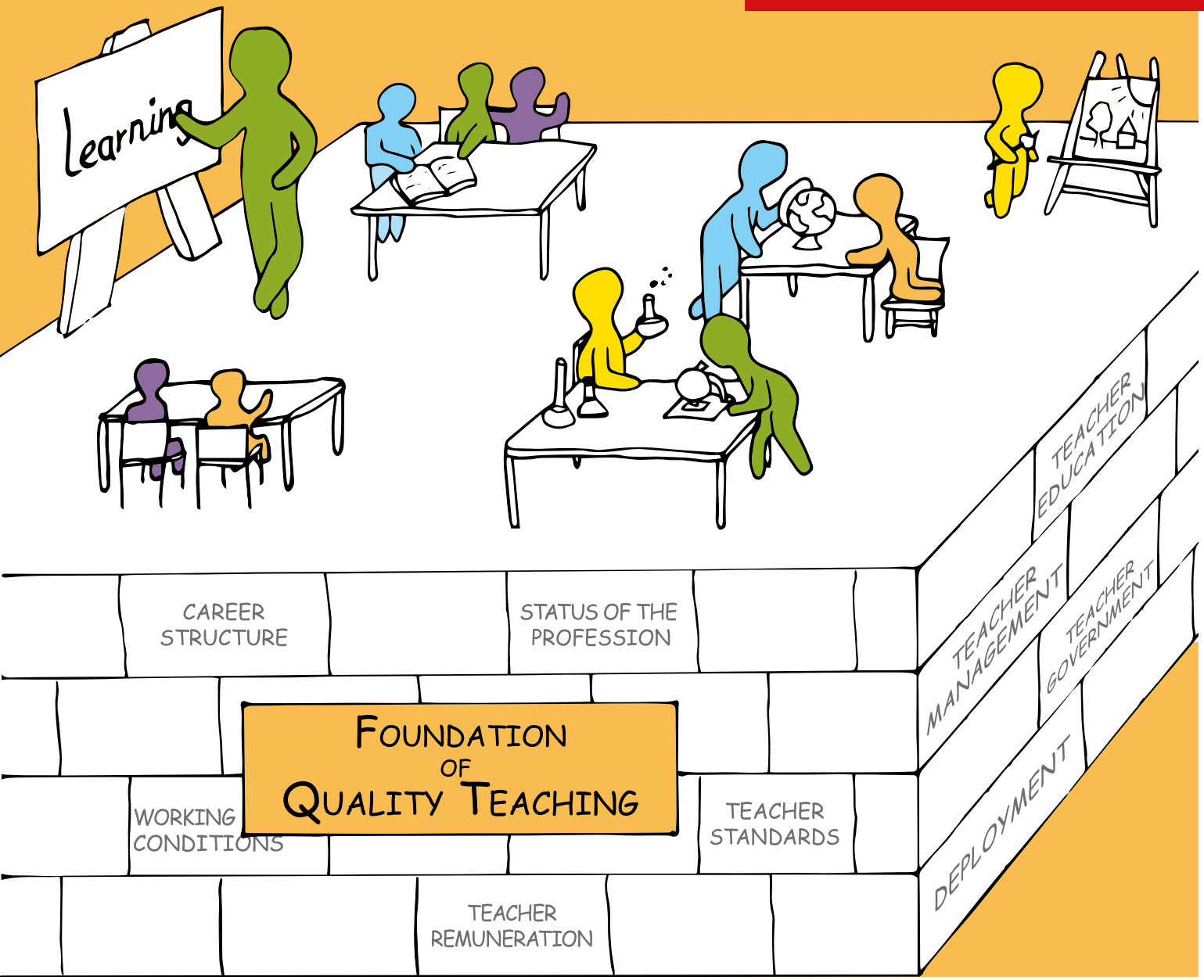
Teachers and teacher policy in primary and secondary education

Discussion Paper Education



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für Internationale
Zusammenarbeit (GIZ) GmbH

for TEACHERS
EDUCATION 2030

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List of abbreviations and acronyms

BMZ	German Federal Ministry of Economic and Development Cooperation
CCTs	Cluster Centre Tutors
CPD	Continuing Professional Development
CSO	Civil Society Organization
ECE	Early Childhood Education
EFA	Education For All
EFA-FTI	Education For All - Fast Track Initiative
EI	Education International
EMIS	Education Management Information System
ETP	Extra Teacher Program
GDP	Gross domestic product
GER	Gross enrolment ratio
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
GPE	Global Partnership for Education
GTC	General Teaching Council
HIV	Human Immunodeficiency Virus
IIEP	International Institute for Education Planning
ILO	International Labour Organization
INEE	Inter-agency Network for Education in Emergencies
NGO	Non-Governmental Organization
OECD	Organisation for Economic Co-operation and Development
PIRLS	Progress in International Reading Literacy Study
PISA	Programme for International Student Assessment
PTR	Pupil/teacher ratio
SACMEQ	Southern and Eastern Africa Consortium for Monitoring Educational Quality
SDG	Sustainable Development Goal
SNED	National System of School Performance Assessment
TEMIS	Teacher Management Information System
TIMSS	Trends in International Mathematics and Science Study
TTF	International Task Force on Teachers for Education 2030
UIS	UNESCO Institute for Statistics
UNESCO	United Nations Educational, Scientific and Cultural Organization
WASSCE	West African Senior School Certificate Examination
WAEC	West African Examinations Council

Preface and Acknowledgements

This discussion paper was created to give an overview of relevant areas regarding the world-wide shortage of teachers called the teacher gap, provide an insight in its causes and consequences and investigate the role of teacher policy in primary and secondary education, excluding the subsector technical and vocational education and training. In about 40 pages, it tries to systematically compile essential basic knowledge of educational planning with regard to the topic of teachers. Thus it aims to provide an overview to staff who need to become familiar with this topic in a limited timeframe or who are looking for a brief but holistic compendium of the subject matter. Amongst others, this paper is aimed at:

- educational planners and policymakers in ministries;
- decision makers in donor and multilateral organizations; and
- researchers and practitioners in development measures.

To our knowledge, no publication exists that provides such a brief and quick but comprehensive introduction into this topic. It is called a discussion paper due to the fact that it does not claim to have covered all aspects in detail but rather gives an overview of relevant topics that still need further discussion in the respective context and situation. Therefore, it invites experts to complement this discussion paper with additional or new evidence wherever applicable.

In addition, the conceptualization of this document was based on a long discussion process. Prof. Dr. Aidan Mulkeen with the support of the Sector Programme Education of the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH created a first draft that was discussed in the German Federal Ministry of Economic and Development Cooperation (BMZ) with representatives of German governmental and non-governmental actors of development cooperation. This took place in the beginning of February 2013. Afterwards, the draft was circulated amongst members of the Network of the International Task Force on Teachers for Education 2030 (TTF). Then feedback by individuals and organizations from its first discussion and from the network of the TTF was collected. In a further step, Ilse Voss-Lengnik incorporated the feedback and added chapter seven on Teacher Policy. The last process was a peer review by William Ratteree. Erfan Diebel (GIZ-Sector Programme Education) was in charge of editing.

Special thanks to all three authors. Without their contributions this discussion paper would not have been possible. We also would like to acknowledge the support of the following persons and thank them all for their time and effort: Alice Kunz, Britta Malinski, Coco Kuipers, Hedwig Osvath, Irene Mukasa-Erben, Julia Reczkowski, Kristina Kreuzer, Lina Thillosen, Markus Kaistra, Oliver Liang, Dr. Roland Baecker, Rouven Bashir-Elahi, Sian Tesni, and Dr. Simone Doctors.

Finally, one last remark should be made concerning cases when common knowledge is expressed: we have tried to avoid references in order to make the paper as short and reader-friendly as possible. In these cases most of the information can easily be found in the publications *Education for All (EFA) Global Monitoring Report 2013/14: Teaching and Learning: Achieving quality for all and the Teacher Policy Development Guide.*

Bonn/Germany, Paris/France in September 2017

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Discussion Papers Education
The GIZ Sector Programme Education compiles discussion papers on current debates in international development cooperation in the area of education on behalf of BMZ and in cooperation with national and international partners like the United Nations Educational, Scientific and Cultural Organization (UNESCO) and TTF. The discussion papers provide in-depth professional insights into the respective topic. The opinions, positions and recommendations of the authors presented in this paper do not necessarily reflect the opinion of BMZ, GIZ, UNESCO, TTF or any other organization.

Executive Summary

The importance of teachers for quality education

Access to education is a human right (Universal Declaration of Human Rights, article 26), and the right to primary education of good quality is part of the United Nations Convention on the Rights of the Child. Education improves the health conditions of individuals, offers opportunities for better income and contributes to a country's economic and social development. It is an investment into the future. Recognizing the high relevance of education, the international community adopted Sustainable Development Goal (SDG) 4 in 2015. This goal stipulates "inclusive and equitable quality education and promotion of lifelong learning opportunities for all".

While substantially influencing quality and equity of an education system, a large body of national and international evidence points to good teachers and teaching as the most important factors determining learning outcomes in schools, i.e. how much children learn. These factors are especially determinant in overcoming disadvantaged learners' deficits. Accordingly, a sufficient number of qualified teachers is required in order to guarantee the rights of children to education and the achievement of SDG 4.

Teachers also account for the bulk of education investments and expenditures and are the principal human resource in any education and training system.

Making the best possible use of this important human resource to ensure the highest quality of learning depends on education system support through a set of policies, commonly termed a holistic teacher policy. Such a policy encompasses (i) thorough and relevant initial teacher education, remuneration and other incentives that attract and retain the best candidates in the profession compared to similar professionals, (ii) teacher deployment that meets equity and inclusion needs, (iii) continuing professional development and (iv) safe, healthy and stimulating teaching and learning environments.

The teacher gap

A number of factors cause a high demand for qualified teachers. Among these are the rapid expansion of participation in primary education, population growth and age distribution (with a high proportion of the population in school age). Projections of the UNESCO Institute for Statistics (UIS) state that until 2030 3.4 million additional teachers are needed to achieve universal primary education and 16.7 million to cover secondary education, most of them in sub-Saharan Africa (2.4 million for primary education and 7.1 million for secondary level).

However, due to inadequate planning, financial constraints and a lack of secondary school graduates and teacher training capacities, there is a lack of qualified teachers in many low- and middle-income countries worldwide to meet this demand. This lack of teachers, and particularly of adequately qualified teachers, to achieve universal primary education and SDG 4 has become a focus of development policy and has been termed the teacher gap.

The teacher gap is exacerbated by an uneven distribution of teachers with regard to location, social identity and specialization. Already disadvantaged schools in rural and remote areas or schools serving minority populations experience particular difficulties in receiving enough qualified and committed teachers. This applies even more to teachers with scarce subject specializations such as science or mathematics, a cause of teacher shortages also in high-income countries, as well as female teachers and teachers from social minorities.

Strategies to address the quantitative teacher gap

Governments are employing a diversity of strategies to cope with the quantitative teacher gap. In order to raise the number of teachers in schools, initial teacher education may partly be done school-based. Other countries ease the gap by employing so-called contract teachers at lower entry requirements, lower salary scale and without permanent contracts. Even though this strategy helps to reduce the pupil/teacher ratio and provide more teachers to rural and disadvantaged areas, there is mixed research evidence on the impact of contract teachers on learning outcomes, with considerable evidence that such policies lead over time to deprofessionalization of teaching and zero or negative impact on learning.

To attract more candidates for teacher training, entry conditions may be reduced, either for all applicants, or selectively

for applicants from remote areas. However, such policies work to create a deprofessionalization of teaching, leading to lower-quality recruits, to teaching, absenteeism and "moonlighting" (taking on second or third jobs) or engaging in private tutoring at the expense of the main teaching commitment – consequences that work against teaching quality.

Salary increases are another means to attract more young people into the teaching profession. However, this may not be sustainable and has resulted in some low-income countries paying teacher salaries much higher than 3.5 times the gross domestic product (GDP) per capita, a guideline value recommended by the Education for All - Fast Track Initiative (EFA-FTI)/Global Partnership for Education (GPE). Use of such benchmarks does not necessarily account for the comparable salaries needed in a national context to attract or retain teachers. If salary benchmarks are to be used, it is advisable to apply them flexibly and to adjust them as a function of the country's GDP and capacity to pay. To attract more school graduates to the profession, particularly to teaching in remote and disadvantaged areas, various other incentives are in use, ranging from financial gratuities to accelerated access to further qualification or promotion.

