negatively affected by gender pay gaps, since they are twice as likely as men to be low-wage workers (UNGA, 2023; UN Committee on Economic, Social and Cultural Rights, 2022). Beyond immediate salaries, another factor in attracting and retaining quality candidates to the teaching profession is how salaries increase over the course of a teacher's career. Linking salaries to motivating career pathways is a promising approach (Crehan, 2016). Countries that have succeeded in maintaining the attractiveness of the teaching profession are those that offer salaries comparable to other prestigious occupations (Tournier et al., 2019).

However, while raising salaries is an important lever to enhance teaching attractiveness, it certainly is no quick fix or immediate solution for teacher shortages.

Furthermore, the effects of policies might not become evident for several decades. Salaries should be one aspect of comprehensive teacher policies which also encompass professionalizing teachers from a systemic approach.

Many countries offer recruitment and retention incentives, especially for subject shortages and hard-to-staff schools.

Incentives often include extra pay and, in some cases, complementary measures like housing, moving expenses, travel allowances, training and study leave with pay, accelerated promotion opportunities,

local hiring drives, lower appointment requirements, and mandatory rotations (Evans and Mendez Acosta, 2023). For example, in Jordan, there is a competitive scholarship for a postgraduate teaching programme (Bengtsson et al., 2021).

Performance-related pay schemes may have success in some low- and middle-income countries, but their long-term effectiveness remains uncertain.

They can also have negative effects, such as prioritizing teaching to the test (Breeding et al., 2021). Many countries offer incentives for teachers in priority areas, which includes subjects facing shortages, and schools in hard-to-reach, remote and rural locations (See et al., 2020). Incentives may lose impact when reduced or removed (Evans and Mendez Acosta, 2023, See et al., 2020), highlighting the need to couple them with broader reforms to have a longer-term effect. For example, in Sobral, Brazil, incentives were integrated into broader strategies for teacher training and school improvement (Loureiro et al., 2020). This approach acknowledges the multifaceted nature of teacher shortages and the complexity of scaling school improvements.

Unequal working conditions have a detrimental impact on the attractiveness to and retention of teachers in the profession, particularly among those under greater vulnerability.

Increasing reliance on contract teachers to address teacher shortages can have implications for the quality and stability of the teaching workforce. In addition, one of the limitations of such practice is the major differences contract teachers can have with permanent teachers in terms of their training and working conditions, as they are often undertrained, underpaid, and younger, inexperienced teachers (Chudgar et al., 2014).

In Cameroon, for example, state-contracted teachers receive a basic monthly salary equivalent to two-thirds of what civil servants receive. They are entitled to various bonuses, allowances, step advancements every two years, and a retirement pension, mirroring the benefits available to civil servants, while performing similar tasks under comparable conditions (Abdourhaman, forthcoming). Education systems should develop flexible structures that allow contract teachers to have the opportunities for further professional development and to access more stable or even permanent working conditions if they meet requirements. For instance, Mexico regularized 800,000 contract teachers, who became eligible for permanent positions after six months on the job (Education International, 2023b). Similar steps were taken in Benin and Indonesia to integrate contract teachers into the civil service (UNESCO and Teacher Task Force, 2019).

Similarly, refugee teachers often face unstable employment and are marginalized in host countries' education systems (UNGA, 2023), which may lead to a massive loss of qualified teachers. For example, during the Syrian refugee crisis, a significant number of qualified refugee teachers were lost from the teaching workforce when they were denied the right to work, faced unrecognized qualifications, or encountered language barriers in the host country that hindered their return to the classroom (Culbertson and Constant, 2015; Mendenhall et al., 2018). Governments should use UNESCO's global convention on qualification recognition to facilitate the acknowledgement of teachers' international qualifications and experience and in turn, support teacher retention.



Refugee teachers' unstable employment and marginalization can cause a major loss of qualified teachers

Accountability systems and assessments may be a double-edged sword, affecting the attractiveness of the profession and the well-being of teachers.

While some countries have supportive and non-punitive systems, others employ strict accountability measures that have been reported to negatively affect teacher recruitment and retention (Perryman and Calvert, 2020). PISA 2015 data from 50 countries showed a negative correlation between test-based accountability and highly skilled students' willingness to become teachers (Han, 2018). Moreover, a study of 40 OECD countries finds that stress and accountability are linked (Jerrim and Sims, 2022), while weak accountability systems may also influence teachers' motivation (Bennell and Akyeampong, 2007). Conversely, professional and participatory accountability mechanisms involving teachers sharing insights and receiving feedback from peers may stimulate autonomous motivation and can be found among practices observed in successful education systems (Tournier et al., 2019). In Finland the only standardized examination is the secondary matriculation test, but principals do not use its outcomes for assessing teachers. On the contrary, teachers are expected to drive their own development, which contributes to the status of teachers as autonomous and reflective professionals (Akiba et al., 2023).