Most strategies to increase the number of teachers require an increase in educational spending and involve difficult trade-offs between raising the number of teachers and improving their professionalism and qualification.

Low- and middle-income countries will need to substantially invest more of their own national income in education. They are required to increase tax collection and public sector investments: according to the Education 2030 Framework for Action, governments shall allocate at least 4 to 6 per cent of the GDP and/or 15 to 20 per cent of public expenditure to education.

Alternatives to meet teacher shortages also lie in adopting a comprehensive teacher recruitment and deployment strategy, factoring in quantitative needs, qualitative concerns and current and future needs in the deployment of teachers.

The quality challenge

As much concern as there is regarding the numbers of teachers, there is also concern regarding the quality of teaching and learning. Learning outcomes in low- and middle-income countries often fall far below their own standards of learning and even more so below international standards. The reasons for this low performance include (i) teacher factors like a low level of subject knowledge, pedagogic skills and professional motivation, and (ii) system factors like constraints in managing and supporting teachers adequately and deficiencies in school environment.

The low level of teachers' competencies results at first from an initial intake of students with poor qualifications to the teacher education courses. The lack of qualified candidates results from a relatively small number of secondary school graduates in many low- and middle-income countries as well as a low interest in the teaching profession among qualified graduates. Due to the low social status of teachers in some countries and the lower remuneration of teachers as compared to the private sector, the teaching profession is sometimes seen as a lesser choice among secondary school graduates.

Initial teacher education is often not adequate, with outdated curricula, which neither convey adequate subject knowledge nor essential didactical knowledge and teaching skills like lesson planning, teaching methodology and didactics, learning assessment, classroom management, recognizing and supporting students with disabilities, or the principles of inclusive education. Teacher students do not learn how to teach, i.e. how to facilitate children's learning, but resort to transfer of facts, memorization and rote learning.

Systems of teacher support and management are weak and not sufficiently defined. For example, in-service training or continuing professional development (CPD) aiming at filling the gap left by initial training is often not affordable and not included in the education budget. A further constraint to good teaching and learning is a notorious lack of learning materials, leaving teachers with nothing more than chalk, blackboard and outdated textbooks.

School principals play an important role in ensuring the quality of teaching in their schools. However, principals are mostly recruited from senior teachers and often not given any additional training and support for their complex responsibilities that include maintaining school discipline and contact to parents, supporting teachers and emphasizing an overall vision of their school. Similarly, school inspectors lack training and support, are often in charge of a large number of schools and therefore not in a position to offer professional support but only focus on administrative matters.

Strategies to address the quality challenge

Some strategies to address the quality challenge aim to improve teacher education, including enhancing the quality of initial teacher education, improving the selection of candidates for the teaching profession, provision of in-service training and systems of CPD for teachers. Other strategies aim to improve school management, e.g. through training of school leaders, different systems for monitoring teacher attendance to reduce loss of teaching time and provision of teaching kits, teaching aids, additional reading materials for students. A third set of strategies to address the quality challenge aims to make teachers more accountable for their performance. These strategies include performance management through the formulation of standards for student

learning and teacher performance in order to measure, monitor and offer support to teaching and learning along with an involvement of communities in the monitoring of schools. Performance management systems depend in the first place on good evaluation frameworks.

An alternative approach to accountability through top-down managerialism relies on increased teacher professionalism as a guarantor of teaching and learning quality, based largely on elements of teacher autonomy, self-motivation, a sense of empowerment as a professional and a provision of effective professional support and acceptable working conditions. The approach is a key strategy of what is termed high performing education systems and provides an alternative to weak management systems in poorer countries.

Policy guidelines for improved teaching and learning also emphasize class size regulations and workload specifications to meet teacher effectiveness and learning goals, especially learner-oriented approaches, a variety of instructional approaches and needs of specific groups such as disadvantaged learners, dual-language classes, learners with special educational needs, early childhood and early primary learners. Teacher allocation should be set according to country contexts to ensure equity between regions/districts and rural and urban areas and to provide training and support to teachers for adapting teaching methodologies to different contexts.

Many of the varied and numerous efforts, often financed and supported through external sources, do result in improved teaching and learning. Nevertheless, the effects are often too limited in time and scope to have a broad and sustainable impact. Moreover, efforts are often not sufficiently coordinated or comprehensive enough to unfold the synergies needed for sustainable change.

Stakeholders

The content and extent of education reforms, including teacher policies, are often determined by the pressure applied by various stakeholders in the education sector. Parents are important stakeholders in education but mostly not organized. While teacher unions may have been solely focused on salary negotiations and may have adversely affected education through teacher strikes in some countries, they play an increasingly constructive role in other countries, cooperating with the government in various ways with a focus on maintaining quality education. Non-governmental education providers include non-profit and for-profit providers. They mostly employ teachers trained in government institutions, but define conditions of employment, payment, etc. and monitor teachers according to their own rules. Government stakeholders in education include the relevant ministries, universities and the development partners cooperating in the education sector. Education ministries have to comply with the financial limits set by the government and are responsible for the definition of all regulation regarding teachers and their employment.

Teacher Policy

To tackle the teacher crisis, the Education for All (EFA) Global Monitoring Report 2013/14 called for making teaching quality a national priority and a strategic objective in education plans, attracting the best candidates, improving teacher training and retaining the best teachers in schools. This requires a comprehensive and synchronized teacher policy which is supposed to eventually replace the tendency to respond to teacher and teaching quality issues in an insufficiently coordinated and non-comprehensive way.

A teacher policy is a set of definitions, regulations, plans and strategies put in place to ensure adequate, fair and sustainable working conditions for teachers, enabling them to do their work as effectively as possible. It includes (i) entry conditions into teaching, (ii) rules for teacher deployment and strategies how to distribute teachers evenly and fairly to all schools, (iii) a code of conduct and performance standards for teachers, (iv) regulations regarding working time, (v) criteria for incentives, (vi) salary structures, (vii) regulations for teachers' career paths, (viii) regulations regarding teachers with disabilities and teachers of students with special needs, minority and refugee students, teaching under emergency conditions, contract teachers and teachers of multi-grade classes, but also (ix) standards for school facilities, pupil-teacher ratios and inclusive education since all these have an effect on teachers' working conditions.

The TTF, an alliance of national governments, intergovernmental organizations, non-governmental organizations (NGOs), civil society organizations (CSOs), international development agencies, and private sector organizations hosted by UNESCO, has launched a "Teacher Policy Development Guide" in 2015 as a tool to assist countries in developing a comprehensive teacher policy. The Guide is the first document systematically introducing all facets of teacher policy and is used in the present document as main reference. It includes the following dimensions: (i) teacher recruitment and retention, (ii) teacher initial and continuing education, (iii) deployment, (iv) career structures (v) employment and working conditions, (vi) teacher reward and remuneration, (vii) teacher standards and accountability, and (viii) school governance.

Standards and regulations of a teacher policy have to complement each other, be matched and synchronized, and based on the conditions, national policies and education sector targets. It should be comprehensive, applicable to all teachers and schools, recognize the needs and interests of all concerned and be acceptable to key stakeholders, above all to teachers. Participation of all stakeholders in the development

of a teacher policy is therefore essential, including teachers and their representatives, teacher unions and regulatory bodies, ministries of education and planning and local government bodies, representatives of the civil society, parents and students and their representatives, representatives of the private sector, and international agencies.

Given the ambitious requirements and the high number of stakeholders, the elaboration of a teacher policy is a complex political process, likely to require compromises between stakeholders and trade-offs between competing priorities. An important prerequisite for formulating a teacher policy is therefore political will and ownership by the country. Further requirements are adequate funding and the capacities necessary for the elaboration of work plans as well as for the implementation and monitoring of the policy.

While a well-elaborated, accepted and implemented teacher policy has the potential to solve the teacher crisis in a country, there are potential difficulties and complications that hinder the full elaboration, effective implementation or monitoring of the policy, especially in countries or education systems where governance and the rule of law are relatively weak.

The way towards a teacher policy might eventually be paved through recognition of its importance as a means to enhance the quality of teachers as the single most important influenceable factor determining the quality of children's learning in school. A well-qualified and motivated teaching cadre is the key to quality education, and to be well qualified and motivated, suitable regulations are indispensable. For the attainment of SDG 4, "inclusive and equitable quality education and promotion of lifelong learning opportunities for all", a sufficient number of qualified and motivated teachers is a prerequisite. For teachers to stay in their posts and offer quality education, they have to be selected and recruited properly, trained comprehensively, deployed fairly and supported adequately through CPD. For the teaching profession to become an acceptable or attractive choice, employment and working conditions have to be defined and include chances for career development. For teachers to become committed and motivated professionals with high expectations for themselves and their students, they have to be granted some autonomy and participation in social dialogue and discussions regarding education, particularly in issues relating to their own working conditions. Ultimately, the responsibilities and rights of teachers as employees as well as the responsibilities and rights of the education system as their employer have to be defined and the fulfilment of the mutual responsibilities continuously monitored.

1 Introduction: The challenges of a teacher policy

Access to education of good quality is recognized as a basic right for all children, laid down in the United Nations Convention on the Rights of the Child of 1989 as well as in the SDGs adopted in 2015. Articles 28 and 29 of the Convention on the Rights of the Child state that all children have the right to free primary education in schools run in an orderly way and free of violence, abuse and neglect. Education should develop each child's personality, talents and abilities, and encourage children to respect others as well as their own and other cultures and environments. Minority and indigenous children have the right to learn about their culture, language and religion. Wealthy countries should help poorer countries to achieve these rights.[1] The Agenda 2030 for Sustainable Development includes Goal 4 on education, which stipulates "inclusive and equitable quality education and promotion of lifelong learning opportunities for all". Article 4.c of Goal 4 asks to substantially increase the supply of qualified teachers, including through international cooperation for teacher training in developing countries.[2]

Teachers are at the heart of education systems and successful learning outcomes. The world's unique international standard on teachers, developed in the 1960s, first recognized the international consensus: that educational advances depended largely on the qualifications and ability of teaching staff, specifically the human, pedagogical and technical qualities of individual teachers.[3] Substantial national and international evidence since then points to good teachers and teaching as the single most important factor determining learning quality, especially important for overcoming disadvantaged learners' deficits.[4]

Teachers also account for the bulk of education investments and expenditures. They are the principal human resource in any education and training system and the largest single financial component of any education authority's budget – anywhere from 60 per cent in OECD[5] member countries to 80 per cent or more of recurrent public education expenditures in other countries (expenses other than capital investments, such as school infrastructure).[6]

Therefore the best possible use has to be made of this important human resource, enhancing and promoting teachers' capacities and professionalism, creating and maintaining conducive learning environments as well as fair working conditions for teachers since "teachers can only shine in the right context".[7] Teachers are part of an education system and their effectiveness depends on how the system involves and supports them. Defining this requires well-planned action, matching the conditions and priorities of each country, and a set of policies aimed at thorough and relevant initial teacher (and school leadership) education, remuneration and other incentives that attract and retain the best candidates in the profession compared to similar professionals, teacher deployment that meets equity and inclusion needs, CPD, and safe, healthy and stimulating teaching and learning environments.[8] These elements form a holistic teacher policy. The aim of this teacher policy is to ensure that: (i) qualified, professionally trained, motivated and well-supported teachers are available for all learners, girls and boys, with and without disabilities, from remote and from accessible areas, from minorities and from mainstream populations; and that (ii)

1 United Nations General Assembly (1989). The Convention on the Rights of the Child.

2 United Nations General Assembly (2015). Transforming our world: the 2030 Agenda for Sustainable Development, document A/RES/70/1.

3 ILO and UNESCO (1966). Recommendations concerning the Status of Teachers.

4 OECD (2005). Teachers Matter: Attracting, Developing and Retaining Effective Teachers, page 2.

5 International Organisation for Co-operation and Development.

6 OECD (2016). Education at a Glance 2016: OECD Indicators, chap. B, page 177ff; UNESCO (2016). Global Education Monitoring Report 2016: Education for people and planet: Creating sustainable futures for all, chap. 20, page 340ff. Methodological Guide for the Analysis of Teacher Issues, page 81.