IV. Financing the teaching profession

Education expenditure: disparities, challenges, and implications for teachers

Global averages in education expenditure have remained relatively consistent over time (UIS, 2023; World Bank, 2023). However, there remain significant gaps in educational funding, as a percentage of gross domestic product (GDP), between high and low-income countries (see Figure 6). Macroeconomic factors such as COVID-19, armed conflict, inflation, and climate change, are causing stress on the global economic conditions and on education spending.

Macroeconomic conditions matter for education.

Evidence indicates that education quality and economic growth are positively correlated (Hanushek and Woessmann, 2021) so investing in education can lead to a cyclical relationship of better-quality education and economic growth. However, improving education spending efficiency is also essential (UNESCO and World Bank, 2023).

In the Education 2030 Framework for Action, the established financing target was set at 4 to 6 per cent of GDP allocated to education. Regarding the allocation of government expenditure on education, the goal was to dedicate a minimum of 15 to 20 per cent of public expenditure to education.

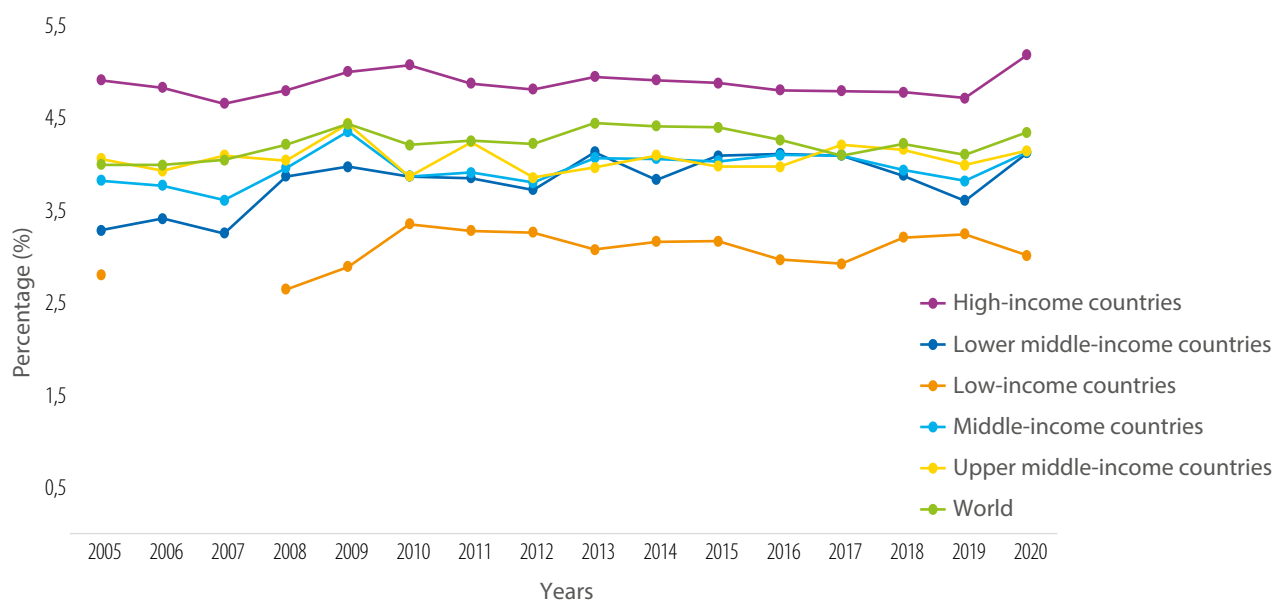
Latin America and the Caribbean, sub-Saharan Africa and Southern Asia struggle to meet expenditure targets of GDP to education.

In Latin America and the Caribbean, around one-third of countries did not meet the 4 per cent minimum target, and five countries are above the 6 per cent of GDP: Bolivia (Plurinational State of), Belize, Curaçao, Costa Rica and Honduras. Similarly, more than half of sub-Saharan African countries did not meet the minimum 4 per cent target, with Namibia, Sierra Leone, Botswana, Lesotho, Cabo Verde, Mozambique, and South Africa expending beyond 6 per cent of GDP.