7 UNESCO (2014). EFA Global Monitoring Report 2013/14: Teaching and Learning: Achieving quality for all, foreword by Irina Bokova, Director-General of UNESCO.

8 UNESCO (2017). Teacher Policy Development Guide, page 13f.

these teachers help to ensure the highest quality of learning within an education system's capacity.

The challenges of teacher policy can be considered under two broad headings; (i) the challenge of ensuring sufficient teachers where they are needed (often defined in terms of the teacher gap), and (ii) the challenge of enhancing and ensuring the quality of teaching and learning. The next sections explore these two interlocking challenges and how teacher policy can help to meet them.

II The teacher gap

2.1 Scale of the problem

Many low- and middle-income countries are experiencing teacher shortages, with not enough teacher posts established in the system, vacant posts and posts filled by un- or under-qualified teachers. High-income countries may also face teacher shortages, usually in academic subject areas (mathematics, science) or due to geographic imbalances (rural or disadvantaged urban areas). Exacerbating the already existing shortage, school-age populations are growing, education systems will expand and retention in the system is expected to increase, hence teacher requirements are projected to grow as well. The UIS projections for the years to 2030 indicate that the number of primary teachers will need to increase by 3.4 million new teaching positions to reach universal primary education and 16.7 million to cover secondary education. The greatest need is in sub-Saharan Africa, where the number of teachers needed is projected to grow by 2.4 million (primary level) and 7.1 million (secondary level).[9] This challenge has become so significant that it has become a focus of development policy, and has been termed "the teacher gap".

Projected increase of teacher numbers until 2030 (in thousands)

Regions	Primary and secondary education									
		Total recruitment needed								
		By 2020			By 2025			By 2030		
	Teachers 2014	Total recruitment needed	Of which:		Total recruitment needed	Of which:		Total recruitment needed	Of which:	
			Replacement for attrition	Staffing new classrooms		Replacement for attrition	Staffing new classrooms		Replacement for attrition	Staffing new classrooms
Northern Africa	1,950	1,051	608	443	1,963	1,193	770	2,689	1,781	909
Sub-Saharan Africa	6,046	8,988	2,428	6,560	12,934	4,879	8,055	17,043	7,558	9,486
Latin America & the Caribbean	6,951	2,279	1,906	373	3,830	3,472	358	5,429	5,068	361
Eastern Asia	12,759	2,596	2,276	320	5,031	4,296	735	6,557	5,822	736
Southern Asia	11,420	8,475	3,328	5,147	11,803	6,579	5,225	14,983	9,838	5,145
South-Eastern Asia	6,195	2,685	1,814	871	4,527	3,658	869	6,266	5,254	1,012
Western Asia	2,803	1,630	884	746	2,647	1,687	960	3,593	2,474	1,119
Oceania	73	62	26	36	90	49	41	117	73	44
Caucasus & Central Asia	1,168	482	346	136	1,056	721	336	1,441	1,064	377
Developed regions	13,021	3,871	3,311	560	7,458	6,611	846	10,710	9,750	961
World	62,386	32,118	16,927	15,192	51,340	33,145	18,195	68,830	48,681	20,149

Source: UNESCO Institute for Statistics (2016). The World Needs Almost 69 Million New Teachers To Reach The 2030 Education Goals, page 15.

9 UNESCO Institute for Statistics (2016). The World Needs Almost 69 Million New Teachers To Reach The 2030 Education Goals, page 1f.

2.2 Overall factors in the quantitative teacher gap

In part, the teacher gap is a failure of planning. With the rapid expansion of primary education following the international commitment to EFA from 1990, the focus of policy was often on the primary sector only, at the expense of secondary education and teacher education. Often the challenges were exacerbated by weaknesses in sector planning, as teacher training was not expanded in line with demand.

There are three underlying structural factors which contribute to the challenge of teacher supply. These three factors: (i) demographic patterns, (ii) the lag effect of rapid expansion and (iii) the financing of teachers – are considered in more detail below.

2.2.1 The demographic challenge

Low- and middle-income countries tend to have higher birth rates than high-income countries and to have a greater proportion of the population of school age. On average, in low-income countries over 12 per cent of the population are in the primary school age group, compared with only 6.1 per cent of the population in high income countries.

In spite of not all children in low-income countries going to school and in spite of higher pupil teacher ratios, low-income countries have a greater proportion of the population in primary school and therefore more primary school teachers (as a proportion of population) than high-income countries. The UNESCO statistics for 2011/12 illustrate the extent of this demographic challenge. In the United Kingdom and France, there are 387 and 359 primary teachers for every 100,000 of population, while in Uganda and Indonesia the figures reach 423 and 684.

2.2.2 The challenge for expanding systems

Finding teachers on this scale is a challenge, particularly in countries where only a limited proportion of young people complete a secondary education. A shortage of teachers is a natural consequence of a rapid expansion in participation in education because the expansion of access begins at primary level, creating an increased demand for teachers in a context where the output from secondary education has not yet increased. In the years following the initial expansion of primary education, some countries, including Lesotho, The Gambia and Eritrea, found that there were simply not enough secondary school leavers to fill the places in teacher colleges. This may lead to falling entry standards.[15] But also the intake capacity of teacher training

Primary school age population as a percentage of total population

Region	Population (000) (2015)	Primary school age population (2011/12)	Primary school age as a percentage of total
World	7,291,097	650,351	8.92
Arab States	373,225	41,289	11.07
Central and Eastern Europe	401,008	19,745	4.92
Central Asia	86,001	5,512	6.41
East Asia and the Pacific	2,280,457	157,407	6.90
East Asia	2,236,926	153,512	6,86
Pacific	43,531	3,894	8.95
Latin America and the Caribbean	625,207	59,491	9.52
Caribbean	18,287	2,240	12.25
Latin America	606,920	57,251	9.43
North America and Western Europe	788,521	50,879	6.45
South and West Asia	1,793,616	174,446	9.73
Sub-Saharan Africa	943,062	141,582	15.01
Countries with low income	904,710	121,431	12.88
Countries with middle income	5,096,560	450,205	8.83
Lower middle	2,615,622	276,233	10.56
Upper middle	2,480,938	173,972	7.01
Countries with high income	1,289,826	78,715	6.10

Source: UNESCO (2015). EFA Global Monitoring Report 2015: Education For All 2000-2015: Achievements and challenges, pages 323, 351-358, 376-383.

Primary teachers per 100,000 of population

	Primary school age (2012)	School age population as a percentage of total	Gross enrolment ratio (GER) (2012)	Pupil/teacher ratio (PTR) (2012)	Teachers per 100,000 of population[10]
Indonesia	7–12	11.1	109	19.0	648
Uganda	6–12	19	110	48[11]	424[12]
Mexico	6–11	11.4	105	28.0	426
Egypt	6–11	11.3	113	28.0[13]	447[14]
Algeria	6–10	7.2	117	23.0	367
United Kingdom	5–10	6.5	109	18.0	387
Mozambique	6–12	18.8	105	55	361
France	6–10	6	107	18.0	359

Source: UNESCO (2015). EFA Global Monitoring Report 2015: Education For All 2000–2015: Achievements and challenges, pages 320 ff.

institutions is often not sufficient and not expanded, and there are not enough teacher educators to train and qualify the numbers of teachers needed.

2.2.3 The financing challenge

The most important challenge, however, is the establishment of additional teacher posts and the payment of their salaries to satisfy the increased need.

Financing teachers is often challenging in low- and middle-income countries, as teacher salaries tend to be higher, relative to per capita income, than in high-income countries with larger formal sectors and therefore larger income and tax revenue bases to finance education. This is not to suggest that teachers are well paid. In fact, in some cases the salary allows only a very basic standard of living, or even puts families with teachers as providers close to or under the poverty line. The challenge is that teacher salaries in many low-income countries are high relative to national income measured by GDP per capita, and it is therefore difficult for a country to finance teacher salaries on the scale required for universal education.

These higher relative salaries can be seen as a consequence of overall poor educational attainment and relative shortage of skills. In a country where only a minority complete secondary or tertiary education, those with sufficient education to be teachers are among a small educated elite which can attract high pay relative to the national average. For example, in 2010, the average salary for a qualified primary teacher with 15 years of experience in OECD countries was 1.23 times per capita GDP, while in sub-Saharan Africa, average primary teacher salaries are often much higher, averaging 4.1 time GDP per capita in recent UIS reports (2009).[16] With successful expansion of the education system, this difference may level out eventually as general societal education and skill levels approach those of teachers. Recent education financing projections for the 2030 Goals assume this long-term convergence on a global level, but also make projections for needed financing based on countries that already pay teachers more in order to attract the best candidates to the profession.[17]

In the early 2000s the severe challenges posed by the relatively high cost of teacher salaries in countries with low educational attainment and skill shortages at a time of rapid expansion, combined with what was perceived as limited financing capacity, created concerns about whether universal primary education would be affordable. Work by Bruns and others (2003) established some parameters for the sustainable provision of universal primary education.[18] Based on such work, the 2004 EFA-FTI Indicative Framework provided a model of education financing suggesting that sustainable universal primary education would require average teacher salaries of no more than 3.5 times of GDP per capita.[19] The cap was designed to ensure resources for other teaching and learning needs where overall resources are

10 Calculation based on data from UNESCO (2015). EFA Global Monitoring Report 2015: Education For All 2000–2015: Achievements and challenges, page 320ff.

11 Data refers to the school year ending in 2011.

12 Data refers to the school year ending in 2011.

13 Data refers to the school year ending in 2010.

14 Data refers to the school year ending in 2010.

15 Mulkeen (2010). Teachers in Anglophone Africa. Issues in Teacher Supply, Training and Management, page 25f.

16 UNESCO Institute for Statistics (2011). Financing Education in Sub-Saharan Africa. Meeting the Challenges of Expansion, Equity and Quality, page 108.

17 Education for All Global Monitoring Report (2015). Pricing the right to education: The cost of reaching new targets by 2030. Policy Paper 18, page 3.

18 Bruns et al. (2003). A Chance for Every Child. Achieving Universal Primary Education by 2015, chap. 3, page 61ff.

limited. The benchmark has become an internationally accepted standard and a key factor in large-scale hiring of contractual teachers to expand educational access, especially for girls and candidates from disadvantaged regions.

The EFA benchmark contains some basic flaws in defining good teacher policy, however. In addition to leading to unreasonably low salaries, sometimes below national poverty lines in very low-income countries with a small formal sector economic base and low GDP per capita, it does not necessarily result in comparable salaries in a national context needed to attract secondary school graduates to teaching as opposed to other public or private sector jobs in the formal economy with similar qualifications. It is often applied (as intended by its authors) as a key pillar of greatly increased recruitment at the expense of quality standards for teachers. Many of the sub-Saharan African countries that have applied the benchmark as well as increased their rates of teacher recruitment over the past decade in order to expand access to education have done so through lowering the qualifications necessary to become a teacher.[20] Such policies work to create a deprofessionalization of teaching, leading to lower-quality recruits to teaching, absenteeism and moonlighting (taking on second or third jobs) or engaging in private tutoring at the expense of the main teaching commitment.[21] All of these consequences work against teaching quality.

Primary teachers' salaries in OECD countries 2010.

	Ratio of salary after 15 years of experience to GDP per capita 2010
Australia	1.23
Belgium (Fl.)	1.25
Chile	1.49
Czech Republic	0.87
England	1.34
Finland	1.15
Hungary	0.73
Israel	1.07
Italy	1.09
Luxembourg	1.20
Netherlands	1.27
New Zealand	1.49
Norway	0.70
Poland	0.85
Scotland	1.46
United States	0.99
OECD mean	**1.23**

Source: OECD (2012). Education at a Glance 2012: OECD Indicators. Tables D35 and D36, pages 419, 425 (Data refer to 2010).

Examples of average salaries for publically-financed teachers as a multiple of per capita GDP

Country (year)	Year	Primary	Lower secondary	Upper secondary
Benin	2006	3.6	6.0	8.2
Burkina Faso	2006	5.3	8.8	9.6
Burundi	2007	7.6	8.4	12.2
Cameroon	2007	3.2	5.2	5.5
Central African Republic	2007	3.3	6.9	7.1
Chad	2003	5.4	8.8	9.8
Congo	2007	0.9	2.0	2.5
Cote d'Ivoire	2007	4.9	8.8	9.4
Ghana	2007	4.7	4.7	4.8
Kenya	2004	5.3	7.6	7.6
Lesotho	2004	5.0	10.4	10.4
Malawi	2008	6.3	11.6	11.6
Niger	2008	66.	7.4	8.6
Nigeria	2003	4.9		
Rwanda	2008	2.6	6.4	7.3
Senegal	2004	4.7	5.5	6.6
Sierra Leone	2004	4.2	5.9	5.9
Togo	2007	6.1	8.9	11.6
Zimbabwe	2003	6.1		
Average 35 sub-Saharan countries		4.1	6.3	7.2

Source: UNESCO Institute for Statistics (2011). Financing Education In Sub-Saharan Africa. Meeting the Challenges of Expansion, Equity and Quality, page 108.

19 Education For All – Fast Track Initiative (2004). Accelerating progress towards quality universal primary education: Framework, page 15.

20 UNESCO Institute for Statistics (2015). Sustainable development goal for education cannot advance without more teachers, page 3f.

21 UNESCO (2014). EFA Global Monitoring Report 2013/14: Teaching and Learning: Achieving quality for all, part 3, page 186ff.

If salary benchmarks are to be used, it is advisable to apply the benchmark flexibly and to adjust it as a function of the country's GDP and capacity to pay.[22] In addition, a comprehensive policy to recruit, retain and motivate sufficient numbers of qualified and effective teachers will take a number of factors into account, including: (i) minimum living standards in very poor countries, (ii) comparator professions (those professions requiring similar qualifications and potentially recruiting future or current teachers), and (iii) length of training, knowledge, skills and responsibilities expected of teachers.[23] High-income countries have already shifted much of their policy work and recruitment and retention strategies away from national income comparators to the more targeted comparisons between teacher and other tertiary-level workers with similar qualifications and the levels required to reward skill sets demanded of professional teachers.[24] Similarly, the SDG Target 4 on teachers now contains an indicator on average teacher salaries relative to other professions requiring a comparable level of education qualification.[25] It is a clear encouragement to low- and middle-income countries which have not yet moved in that direction to follow suit.

To finance teacher salaries that meet these more comprehensive objectives without compromising other vital teaching and learning needs, many low- and middle-income countries will need to substantially raise and invest more of their own national income in education, to be accompanied by renewed commitments from international development assistance. Recent estimates from international agencies suggest that the annual cost for universal primary and secondary education as well as for one year of free pre-primary education of good quality in low and lower middle-income countries will increase from 149 billion U.S. dollars in 2012 to approximately 340 billion U.S. dollars in 2030.[26] According to the Agenda 2030 for Sustainable Development as well as the Addis Ababa Action Agenda, the main responsibility to ensure inclusive and equitable quality education as well as free basic education lays with national governments. They are required to increase tax collection and public sector investment: according to the Education 2030 Framework for Action, governments shall allocate at least 4 to 6 per cent of GDP and/or 15 to 20 per cent of public expenditure to education.[27] In sum, capping teacher salaries at relatively low levels, often counter-productive to quality teaching and learning, is not the only desirable choice for low- and lower middle-income countries to ensure universal access.

2.3 Unequal teacher provision

These challenges are further compounded by a series of interrelated factors of geography, ethnic and social minorities, gender and specialization.

2.3.1 The geographical challenge

In countries where qualified teachers are a scarce resource, their distribution is often uneven. While there are enough or even a surplus of qualified teachers seeking and taking employment in the favoured urbanized and developed areas, there are unfilled posts in the unfavoured remote areas or areas with minority populations, which are often not well developed. There are more secondary school leavers from the urban, developed areas, hence more qualified teachers, and they tend to seek employment in the locations offering them the amenities of a modern lifestyle: electricity and phone coverage, medical facilities, access to good schools and to social and other facilities.[28] The ministries of education, too, often tend to satisfy the needs of schools in the central areas first. The consequence is that urban areas have the best-qualified teachers, can fill vacancies quickly and sometimes even have overstaffed schools, while the least desirable areas have less-qualified teachers, more young and inexperienced teachers and longer delays in filling vacant posts. Unequal teacher deployment can be visible even within small geographical areas, as it may be easier to staff schools in small towns than isolated remote schools in the same district. These micro-level geographical differences can be masked by using district averages in the analysis of deployment patterns.

An uneven distribution of teachers is thus caused by a general shortage of teachers, since posts remain vacant giving ministries a choice where to staff first and teachers a choice where to accept employment. Secondly, education systems concentrated on better accessible and developed areas will always have more teacher candidates and teachers coming from such areas and wanting to stay there.

22 Ibid.

23 UNESCO (2017). Teacher Policy Development Guide, page 66ff; UNESCO (2010). Methodological Guide for the Analysis of Teacher Issues, chap. 5, page 81-108; ILO (2012). Handbook of good human resource practices in the teaching profession, page 11ff.

24 OECD (2016). Education at a Glance 2016: OECD Indicators, chap. B, page 177ff.

25 UNESCO (2016). Global Education Monitoring Report: Education for people and planet: Creating Sustainable Futures For All, page 327;UNESCO (2015). Education 2030 – Incheon Declaration and Framework for Action, Annex (Draft), page VIII.

26 UNESCO (2015). Education 2030 – Incheon Declaration and Framework for Action, page 31.

27 UNESCO (2015). Education 2030 – Incheon Declaration and Framework for Action, page 32.

28 Mulkeen and Chen (2008). Teachers for Rural Schools. Experiences in Lesotho, Malawi, Mozambique, Tanzania and Uganda, page 1ff.

2.3.2 Teachers for ethnic and social minorities

The problem of teacher distribution is aggravated where ethnic, cultural or religious minorities exist. In countries with a dominant ethnic, tribal or religious group, this group also tends to be overrepresented in the high achievers in education and therefore over-represented in teacher education courses. Teachers from the majority/dominant group are likely to be reluctant to live and work in the more marginalized communities and ethnic groups. This creates a further vicious cycle, where the marginalized communities have more difficulty in attracting qualified teachers and so continue to underperform in education.

This problem is particularly acute where different languages are in use. Teachers whose first language is one of the dominant or majority languages may not be able to fill a post in a community with a minority language. Even where the majority language is the language of instruction, teachers may still feel uncomfortable living in a community where their own language is not spoken.

2.3.3 The gender challenge

There is also a gender dimension to the question of teacher supply. It is desirable to have a gender balance in the teaching force for reasons of equity in employment, but also because female teachers provide positive role models for girls and are believed to make schools safer for girls. As a result, female teachers may encourage retention of girls in school and contribute to more equitable educational outcomes.

However, in many countries, there are not only fewer female teachers than required, but they are also even more inequitably distributed than male teachers, with female teachers tending to be more strongly concentrated in urban areas. There are multiple cultural and social reasons for this pattern, including (i) expectations that women will locate near their husbands' work, (ii) a belief that remote areas are unsuitable and even unsafe for educated single women, and (iii) general assumptions about teaching as a suitable profession for urban middle-class women. An insufficient number of female teachers in a country is often caused by a general low level of priority for female education, resulting in few female secondary schools and therefore few female secondary school leavers. Recruiting female teachers in sufficient numbers remains challenging, in particular at secondary level.

2.3.4 Specialist teachers gap

Where there are different teacher specializations, there tend to be shortages of teachers with specific subjects, most often mathematics, sciences and international languages. While the issue of specialization is greatest at secondary school level, there are some countries where an element of teacher subject specialization can also be found in the primary schools.

Shortages in specific subject areas can be seen as a vicious cycle. A poor standard of mathematical education results in few school leavers with good mathematical skills, and those few are able to gain access to highly selective university courses (such as engineering, science and medicine). Consequently, those who go to teacher training are likely to have poor mathematical education, which in turn leads to poor teaching and learning of mathematics in schools.

Shortages in specific subject areas also tend to have a geographical and social dimension, as the least favoured areas (geographical, ethnic, social and linguistic) also tend to have the greatest shortage of teachers in the subjects where a shortage exists.

2.4 Teacher utilization

The policies for teacher utilization play an important role in determining both the number of teachers required and teacher deployment. Three teacher utilization factors can have a significant impact: (i) the pupil-teacher staffing ratios and teacher workload, (ii) the organization of classes and (iii) the number of subject options offered.

2.4.1 Staffing ratios, teacher workload and subject options

Pupil-teacher ratios (PTRs), class sizes and overall teacher workload, both statutory and real, are the key determinants of how many teachers are required and where. They also help determine the degree of teacher satisfaction with their work and by extension, the quality of learning.

The Agenda 2030 for Sustainable Development includes indicators for pupil/qualified teacher and pupil/trained teacher ratios by education level to help determine the number of teachers needed to meet the education targets. There is no global consensus on what constitutes either an ideal PTR or class size. PTRs for the most part hide the real dimensions of class size depending on allocation of teachers to classes, the amount of time spent on teaching and required instruction time, and the defined and real teacher workload. There are great disparities in allocation of teachers and therefore real class sizes between provinces and population groups.[29] Some analysis raises the issue of teacher absenteeism as a major impediment to effective learning but also notes that the issue is complex, requiring that policy and decision makers identify all the reasons, including salary

29 UNESCO (2014). EFA Global Monitoring Report 2013/14: Teaching and Learning: Achieving quality for all, page 84ff.

levels, workload, work environment, teaching standards (deprofessionalization and lack of professional development) and school management, that hamper effective learning.[30]

Recent policy guidelines recommend that, bearing in mind the financial capacity to hire and deploy teachers, class size regulations or indicators should be defined to meet teacher effectiveness and learning goals, especially learner-centred approaches, a variety of instructional approaches and meeting needs of specific groups (such as disadvantaged learners, dual-language classes, learners with special educational needs, early childhood and early primary learners). Research evidence and country education experiences underline the importance of policies that address specifics of class size and teacher allocation according to country contexts in order to ensure equity between regions/districts and rural and urban areas, provide training and support to teachers for adapting teaching methodologies to smaller class sizes and to help teaching excessively large, double-shift or multi-grade classes where these are unavoidable.[31]

The overall issues of teacher workload are equally important to determine if there are enough teachers to meet learning needs. Teaching/instructional time is clearly the most important aspect of a teacher's work, but other aspects need to be factored into planning for meeting teacher challenges: instructional support time for lesson preparation, time for student assessment and counselling, professional development time, time spent on administrative responsibilities, time to interact with parents/guardians and specific requirements of teaching and learning in rural, remote and disadvantaged areas, including double-shifts and multi-grade classes.

In primary schools, teachers are often expected to teach all subjects to one class, and therefore the teacher requirement is one teacher per class. Once teachers begin to specialize in particular subjects, normally at secondary level but in some places at upper primary level, staffing depends on the number of subjects offered, the allocation of weekly time for each subject and the number of classes.[32]

Teachers specializing in subjects with a low allocation of weekly time or teachers specialising in less popular subjects in schools that offer multiple optional subjects (as is common at secondary level) may have unusual low weekly workloads as compared to other teachers. This effect is most apparent in smaller schools. It is also partly an effect of teacher allocation policy. Where teachers are allocated on the basis of the number of subjects offered (i.e. every school is allocated at least one teacher for each subject) there tends to be low utilization in some subjects. In countries where teachers are allocated on a per-capita basis (i.e. the number of teachers is determined by the number of students, and the number of subjects is then determined based on the available teachers), this problem is reduced.

2.4.2 Organization of classes

The number of teachers required in remote rural communities can be reduced by using double-shifts or multi-grade teaching (where one teacher teaches multiple grades at the same time) in locations where class sizes are small or there are simply not enough teachers or classrooms to meet needs. This approach is being used in developed countries for its alleged benefits regarding social learning and in rural areas where there are not enough children of one age group to fill a class. Though prevalent in some countries in Africa and Asia,[33] in low-income countries it has not always been as popular and is sometimes not included in teacher deployment policies. Reservations against multi-grade teaching and learning include; (i) insufficient or no preparation of teachers for multi-grade teaching, (ii) curricula usually geared towards teaching in single-grade classes, making it difficult for teachers to follow the curriculum in multi-grade classes, (iii) classroom resources unsuitable for multi-grade teaching, (iv) in some cases very ambitious multi-grade experiments expecting multi-grade teachers to cope with large number of students and grades. In general, multi-grade teaching claims additional work and effort from teachers and necessitates additional training to teach in such conditions. Lesson planning is much more complex and conducting the lessons is demanding, requiring constant attention, change of focus, decision-making and still often leaving teachers with the feeling of not having done right by all children under their care.