High-income countries, on average, do not reach the 15 to 20 per cent benchmark of public expenditure in

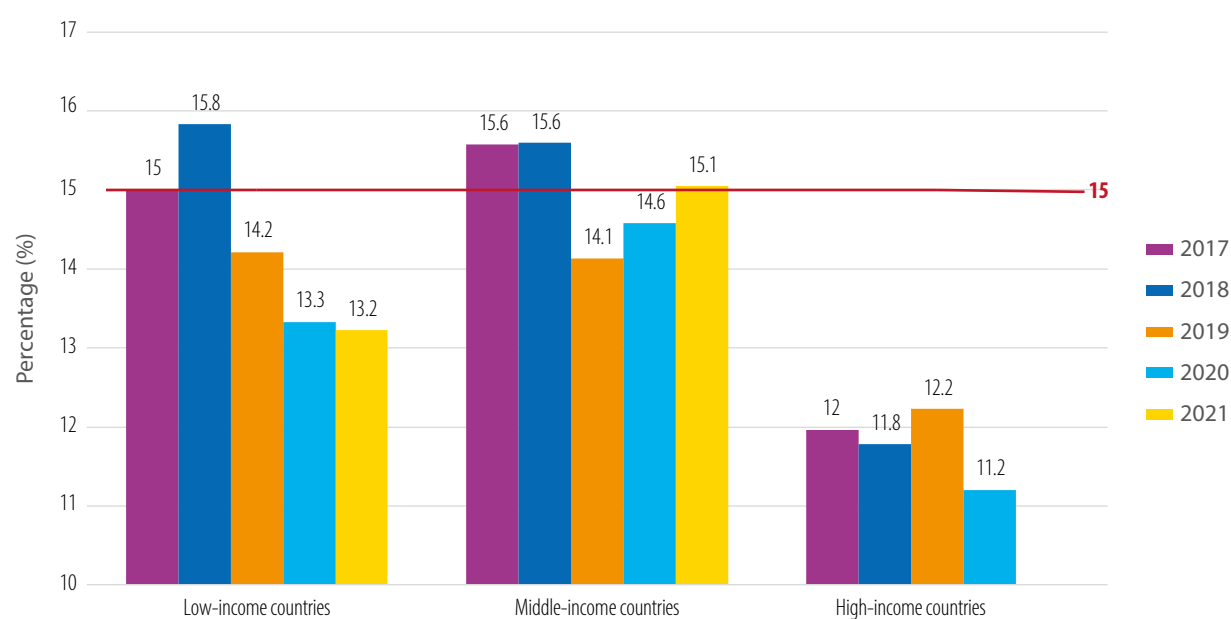
education either. Most of them, however, reach 4 to 6 per cent of GDP allocated to education (see Figure 6 and 7).

Figure 6. Government expenditure on education as a percentage of GDP, by country income group, 2005-2020



Source: World Development Indicators database, World Bank, 2023. Based on UIS, 2023c. Adapted from Connolly and García-Chinas, forthcoming. Date of database consultation: 29 May 2023.

Figure 7. Average expenditure on education as a percentage of total government expenditure, by country income group, 2017-2021

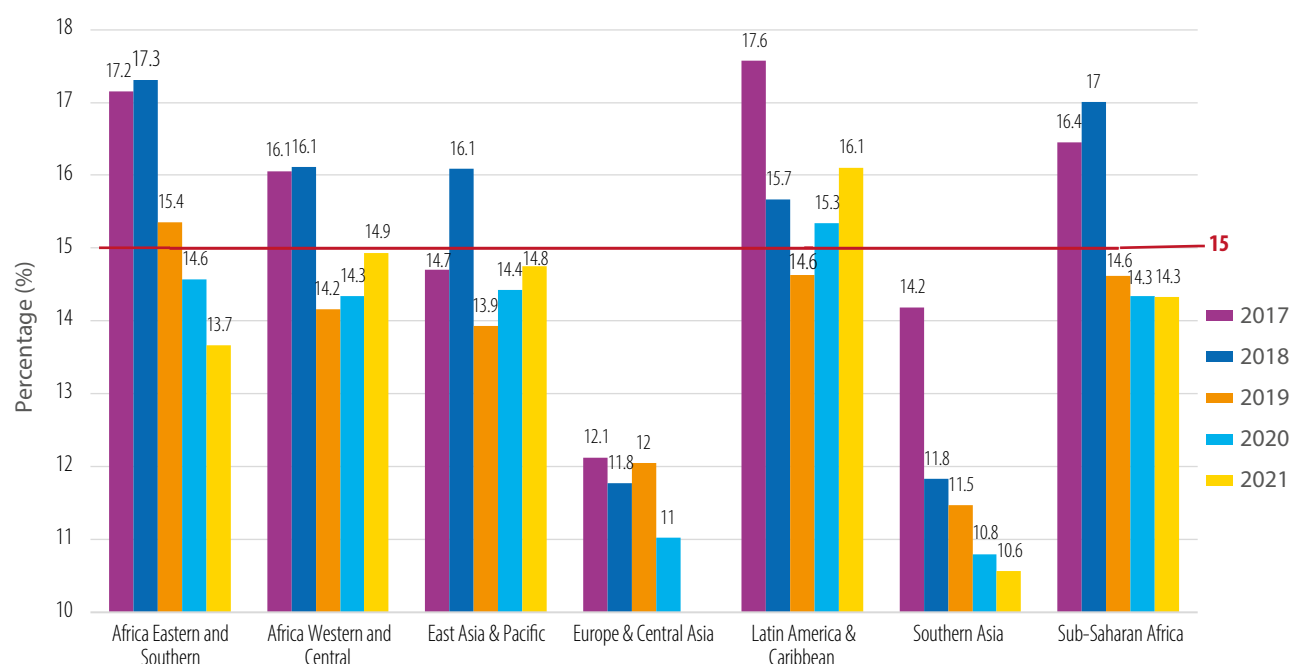


Source: World Development Indicators database, World Bank, 2023. Based on UIS, 2023c. Adapted from Connolly and García-Chinas, forthcoming. Date of database consultation: 22 September 2023.

Analysis also warns of alarming trends in two regions: Eastern and Southern Africa and Southern Asia. There is a sharp decline in the percentage of public expenditure in education in Eastern and Southern Africa (from 17.2 to 13.7 per cent), and in Southern Asia (from 14.2 to 10.6 per cent) from 2017 to 2021 (see Figure 8). In addition, when it comes to percentage of GDP to education, most countries allocate the lowest percentage to pre-primary education. In contrast, the bulk of their education budgets as percentages GDP are directed towards primary and secondary levels (UIS, 2023c).

There is great variety between and within regions in terms of education expenditure. Some countries make strong commitments to education with spending that exceeds the agreed targets. However, it is noteworthy that very few nations surpass both benchmarks, such as Uruguay, Burkina Faso, Tajikistan, Mozambique, Israel, Iceland and Saudi Arabia (see Figure 9). In 2020, sub-Saharan Africa as a whole allocated only 3 per cent of its GDP to education, despite the fact that a few countries within the region do allocate a substantial share of their expenditure to education (UIS, 2023c).

Figure 8. Average expenditure on education as a percentage of total government expenditure, by region, 2017-2021