However widespread the prevalence of multi-grade teaching to balance out a lack of teachers is, its eventual contribution towards the achievement of EFA in view of the high amount of expertise and increased workload it requires of teachers in turn argues for a sound teacher policy to regulate the posting of teachers to multi-grade schools, their required qualifications and experience, work allocation, remuneration, professional support and the duration of their service.

30 International Commission on Financing Global Education Opportunity (2016). The Learning Generation: Investing in education for a changing world, page 65ff; UNESCO (2014). EFA Global Monitoring Report 2013/14: Teaching and Learning: Achieving quality for all, page 186ff.

31 UNESCO (2017). Teacher Policy Development Guide, chap. 3.5, page 63ff.

32 UNESCO (2017). Teacher Policy Development Guide, page 62f; ILO (2012). Handbook of good human resource practices in the teaching profession, page 116ff; ILO and UNESCO (1966). Recommendations concerning the Status of Teachers.

33 Mulkeen (2010). Teachers in Anglophone Africa. Issues in Teacher Supply, Training and Management, page 66-68; UNESCO (2015). Practical Tips for Teaching Multigrade Classes, Embracing Diversity: Toolkit for Creating Inclusive, Learning-Friendly Environments, Specialized Booklet 4.

III Responses to the teacher gap

3.1 Introduction

As has been outlined in the previous section, the teacher gap in its quantitative and qualitative dimension is a complex multidimensional problem linked to population, educational characteristics, financial position and political priority given to education and education policies in a given country. The EFA Global Monitoring Report 2013/14 recommends that "education quality must be made a strategic objective in education plans", and that "national policies should address teacher quality and management".[34] This means that quality education for all necessitates an adequate teaching force. In order to attract sufficient qualified and motivated teachers into the profession, post them to where they are needed, and retain them in their posts, strategies and policies should be developed for teacher recruitment, training, deployment, CPD, performance standards and code of conduct, payment and incentives for above-average workloads, The report reviewed 40 national education plans and found a wide range of strategies for increasing the quality of teaching and learning. There is no single solution which is appropriate in every case. There are numerous examples of attempts to address the problems, from which some generalizations can be made.

3.2 Addressing the quantitative teacher gap

Where the shortage arises from inadequate planning for the supply of teachers, the response may lie in the expansion of the capacity of teacher training. Ideally, the national output of teacher training should be calibrated to exceed the annual teacher attrition (typically in the range of 5-10 per cent),[35] allow a margin for wastage (trained teachers who do not enter the profession), and provide for expansion of the system.

Where the shortage is acute, countries have often shortened the duration of initial teacher education or reduced the campus-based part of the training and increased the in-service part to increase teacher supply. These should ideally be seen as short term measures to address a crisis, as they may ultimately compromise quality. It is normally more desirable to have teachers with a compressed training than to have teachers with no training at all (which is often the alternative).

In practice, most countries experiencing a teacher shortage engage unqualified teachers, ideally combined with the provision of in-service training to these teachers. While this is a quality risk, it also has certain advantages. First, it provides an immediate solution to the shortage. Second, it can reduce wastage, as the training is only given to those who have demonstrated willingness to take up the posts. Third, recruitment of untrained teachers may help in recruiting teachers from rural communities and may contribute to reducing the inequities in deployment. In fact, this strategy is often chosen to recruit teachers to fill vacancies in rural or remote schools.

If there are not enough qualified school leavers applying for teacher education, it is often suggested to increase remuneration to make the profession more attractive. This is likely to increase applications for teacher courses, but since it continues to draw applicants from the limited pool of qualified school leavers, its impact can only be limited. The alternative strategy for increasing the number of applicants for teacher education is to reduce the application requirements. This has proven successful in increasing numbers but poses a risk to quality. This strategy is most appropriate when combined with adjustments to the teacher training curriculum to ensure that the initially lower-qualified student teachers achieve a sufficient standard of content knowledge and pedagogics during their training.

An insufficient number of viable candidates is only one side of the problem. In many countries, insufficient fiscal space can prevent the establishment of teacher posts while potential teachers might be available, for example graduates of private colleges or universities.

34 UNESCO (2014). EFA Global Monitoring Report 2013/14: Teaching and Learning: Achieving quality for all, page 217f.

35 Mulkeen and Crowe-Taft (2010). Teacher attrition in Sub-Saharan Africa: The neglected dimension of the teacher supply challenge. A review of literature, page 7ff.

Where insufficient fiscal space to support the required number of teachers exists, the common strategies are (i) reduction in teacher pay, (ii) employment of contract teachers, and (iii) use of cost-sharing models.

As pointed out in the section above on teacher salaries, limitations or reductions in teacher pay are almost always difficult and painful to implement, not to mention often counter-productive for other teaching and learning objectives, notably improving quality. Pay cuts inevitably cause hardship, as teachers have to be able to support their families. Even where teacher pay is high in comparison to GDP, this does not mean that teachers are well-paid in real terms. Reductions in pay may also provoke controversy and protest, and with high numbers of teachers in the workforce (often more than any other category of public service) they form a strong political lobby, often making pay cuts difficult.

Where governments have felt a need to limit or effectively reduce teacher pay, they have often done so by creating a new category of teachers, such as contract teachers, with reduced training, lower pay scales and often different conditions of employment compared to established teachers. Mostly, contract teachers are untrained, but as mentioned above, in some countries teachers trained in private institutions are available to take up teaching jobs but face a shortage of funded public teacher posts. Engaging large numbers of contract teachers faces less initial resistance than reduction in pay, since contract teachers bear the hardships (with minimal initial preparation for often difficult teaching positions, salaries ranging usually from 25% to 50 per cent of a regular teacher's salary and frequently few or no benefits such as access to health care or material incentives to work in hardship areas).[36]

The recruitment of contract teachers has enabled some countries to reduce their teacher gap (in some countries contract teachers account for over half of the teaching force) as well as meeting other education access goals such as (1) more local accountability by reducing teacher absenteeism and improving performance and (2) more diversity in recruiting local teachers from the same ethnic or language group as learners.[37] However, massive recruitment of contract teachers strictly on the basis of cost considerations creates an unequal and frequently contested two-tier structure of teachers, where contract teachers work side by side with regularly employed teachers, performing the same jobs for unequal pay and conditions of work. As many countries who have implemented such policies realize, a two-tier structure of teachers can only be justified and maintained in the long run if there is a career pathway which allows contract teachers to improve their status and pay over time, as they acquire experience and competencies through additional professional development, by integrating the civil service or permanent teaching career structure.[38]

Moreover, as this has been researched in recent years, the Global Monitoring Report 2013/14 notes that the employment of contract teachers is not a long-term solution to poor quality of education. Although enrolment ratios have increased and in some cases the pupil-teacher ratio has been reduced with more teachers in school, there is no consistent evidence that the additional teachers have helped to raise learning outcomes. Countries that heavily use contract teachers, for example in West Africa, continue to rank at or near the bottom of cross-country comparisons of education access and learning.[39] Some evidence has emerged of higher levels of presence in school and teaching effort by contract teachers offsetting the lower levels of training and skills, but the differences are often very small and the overall impact is minimal. Other evidence suggests that greater parental or community involvement in case of locally hired contract teachers raises their effectiveness beyond that of regular teachers. Nevertheless, findings in a number of countries show that the overall impact of contract teachers on learning achievement is zero or negative. [40]

The medium- to long-term solution to the deprofessionalization of teaching and negative impacts on education quality created by contract teacher policies is to simply phase out such practices in favour of training, hiring and paying qualified teachers, as countries such as China have realized in the past.[41] However, this solution requires greater financial capacity and the will on the part of low-income countries to increase revenues and spending allocations in favour of education and teachers, as noted above in section 2.2.3 on the

36 Fyfe (2007). The use of contract teachers in developing countries: Trends and impact, page vii.

37 UNESCO (2017). Teacher Policy Development Guide, page 45f; Chang et al. (2014). Teacher Reform in Indonesia: The Role of Politics and Evidence in Policy Making, page 169ff.

38 UNESCO and International Task Force on Teachers for Education 2030 (2016). Report: International Conference on the Use of Contract Teachers, page 16ff.

39 UNESCO (2014). EFA Global Monitoring Report 2013/14: Teaching and Learning: Achieving quality for all, page 256ff.

40 UNESCO (2017). Teacher Policy Development Guide, page 45f; UNESCO and International Task Force on Teachers for Education 2030 (2016). Report: International Conference on the Use of Contract Teachers, page 16f.

41 UNESCO and International Task Force on Teachers for Education 2030 (2016). Report: International Conference on the Use of Contract Teachers, page 22ff.

financing challenge. In so doing, education planners and decision makers may also need to put into place more efficient means of managing and supporting teachers to ensure that the additional investments are well used, reducing absenteeism, increasing professional development and ensuring that teachers are allowed and required to remain focused on improving learning outcomes in their classrooms.[42]

In some cases and schools, communities are expected to make a contribution to pay all or part of teacher remuneration due to financial pressure caused by government funding gaps. In Zambia in 2010, there were 2,851 community schools in basic education, accounting for 16 per cent of all school pupils in grade 1 to 9 (basic education).[43] In these schools the government pays a small per-student grant for school materials, but the teachers are supported by the community and sometimes unpaid or paid only in kind. While these schools appear to be performing well, they operate with largely unqualified teachers. Community schools tend to serve the poorest and most marginalized communities, which were not already served by government schools. Hence, this cost-sharing initiative is regressive, with the burden falling on the poorest sections of society.[44]

A number of other examples for policy actions aimed at addressing teacher shortage are:
a) Policy actions to increase teacher utilization, such as policies on multi-grade teaching and minimum class sizes, policies on minimum workload and policies on optional subjects;
b) Policy actions to reduce overstaffing in schools, which could release teachers from overstaffed schools to take up posts in other schools;
c) Policies which allow retired teachers to return to teaching on a contract basis. This could allow overage teachers who are healthy and interested to continue to work and/or teachers who left the service to return on a contract basis;
d) Double-shift teaching. Multi-shift schooling (where schools are used for one group of students in the morning hours and another group in the afternoon) is commonly used where classrooms are in short supply. However, it can also be used to address a teacher shortage. In such cases teachers teach two shifts every day. In Zambia, for example, teachers teaching both shifts receive 25 per cent additional pay, and in The Gambia the bonus is 50 per cent. However, this practice often presents a quality risk, as schools tend to shorten each shift and teachers (particularly in the later shift) tend to be tired.

Strategies to address teacher shortage should go hand in hand with adopting a comprehensive teacher recruitment and deployment strategy that factors in the quantitative needs, qualitative concerns and current and future needs in relation to education as well as teacher preparation and recruitment cycles. Assuming proper education planning that takes account of possible demographic and other societal changes as part of medium or long-term national education plans, forecasting and preparing adequate numbers of qualified teachers to meet national needs must be done over several years. A recruitment strategy should therefore take into account a range of factors, both current and projected, including teacher attrition rates, demographic trends, pupil-teacher ratios, class sizes and different types of class organization in urban and rural settings, the impact of adding one level of education, specific gender and disadvantaged group profiles and possibilities for recruiting qualified, experienced teachers who have retired, taken career breaks or changed profession to return to teaching.[45]

3.3 Addressing unequal teacher provision

3.3.1 Addressing the geographical challenge and provision of teachers for ethnic and social minorities

To ensure that teachers can be dispatched to and retained and work with motivation in the schools where they are needed, a teacher strategy needs to consider the distribution issues of geographical location and ethnic and linguistic minorities. Evidence from many countries shows that schools in rural and remote areas servicing disadvantaged populations are often staffed by younger, less well-trained (in the case of contract teachers especially) teachers with the least amount of experience. To address a qualitative imbalance in teacher distribution and aim for greater equal-learning opportunities among these population groups, possible solutions can be grouped into three main categories; (i) required minimum service, (ii) incentives and (iii) targeted recruitment.

42 International Commission on Financing Global Education Opportunity (2016). The Learning Generation: Investing in education for a changing world, page 16ff.