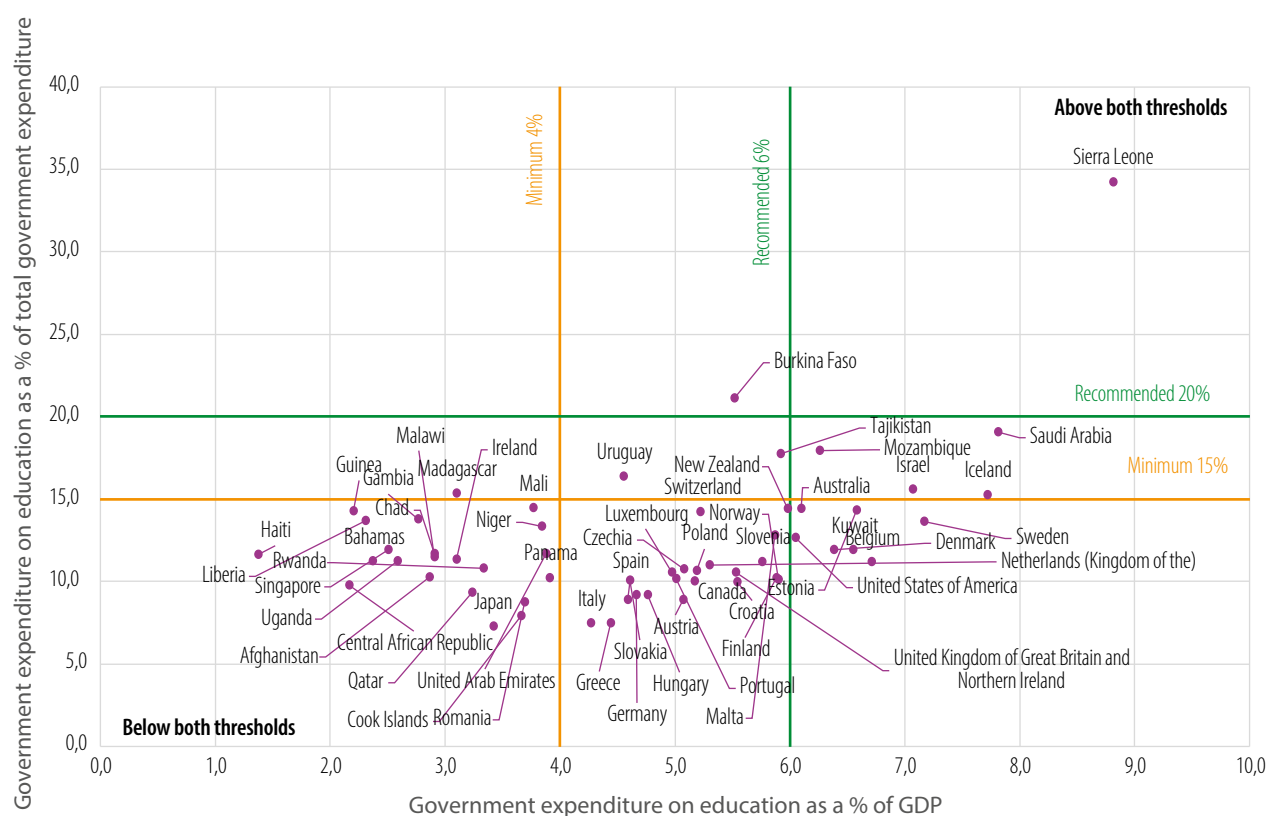


Source: World Development Indicators database, World Bank, 2023. Based on UIS, 2023c. Adapted from Connolly and García-Chinas, forthcoming. Date of database consultation: 22 September 2023.



There is a sharp decline in the percentage of public expenditure in education in Eastern and Southern Africa (from 17.2 to 13.7 per cent), and in Southern Asia (from 14.2 to 10.6 per cent) between 2017 and 2021.

Figure 9. Spending thresholds (GDP and total public expenditure) — high- and low-income countries, 2020 or latest data available



Source: UIS, 2023c and UNESCO and Teacher Task Force, 2023a. Adapted from Connolly and García-Chinas, forthcoming. Date of database consultation: 27 September 2023.

Investing in recruitment and retention

Education spending must be viewed as an investment rather than consumption, and innovative approaches should be explored, to acknowledge the medium- and long-term benefits it yields (United Nations, 2022a).

Many low-income countries often have a low tax-to-GDP ratio. Increasing this ratio could help address teacher shortages, as a 1 per cent GDP spending increase could potentially allow the recruitment of 8 million new teachers (Education International and ActionAid International, 2022).

Mobilizing sufficient domestic financing is key to ensure secure adequate and attractive pay for all teachers. Approximately 75 per cent of education spending in low- and lower middle-income countries is allocated to teachers' costs (Global Partnership for Education, 2022). Therefore, education expenditure is key to understanding the cost of funding new teaching

positions, and to money spent resourcing and supporting teachers. Worryingly, foreseen austerity policy measures in some countries may significantly affect public expenditure. As teachers constitute the largest group in the public sector wage bill in many countries, cut or frozen public sector wage bills often lead to cuts in teacher numbers or in their salaries (ActionAid International, 2023). This is the case even in countries with teacher shortages and where teachers are underpaid (ibid.).

High teacher turnover is costly, affecting schools, governments, and student learning. In the USA, replacing a single teacher was estimated to cost approximately \$20,000 USD in 2017 (Carver-Thomas and Darling-Hammond, 2017). Notably, the costs of both turnover and attrition are rarely systematically measured (Levy et al., 2012), and research in this critical area remains limited.

As there are significant costs associated with training and recruiting teachers, one sustainable strategy is to enhance the retention of novice teachers. This too requires investment as, although they have lower initial salaries, the expense of training and recruiting them must be considered.