43 Ministry of Education of the Republic of Zambia (2010). Enrolment in All Schools by Gender and Year – 2010 Educational Statistical Bulletin, pages 21, 36.

44 de Kemp et al. (2008). Primary Education in Zambia, page 52ff.

45 UNESCO (2017). Teacher Policy Development Guide, page 43ff; ILO (2012). Handbook of good human resource practices in the teaching profession, chap. 1, page 9ff; SABER (2013). What Matters Most for Teacher Policies: A Framework Paper, pages 11 and 20ff.

(i) Required minimum service

Teaching service regulations may require teachers to accept postings in less than desirable areas in order to (i) allow them to enter the profession after graduating from a teacher preparation programme or (ii) as part of a strategy to get better-qualified and more experienced teachers into less desirable jobs. Most often, such postings require a minimum period of service in for example a remote school before being transferred back to an urban area. Requirements are best set out clearly in relevant regulations or legislation and made known to prospective candidates, along with transparent and equitable criteria and procedures for transfer to more desirable postings as part of career development. Given the heavy public investment of relatively scarce resources in teacher preparation programmes, a minimum period of exercise may be a requirement of benefitting from state-funded teacher training, including requirements to reimburse part of the cost of their training for teachers who do not teach for a minimum number of years after qualifying.[46]

More often, planned deployment is weakened by an inability to enforce the rules. Teachers and education officials may attempt to bend or ignore transfer criteria and procedures through patronage or outright bribes to secure more desirable postings. They may even refuse to take up a position, particularly if they find limited or no housing or other expected facilities in the assigned duty station.[47] Sometimes such teachers are allowed to teach in another school in the same district, increasing the intra-district inequity in deployment. There is a particular difficulty for female teachers for whom it may be viewed to be unsafe to locate in a remote area (particularly in another ethnic or linguistic group) and so will leave the profession rather than accept remote postings.

(ii) Incentives

Incentives may also be provided to attract teachers to accept posts in rural or remote schools and to attract teachers from minority groups, particularly to avoid an excess of inexperienced teachers in such jobs. These may be in form of housing, additional salary or benefits, or accelerated promotion. The provision of housing is an expensive solution, since it adds to the construction cost of schools and incurs an ongoing maintenance obligation. While in the absence of housing, it may be almost impossible to retain a teacher from outside the area, housing alone may not be sufficient to redress the distribution problem.

The provision of a financial incentive, often 20 to 30 per cent of the salary, is quite common. However, the impact of financial incentives is to some extent counterbalanced by the additional cost of living in a remote area and the loss of opportunity for part-time work, for example in private schools, as well as by the difficulties of custom-tailoring the allowance to the situation on the ground. Giving a rural allowance to an entire district does not help to attract and retain teachers in the district's most remote schools, where they might be needed most. The incentive must be more specifically targeted.

The Gambia provides an example of how an incentive can work. In 2006, using resources from the GPE (formerly EFA-FTI), in addition to providing permanent teacher housing in rural areas at no charge to teachers, the government introduced a hardship allowance of between 30 and 40 per cent of salary for teachers locating in specified remote schools, determined in terms of distance from a main road. This led to teachers requesting transfer to those schools and reduced the disparity in the distribution of qualified teachers nationally.[48] This suggests that incentives can be effective, if they are both significant and carefully targeted.

Some countries provide an incentive through accelerated promotion, with teachers receiving additional points when applying for promotion. This strategy builds up a large deferred cost for the government and has to be considered as part of an overall strategy. It may also not be as attractive for newly qualified teachers who are likely to be more focused on their short term needs, including finding a place to stay and sustaining themselves until the first salary payment arrives. For this reason initial incentives, such as the settling-in pack (Tanzania, see below) may be more effective depending on the target group and context.

There are many other actions which could be used to address teacher distribution imbalances. Some approaches tried in low-income countries include:

a) A settling-in pack. In Tanzania, a pilot scheme offered newly appointed teachers a starter pack including a mattress, cooking utensils and a small cash grant. This was intended to enable teachers to get through the first few months before their first pay began to arrive and to so enable them to take up a post in a rural area. [49]

46 UNESCO (2017). Teacher Policy Development Guide, page 43ff; ILO (2012). Handbook of good human resource practices in the teaching profession, pages 25–29.

47 Bennell (2004). Teacher motivation and incentives in Sub-Saharan Africa and Asia. Knowledge and Skills for Development, Brighton, chap. 4–5, page 28ff; Bennell and Akyeampong (2007). Teacher Motivation in Sub-Saharan Africa and South Asia, page 47ff.

48 Mulkeen (2010). Teachers in Anglophone Africa. Issues in Teacher Supply, Training and Management, page 41f.

49 Personal notes from Aidan Mulkeen attending a discussion with the Ministry of Education in Tanzania during a preparation of a project in 2010.

b) Paired postings. In Ghana, pairs of students who had trained together were posted to a remote school. The intention was that the two friends could share accommodation and help each other in settling in. It was reported that this increased the take-up of rural posts.[50]

(iii) Targeted recruitment

One of the best ways to ensure the needed supply of teachers for remote communities and minority ethnic and linguistic groups is to identify and recruit teachers within those communities through targeted recruitment strategies. There are two distinct strategies which can be followed; (i) location-specific recruitment, and (ii) preferential access to teacher education. Evidence from a number of countries in recent years has shown the benefits of using such strategies to recruit and retain teachers in hard-to-staff communities, even at the price of hiring less-qualified teachers.[51]

Location-specific recruitment: Some countries use recruitment strategies which recruit teachers for specific schools. In Lesotho, for example, teaching vacancies are advertized for specific schools and only those interested in that particular location apply. This mechanism leads to much greater recruitment of local people (sometimes unqualified) or people originally from the area, reducing the need for teacher housing and increasing the likelihood of the teacher remaining in the area in the long term. Similarly, in The Gambia, unqualified teachers were recruited locally and offered the opportunity for in-service training, bringing them to qualified teacher status over a 3-year period. This mechanism ensures that the people in teacher training are the people willing to take the available jobs and reduces the difficulties of deployment later.

Preferential access to teacher education: Ideally, the intake into teacher education should reflect the balance of the population in terms of ethnic, linguistic and religious background and in terms of region of origin. However, where intake to teacher education is based solely on academic performance, it is likely that the dominant groups and the urban middle classes will be over-represented. This could be addressed by systems which provide preferential access to students from targeted groups. Such systems inevitably involve taking in student teachers with lower academic performance than would otherwise be the case. Since some students from rural areas might be reluctant to return after their training, such systems may work best when combined with a commitment to return to a specific area or even a specific school after graduation.

In Malawi and Mozambique, an NGO operates government-approved teacher training specifically aimed at teachers who are ready to go to rural areas. It provides training as a teacher and preparation to work as a community leader. It reports a high rate of teachers returning to rural areas, suggesting that there are people willing to work in rural areas.[52]

3.3.2 Addressing the gender challenge

The barriers to accepting a rural posting are greater for female teachers, since they would include cultural expectations and concerns about personal safety. Consequently, female teachers may be less responsive to incentives, and more likely to refuse rural postings. Although there is little empirical research on the gender aspects of teacher deployment compared to gender recruitment, some countries have employed strategies ranging from housing and other material incentives for single and married female teachers, provisions of transfer and career guarantees for married women accompanying spouses, recruitment of local people and provision of in-situ training, all designed to play a greater role in recruiting female teachers in rural and remote areas.[53] When a local recruitment strategy was applied in Yemen for training young females to work as teachers in districts with low female participation in education, it was found that half of the women attending the training had already been working as voluntary teachers in these districts, with a small pay by the community or with no pay at all.[54]

3.3.3 Addressing the specialist teacher gap

The shortage of specialist teachers in some subjects is particularly difficult to address, as it often reflects a vicious cycle where poor teaching leads to poor national performance in some subjects (often mathematics and sciences), leading to a shortage of suitably qualified teachers.

Offering special incentives to attract teachers of the subjects where a shortage is experienced may have some effect. Enhanced student bursaries could attract students of coveted subjects into teacher education, and salary incentives could help to retain teachers in the profession. However, the impact of financial incentives is likely to be limited in cases

50 Hedges (2002). The importance of posting and interaction with the education bureaucracy in becoming a teacher in Ghana. International Journal of Educational Development 22 (2002), page 360.

51 UNESCO (2014). EFA Global Monitoring Report 2013/14: Teaching and Learning: Achieving quality for all, chap. 6, page 230ff; UNESCO (2016). Global Education Monitoring Report: Education for people and planet: Creating Sustainable Futures For All, chap. 19, page 330f.

52 Mulkeen (2010). Teachers in Anglophone Africa. Issues in Teacher Supply, Training and Management, page 172.

53 UNESCO (2014). EFA Global Monitoring Report 2013/14: Teaching and Learning: Achieving quality for all, page 86f.

54 Personal field experience of Ilse Voss-Lengnik in Yemen in 2007.

with severe national skill shortages, as school leavers with underrepresented specializations also tend to attract higher salaries in the private labour market.

If the problem is seen as a vicious cycle, then interventions at different points in the cycle may be considered. These could include:

a) Booster courses at school: attempts to provide additional courses include examples like the science camps organized during school holidays in Zanzibar.[55] These residential courses for students from different secondary schools provide expert teaching in a well-equipped laboratory with a view to increasing the number of students with good scientific skills.

b) Compensatory courses in teacher training: If teacher students' knowledge in key subject areas is insufficient, the teacher training course can be designed to provide specific inputs for accelerated learning in these areas. In Lesotho, for example, the teacher training course included an initial semester called a "bridging course" and intended to bring student teachers up to standard in key subjects.[56]

c) In-service teacher training: Some countries have tried to breach the vicious cycle through in-service teacher training aimed at improving content and methodology in underrepresented subjects. In Kenya, for example, the Strengthening of Mathematics and Science in Secondary Education (SMASSE) project used in-service training to improve mathematics and science teaching. A 2008 evaluation found significantly improved content knowledge and pedagogical practices.[57]

3.4 Addressing teacher utilization

At primary school level, mostly a class teacher system (where one teacher teaches the entire curriculum) is used, and teachers are deployed to schools according to the number of pupils in each school. This also has beneficial impacts in allowing greater integration of curricular topics and helping teachers to know the individual pupils. However, in the higher primary classes, lack of teacher knowledge and skills in particular areas, often languages, mathematics and science, may compromise the quality of teaching and learning.

Multi-grade teaching is a policy option which facilitates provision of schools in small communities, where class sizes are very small. However, effective multi-grade teaching requires (i) clear policy parameters ensuring that the classes being taught by one teacher are not too big, (ii) specific training for teachers on multi-grade teaching, and (iii) respective provisions in the curriculum and adequate and sufficient teaching materials to enable independent group work within the classes.

At secondary level, teacher utilization can be addressed by restricting the number of optional subjects offered, so that there is a full workload for a teacher in each subject. Alternatively, systems which allocate teachers on a formula basis (i.e. a school can have one teacher for every X students) rather than on a curricular basis (i.e. one or more teachers for each subject) can help schools to make the most efficient use of teachers.

In practice, underutilization of teachers is often a result of a lack of clear deployment policies, leading to a system that tolerates overstaffing in schools in urban and well-developed areas while it fails to deploy sufficient teachers to and retain them in remote schools, where they would be needed. Clear recruitment and deployment policies, taking the needs of the schools and of the teachers into account and being implemented and monitored continually, are needed to regularize and optimize teacher utilization. Such policies would be part of a teacher policy.

3.5 Trade-offs and difficult choices

In some cases, there is a policy trade-off between issues of finance, supply and deployment. Some of the measures which may be used to improve supply, such as increasing teacher remuneration and expanding teacher training, involve an increase in costs. Similarly, some of the measures to improve deployment, such as additional incentives and housing, also increase costs. These measures conflict with measures to increase affordability, leaving policymakers with difficult choices.

55 World Bank (2007). Project Appraisal Document on a Proposed Credit in the Amount of SDR 28.2 Million (US$ 42 Million equivalent) to the United Republic of Tanzania for a Zanzibar Basic Education Improvement Project, page 6f.

56 Lefoka and Sebatane (2003). Initial Primary Teacher Education In Lesotho. Multi-Site Teacher Education Research Project (MUSTER), page 29.

57 Ateng' Ogwel et al. (2008). Impact of SMASSE INSET on Students' Capacity through Improved Teaching and Learning in the Classrooms, page 7ff.

IV The quality challenge

4.1 Scale of the problem

The quality of learning outcomes in low- and middle-income countries is often poor, falling well below their own standards of learning and even more so behind the standards in developed countries, particularly in the schools serving the poorest children. One nation-wide survey of rural India in 2009 found that only 38 per cent of grade 4 students could read a text designed for grade 2 students. Even after eight years of school, 18 per cent of students were still unable to read these texts.[58] In Northern Africa and Western Asia, low education quality is manifested in figures showing that 75 per cent of eighth grade students scored poorly on international mathematics tests.[59]

Testing by the Southern and Eastern Africa Consortium for Monitoring Educational Quality (SACMEQ) in 13 countries in Eastern and Southern Africa found that in 8 countries less than half of the grade 6 students tested were able to read at level 5, and in 3 countries less than half were able to read at level 4. These figures suggest that, in these countries, the majority of students in grade 6 cannot read well enough to learn autonomously from textbooks.

Comparison with standards in high-income countries is difficult, as low-income countries rarely participate in the major international assessments. There were no countries in sub-Saharan Africa among the 70 countries participating in the Programme for International Student Assessment (PISA)

SACMEQ percentage of students in grade 6 reaching reading competence levels (2007)

SACMEQ III (2007)	% of grade 6 students reaching level 4 "Reading for meaning" or higher.	% of grade 6 students reaching level 5 "Interpretative Reading" or higher.
Botswana	75.9	56.7
Kenya	80.2	60.6
Lesotho	47.5	22
Malawi	26.7	6.8
Mauritius	78.9	66.8
Mozambique	56.6	31.6
Namibia	61.2	35.7
Seychelles	78.1	67.8
South Africa	51.7	37
Swaziland	92.8	72.1
Tanzania	89.9	77.9
Uganda	54.2	30.5
Zambia	27.3	12.4
Zanzibar	78.6	62.4
Zimbabwe	62.9	42.2
Overall average	64.3	45.6

Source: Hungi et al. (2010). SACMEQ III Project Results: Pupil achievement levels in reading and mathematics, page 12.

58 UNESCO (2011). EFA Global Monitoring Report: The hidden crisis: Armed conflict and education, page 85.56 Lefoka and Sebatane (2003). Initial Primary Teacher Education In Lesotho. Multi-Site Teacher Education Research Project (MUSTER), page 29.

59 UNESCO (2016). Global Education Monitoring Report: Education for people and planet: Creating Sustainable Futures For All, page 56.

2015[60], and only one (South Africa) among the 59 participating in the Trends in International Mathematics and Science Study (TIMSS) in 2015.[61] No sub-Saharan African, South or Southeast Asian countries participated in the Progress in International Reading Literacy Study (PIRLS) 2015.[62]

Analysis of the 2007 SACMEQ data suggests that socio-economic status is one of the most significant correlates of performance in reading at grade 6 and was shown to be statistically significant in 14 of the 15 participating countries. Other significant correlates at pupil level were absence (significant negative correlation in 13 of 15 countries) and homework (significant positive correlation in 12 of 15 countries).[63]

International research suggests that the single most significant determinant on the quality of learning outcomes is what children bring to school (home background), which includes the support and encouragement they get at home and the preparation for education they receive either in pre-schools or at home. But the next most significant factor is the quality of the teaching. Therefore, "of those variables which are potentially open to policy influence, factors involving teachers and teaching are the most important influences on student learning. In particular, the broad consensus is that teacher quality is the single most important school variable influencing student achievement."[64]

Hanushek suggests that "in one academic year, a good teacher can move a typical student up at least four percentiles in the overall distribution... In fact, a string of good teachers can erase the deficits associated with poor preparation for school."[65]

However, as already noted above, there are often serious challenges in ensuring good quality of teaching in low-income countries. Some of these relate to the quality of teachers, i.e. their subject knowledge, pedagogic skills and not least their motivation as teachers, while others relate to the systems in place to manage, motivate and support teachers.

4.2 Reasons for the quality issues

4.2.1 Lowered requirements for entry to initial teacher education

With expanding demand for teachers and a limited number of secondary education graduates with good qualifications, some countries have been forced to reduce the requirements for entry to teacher education courses. For example, in Lesotho 3,500 students passed the school leaving examination in 2005, 1,450 of them with a division 1 or 2, the normal requirement for entry to higher education. The National University of Lesotho, meanwhile, offered 1,440 student places, providing higher education to almost all of those with a division 1 or 2 pass. Therefore, the Lesotho College of Education had to accept those with a division 3 pass, provided they had passed English, but was still unable to fill all of the available places.[66] Even where entry conditions have not been reduced, the level of literacy, numeracy and conceptual understanding of entrants to teacher education programmes is often inadequate.[67]

4.2.2 Social status and career opportunities

Teaching is sometimes seen as the profession of last resort, hence initial teacher education tends to draw its intake from school leavers who fail to secure entry into other professional or degree programmes. A number of factors contribute to this trend, as noted above. First, the remuneration of teachers often cannot keep pace with the rewards offered in the private or public sectors for professional workers with comparable qualifications. Second, the social status of teachers is often low due to a combination of factors subsumed under the general heading of teacher deprofessionalization – lower qualifications and entry standards, lack of continuous professional development, poor remuneration and a degraded working environment.[68] Third, not infrequently, the teaching profession is seen either as one of last resort or as a stepping stone to another career rather than a career in itself.

60 OECD (2016). PISA 2015 Results (Volume 1): Excellence and Equity in Education, page 27.

61 Foy (2017). TIMSS 2015 User Guide for the International Database, page 48f.

62 Institute of Education Sciences (IES) and National Center for Education Statistics. (2017). Progress in International Reading Literacy Study (PIRLS).

63 Hungi (2011). Accounting for Variations in the Quality of Primary School Education, page 9.

64 OECD (2005). Teachers Matter: Attracting, Developing and Retaining Effective Teachers, page 2; Cf. Hattie (2009). Visible Learning: A Synthesis of Over 800 Meta-Analyses Relating to Achievement; Cf. Rowe and Rowe (1999). Investigating the relationship between students' attentive-inattentive behaviors in the classroom and their literacy progress.

65 Hanushek (2005). Why Quality Matters in Education, page 18.

66 Mulkeen (2010). Teachers in Anglophone Africa. Issues in Teacher Supply, Training and Management, page 28.

67 UNESCO (2014). EFA Global Monitoring Report 2013/14: Teaching and Learning: Achieving quality for all, page 237.

68 ILO and UNESCO (2015). Final report: Twelfth Session: Joint ILO-UNESCO Committee of Experts on the Application of the Recommendations concerning Teaching Personnel.

4.2.3 Quality of initial teacher education

The initial teacher education provided is often of insufficient quality. The low quality of students at entry forces teacher education to cover basic subject content.[69] If initial teacher education cannot correct and overcome these difficulties a consequence of insufficient subject knowledge is that many teachers are teaching material or use a language as medium of instruction that they themselves have not fully mastered. In The Gambia, for example, teacher testing found that primary teachers who teach through English scored poorly on basic English language tests. These teachers may have insufficient language skills and expertise to explain the concepts, relate them to the children's context, guide the children to understanding, ask probing and guiding questions, clarify misunderstandings, etc. They have little alternative but to base their teaching on the textbooks and on rote learning. But this is not enough to facilitate and support active learning of children and young people and is a major reason for the pupils' low learning achievement. Teachers who are unsecure in subject knowledge and have not been trained on helping children to learn present a general problem, particularly in subjects with high conceptual content like mathematics and the sciences.

In addition, teacher education curricula are often outdated and not sufficiently matched with school curricula. Moreover, there are often not enough opportunities to develop practical teaching skills, which would require a systematic emphasis on pedagogy and didactics, group work, practical exercises in lesson planning and microteaching and structured supervised teaching traineeships for at least some weeks.[70] Other areas often neglected in initial teacher education are classroom management, cooperation with parents, addressing differentiated learning needs, design of assessment tools, giving feedback to pupils and parents and recognizing and dealing with pupils with disabilities. Moreover, student teachers are often not prepared to support children's initial acquisition of literacy and numeracy, which is one reason why pupils finish school without being able to read or write properly. Instead, the organization and culture of initial teacher education, particularly when provided in dedicated teacher colleges, is sometimes highly regimented and does not sufficiently prepare student teachers to facilitate and support learning in their classrooms and schools.

4.2.4 The capacity of teacher educators

One of the constraints on the quality of initial teacher education is the capacity of teacher educators. The tutors in teacher colleges are often selected on the basis of academic qualifications. They may not have sufficient experience in teaching and/or lack experience and qualifications regarding the neglected areas mentioned above, i.e. lesson planning, didactics, teaching methodologies, classroom management[71]

4.2.5 In-service training and professional support

In view of inadequate initial teacher training and low learning achievement of children, professional support to school teachers for making their teaching more effective is crucial and offered in most countries. Professional support systems include (i) in-service training courses for teachers (single courses or series of repeated courses), (ii) mobile resource teachers visiting schools and offering professional guidance to teachers in schools, (iii) teacher resource centres, which provide places for teachers to meet and attend local seminars and courses and often offer access to a small library, selected teaching materials, computers, etc., and (iv) programmes of CPD, which combine in-service courses with school-based support to teachers (for example teacher meetings and/or professional supervision). When designed and implemented carefully, such support was found to have positive effects on teaching and learning. However, teacher support programmes have certain costs, including developmental costs but mainly costs for transport of teachers to the training venues or of supervisors or resource teachers to schools. If larger numbers of teachers are to be involved, even small costs per head sum up. Systems of professional support to teachers are therefore often not affordable, if included in the education budget of low or middle income countries, but tend to be financed through external donors. They are therefore often limited regarding coverage and duration, which in turn affects their overall effectiveness, since a change in the teaching habits of a large number of teachers is easier to achieve, if all teachers are involved and not only some and if a sufficient long period of time is available for the endeavour.[72]

69 UNESCO (2014). EFA Global Monitoring Report 2013/14: Teaching and Learning: Achieving quality for all, page 237f.

70 UNESCO (2014). EFA Global Monitoring Report 2013/14: Teaching and Learning: Achieving quality for all, page 240f. Akyeampong et al., (2013). Improving teaching and learning of basic maths and reading in Africa: Does teacher preparation count?, page 272ff.

71 UNESCO (2014). EFA Global Monitoring Report 2013/14: Teaching and Learning: Achieving quality for all, page 246.

72 UNESCO (2014). EFA Global Monitoring Report 2013/14: Teaching and Learning: Achieving quality for all, page 242.

4.2.6 School leadership and teacher management

Ideally, the first line of management and supervision should be the school leaders (head teachers or principals). School leaders should be able to set up the school time table, ensure that teaching is undertaken according to the curriculum, address issues of attendance of teachers and pupils, connect to the parents and the community, manage the financial and personnel issues of the school, supervise the work of teachers and provide guidance to them. They are actually implementing teacher policies on the micro level. However, in practice, school leaders are often poorly prepared for this role, with limited or no training in leadership, mentoring and supervision. School leaders often see their role in very different terms and focus above all on dealing with regional offices and administrative issues.

Problems of school leadership are compounded by a lack of adequate policies providing guidelines for teacher management. Inspection systems have limited capacity to reach teachers with sufficient frequency to have an impact, especially in rural areas, and even where problems are uncovered, they have limited capacity to address them. School inspections often focus on administrative matters while avoiding pedagogic issues, because school inspectors often have no capacity to deal with them, and inspection days do not offer the necessary time to tackle problems of quality of teaching and learning. A World Bank multi-country study in Africa found that most countries had far more than 100 teachers for every inspector, with most teachers not receiving inspection visits for many years.[73] Furthermore, opportunities for promotion are often more related to additional qualification than to classroom performance, providing a perverse incentive to neglect classroom teaching.