Investing in continuous professional development plays a pivotal role in retention; however, it is noteworthy that most countries do not assess cost-effectiveness of continuous professional development initiatives. In England in the United Kingdom, in the case of science teacher training, these initiatives significantly improved teacher retention, reducing attrition from 1 in 13 to 1 in 30 teachers (Allen and Sims, 2017). Another study estimated that introducing an entitlement policy of 35 hours every year of high quality continuous professional development for all teachers in England would cost approximately GBP 4 billion over ten years but create a net social benefit of GBP 61 billion over those ten years. (Van den Brande and Zuccollo, 2021).

Providing schools with adequate sanitation facilities is an investment to improve recruitment and retention (Sisouphanthong et al., 2020), **which may prove cost-effective.** Analysis of pupil-trained teacher ratios and teacher preferences in Malawi suggest that provision of basic WASH amenities is related to fewer teacher shortages (Asim et al., 2019).

The working conditions of teachers are the learning conditions of students. Under-resourced schools imply the existence of deficits that require teachers to make additional efforts to accomplish all expected tasks and this, in turn, affects both student learning and teachers' well-being.



The working conditions of teachers are the learning conditions of students.

V. Recommendations and policy measures

In view of the analyses currently undertaken for the *Global report on teachers* and following the work of the Committee of Experts on the Application of the Recommendations concerning Teachers (CEART), the Special Rapporteur on the right to education, and the Secretary-General's High-Level Panel on the Teaching Profession, the following recommendations and policy measures are essential to address the systemic and persistent global teacher shortages and ensure an adequate supply of teachers to achieve universal primary and secondary education, accelerate the achievement of SDG4 (including target 4.c on teachers) and, more generally, advance the Education 2030 Agenda.

- 1. Develop holistic teacher policies** aligned to national priorities and the policy landscape that include all dimensions affecting teachers in an integrated manner, using a collaborative framework and social dialogue. This approach aims to improve the status of the profession, ensuring national objectives are effectively achieved while also reflecting the needs of teachers. The participation of teachers and their organizations in educational policy-making is not only an important lever to democratizing education policy but also to making the profession more attractive.
- 2. Collect more and better data.** Tracking progress towards SDG4.c needs greater efforts to systematically report on the indicators agreed in the Education 2030 Framework for Action. More and disaggregated data is needed to know who the teachers are, where they are and what they need, in terms of professional development, career mobility and otherwise. For this
- the development of teacher management and information systems are paramount to strategically predict and manage demand for teachers, track their professionalization and career development, and ensure equitable deployment of qualified teachers across all regions, levels of education, and sectors of society, including those most marginalized. The adoption, use of and application of the ISCED-T to classify teacher training programmes will be an important step towards more internationally comparable data.
- 3. Transform teacher education and professional development** from course-based, individual endeavours to lifelong, collaborative, and teacher-led processes. The role of teachers as knowledge producers and the systematization, use and exchange of their pedagogical solutions should be at the centre of the transformation of education. Making teaching

an intellectually stimulating profession will improve attractiveness and retention for prospective teachers.

4. **Improve the working conditions of teachers**, beginning with salaries and incentives to ensure teachers receive competitive compensation and benefits, especially when compared to other professions requiring similar levels of qualifications and ensuring gender equality in pay and treatment. Well-structured and defined vertical and horizontal career pathways that provide equitable opportunities for advancement are important to motivate teachers to remain in the profession, as is teacher well-being and work-life balance. Recognition, trust, and appreciation for the work of teachers are among the most effective symbolic conditions that make a difference in teacher retention.

5. **Enhanced international cooperation** is needed to engage different constituencies at international level in collaborative efforts to address teacher shortages and amplify the outreach of teacher policies. This includes development aid for education and coordinated, multi-partner programmes to address shortages, but also to enhance collaboration and mutual learning from shared experiences and good practices globally.

6. **Ensure adequate funding** that is consistent with the existing benchmarks of 6 per cent of GDP and 20 per cent of total government expenditure, and whose distribution targets not only the teacher wage bill, but also the needs to make the profession more attractive and to elevate the quality of teaching.



Consult the references used for this document at: <https://bit.ly/GRTHRefs>



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International
Task Force on Teachers
for Education 2030

Global report on teachers

Addressing teacher shortages

HIGHLIGHTS

This document offers a glimpse into the first *Global report on teachers*. Backed by new data and comprehensive research, the report will fill a knowledge gap and advocate for enough, empowered and well-trained teachers who are supported within well-resourced, and effectively governed education systems. The first edition will address teacher shortages and the challenges hindering access to qualified teachers worldwide. The Report will shed light on the complex dynamics of the teaching profession and offer a transformative vision for the future. It's a key resource for policy-makers and advocates driving global education reform.

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