4.2.7 Infrastructure and teaching materials

Teaching is often constrained by a lack of appropriate infrastructure and resources. Some schools, particularly in remote and disadvantaged areas, have no adequate buildings and not enough classrooms. Where classrooms are of poor standard, teaching time is eroded in bad weather. In Lesotho, schools of poor quality are forced to close in cold weather, in other countries closures may be forced in hot or wet conditions. Many schools have very few or no teaching resources except a blackboard and some chalk, resulting in teaching and learning without visual aids and illustrative or demonstrative materials, except what teachers may produce themselves from low cost materials. Teachers receive little or no support for their teaching and often resort to a transmission model of teaching based on notes. The practice of having to share textbooks makes it difficult or even impossible for students to read individually or engage in self-study. Hence, the lack of appropriate teaching materials and textbooks restricts the opportunities for good teaching.

However, it should be noted that while these factors may restrict good practices, addressing them may not be sufficient to change practices. Improved classrooms may allow longer time on task, and the provision of teaching aids may allow more clear and colourful teaching, but this may have little impact where teachers are sometimes absent and are not trained and prepared to teach with the help of such material. Similarly, provision of books enables self-study and individual reading, but where teachers are unfamiliar with these methods or feel a need to preserve the books, they may not be used effectively.

4.2.8 Corruption in teaching

Teacher provisions in developing countries offer numerous opportunities for corruption or other improper practices. Some of these practices are aimed at improperly accessing government funds, while others are aimed at extracting benefits from the communities. The main areas of corrupt behaviour aimed at government funds are likely to be:

a) Ghost teachers or ghost schools, where the salaries of non-existing teachers are collected improperly;

b) Absenteeism, where teachers collect pay for work which they have not done. In some cases, teachers may, by force of economic need in view of a small salary or by other motives, take up a second job, for example teaching in a private school. Lack of adequate monitoring may allow teachers to miss some of their classes without consequences;

c) Improper reporting of location, which may arise where teachers are posted to remote schools, but attach themselves instead to another school and continue to draw their salary;

d) Fraud or theft in the administration of school funds.

In addition, there are some improper activities which impose a cost on the communities. These include:

e) Informal fees. Despite policies of free education, there are reports of informal fees being imposed by some schools, sometimes camouflaged as examination fees or registration fees;

f) Additional tuition costs. Teachers sometimes ask students to pay for additional tuition outside of schools hours. While this may appear innocuous, important content is sometimes reserved for these sessions, so that they become in effect compulsory.

73 Mulkeen (2010). Teachers in Anglophone Africa. Issues in Teacher Supply, Training and Management, page 112.

4.2.9 Teacher attendance

One of the recurring difficulties has been teacher absenteeism. A study based on unannounced visits to schools found an average absence rate of 19 per cent, with a similar proportion "absent on the premises" (i.e. at the school but not in the classrooms where they were supposed to be teaching), suggesting that pupils may be missing around 40 per cent of the officially expected teaching.[74] Other studies found a similar scale of absence. A study in Zambia in 2005 found that 18 per cent of teachers were absent on the day of the visit.[75] In Uganda, a 2006 study found almost 20 per cent of teachers were not in the school, and nearly one-third of teachers were at school, but outside of the classroom when the enumerators visited.[76]

A certain level of absenteeism is difficult to avoid in countries where medical facilities and transport systems are poor. However, the level of absenteeism in public schools and especially the absence on the premises is indicative of failures to adequately manage teachers and in some cases is exacerbated by difficulties in delivery of payment, as some teachers have to spend a whole day to collect their payment.

4.2.10 Ghost teachers

Education systems can be defrauded through payment of salaries to teachers who are not working in the system. These teachers, often called "ghost teachers", have sometimes left the service without being taken off the payroll. In other cases, they are completely fictitious teachers who were placed on the payroll for the purpose of fraud. In some cases there have been reports of entire ghost schools, created for the purposes of defrauding the system.[77]

The scale of the problem is, for obvious reasons, difficult to determine. However, media reports suggest that the problem is believed to be widespread in a number of countries. In Uganda, a payroll cleaning exercise in 2012 removed 5,000 ghost teachers (of a total teacher force of about 140,000, i.e. 3.5 per cent) from the payroll.[78]

Ghost teachers have a number of negative impacts on the system. First, they draw resources from the education sector. Second, they distort staffing calculations, resulting in understaffing in schools where ghosts appear on the payroll. This effect may be most significant in remote schools, as ghost teachers are most likely to appear in schools with little supervision. Third, the presence of ghost teachers undermines public confidence in the education sector, the status of teachers in general and the morale of the teachers who are not benefiting.

74 Chaudhury et al. (2006). Missing in Action: Teacher and Health Worker Absence in Developing Countries, page 5ff.

75 Das et al. (2005). Teacher Shocks and Student Learning: Evidence from Zambia, page 5.

76 Winkler and Sondergaard (2008). The Efficiency of Public Education in Uganda, page 38f.

77 Guardian, The. Hundreds of Pakistani 'ghost schools' have funding stopped. https://www.theguardian.com/world/2015/nov/10/hundreds-of-pakistani-ghost-schools-have-funding-stopped (accessed July 2017).

78 Aidan Mulkeen has taken the information from an unpublished report of the Education Development Partners' Annual Retreat in 2012 in Kampala. It is also widely reported in the media but with different numbers each time; see for example: https://ugandaradionetwork.com/story/unatu-30000-teachers-deleted-from-govt-payroll (accessed July 2017); http://www.newvision.co.ug/new_vision/news/1320916/ghosts-persisted-gov-payroll (accessed July 2017).

V Responses to the quality challenge

5.1 Introduction

The issues of teacher quality are complex and interrelated, and it is unlikely that there is any single solution. Furthermore, any efforts to address teacher quality should be seen in the context of the supply, deployment and equity challenges noted in chapter 2 above. A quality-enhancing intervention, such as increasing the qualification standards for teachers, could easily reduce the pool of teachers or make it more difficult for teachers from marginalized groups to access the profession, resulting in increased deployment difficulties.

The main interventions that are used to address the quality of teaching can be organized into three main groups:

a) Training – pre-service and in-service training, and selection into training;

b) Management – including attendance monitoring, enhanced school leadership, and support and supervision systems;

c) Accountability – systems which provide incentives based on school performance, or empower communities or other groups to monitor schools.

5.2 Training responses to quality issues

Increased training for teachers is one of the most frequent responses to quality concerns. Three main interventions are commonly used; (i) enhanced initial teacher education, (ii) improved selection into teacher education, and (iii) in-service training.

5.2.1 Enhancing the quality of initial teacher education

It is clearly desirable to provide an initial teacher education which ensures that teachers have a thorough grasp of the content knowledge, have developed a range of teaching skills, and have the professional attitudes and values required to take on the role of a teacher. Enhancing quality is often seen in terms of extended duration or increasing the level of award (from certificate to diploma or diploma to degree). As Hanushek and Woessman point out, there is evidence that good teachers make a difference, but it is not clear that additional qualifications necessarily make better teachers.[79] Duration and level can be changed with little impact on quality of classroom skill and in some cases changing the level of award involves a "more academic" programme, with less practical skill development. Changing the level and duration may also have implications for salary.

It may be more expedient to first examine existing teacher training curricula. Teacher training courses may aim to include higher-level content knowledge that is not well matched to the school curriculum. Too often, this nominally more advanced content is learned by rote and does not ensure sufficient understanding of the school-relevant content. Examples might include teaching Shakespeare plays to student teachers instead of ensuring an understanding of English grammar, or teaching advanced theorems (which can be learned by rote) instead of ensuring a good understanding of the principles behind school mathematics. It has also to be ensured that initial teacher education includes knowledge and skills regarding lesson planning, teaching methodology and didactics, assessment of learning outcomes, classroom management, child psychology, recognizing and supporting students with disabilities, and principles of inclusive education. Moreover, it should offer training in skills to teach early reading. Ideally, the students' understanding of school-level content should be tested at the end of the course to ensure that minimum standards are met. Testing for understanding means setting questions that cannot be answered from memory and that involve students in solving problems with or manipulating the information. In mathematics, this could

79 Hanushek and Wößmann (2007). The Role of Education Quality for Economic Growth, page 2ff.

involve problem solving. In languages this could involve tests of comprehension of previously unseen passages of text.

It may also be necessary to enhance the pedagogical component of initial teacher education. In systems where transcription and chorus answering are dominant teaching methods, introducing more student-centred practices is challenging and is most likely to work if student-centred practices (i) are being advocated by teachers, (ii) are viable in their classrooms and (iii) are encouraged during a sustained period of supervised teaching practice.

However, it is important to note that interventions in initial teacher education are a limited mechanism for improving quality. First, because they only reach new teachers. Innovations introduced through initial teacher education take a long time to permeate the system. Second, because newly qualified teachers are the youngest and most junior teachers in the school, they are in a poor position to initiate changes and are more likely to adopt the common practices in the school. For these reasons, quality improvement programmes often seek a blend of interventions at pre-service, in-service and school management levels.

5.2.2 Improved selection into teacher education

Some countries have tried to address quality concerns by increasing entry standards and attracting better qualified applicants. In The Gambia, for example, the entry requirement for the Primary Teachers Certificate has been increased to 2 credits plus two passes in the West African Senior School Certificate Examination (WASSCE),[80] including at least a pass in mathematics and English (2012), which is intended to ensure minimum entry standards. In addition, student teachers are paid a small stipend, which is intended to make teaching accessible to applicants from poorer families. There may also be some potential in selecting prospective teachers through interviews and other methods to ensure suitability for teaching, although these are not widely used at present, possibly because of concerns about the need for a transparent system.

5.2.3 Provision of in-service teacher education (continuing professional development)

In-service teacher education has been widely used, both as an initial qualification for unqualified teachers and as CPD for existing qualified teachers. In the case of unqualified teachers, in-service training has been used successfully in many countries. In Lesotho, for example, the Distance Teacher Education Programme allowed unqualified teachers, often recruited locally, to undertake a 3-year part-time qualification, based on the same content as the campus based 2-year course. Such approaches have often worked well, although the provision of face-to-face contact time is important, as unqualified teachers often lack the skills to study autonomously.

In-service training aimed at CPD has also been widely used, usually in the form of short courses, sometimes during school time. Where not well managed, there can be multiple overlapping projects, leading to duplication of courses, inconsistent payment rates, uneven coverage and large numbers of teachers missing classes. In general, CPD is likely to work best when it is systematic, sustained over a period, and assessed. In The Gambia, the Ministry of Basic and Secondary Education launched a national programme of in-service upgrading for qualified teachers in 2011. All teachers without credits in mathematics and English were invited to join a programme running over 18 months, and leading to re-sitting the WASSCE (upper secondary) examination, with the promise of an additional salary increment on gaining a credit. In the first phase, over 50 per cent of the basic education teachers in the country enrolled.

Large scale in-service training is often delivered through a cascade approach, where the course developers train master trainers, who then train other trainers, who subsequently train teachers. The number of steps in the cascade varies with the size of the country. While cascade training is logistically efficient, there is a high risk that the message of the training will be diluted by the time it reaches classroom teachers. This approach is particularly risky where the training is intended to change classroom practices, as the trainers may lack the practical experience of using the pedagogical approaches that they are advocating. Where training is aimed at changing classroom practices, it seems more likely to be effective when it is very specific to the curriculum, delivered by practitioners, and includes follow-up support in the classroom as offered by systems of CPD.

School-based teacher education is actually one form of CPD. In this model, teachers are given additional training and support at the school where they work, either (i) by visiting trainers, (ii) by senior colleagues, or (iii) through peer-learning structures. This approach has the advantages of allowing multiple teachers in a school to get training at the same time, which should make it easier for teachers to put the new ideas into practice. It should also help to ensure that the training is realistic in the context of the school. Peer learning systems have the added benefit of allowing teachers to develop their own approaches, which are then much more likely to be put into practice. However, school-based and peer methods are most likely to be effective when the school is already a centre for some good practice which can be shared.

80 WASSCE is a school leaving examination used in Anglophone countries in West Africa and administered by the West African Examinations Council (WAEC).

5.2.4 General remarks on teaching styles

There are three main aims of teacher training. The first is to ensure that teachers have a sufficiently deep understanding of the content. The second is to equip teachers with a range of suitable pedagogical and didactic skills including the setting of tests and giving feedback. Both are requirements for effective teaching. The third would include skills in classroom management, cooperation with parents, addressing different learning needs and recognizing and dealing with students with disabilities. The first two are interlinked, as both teachers who do not fully understand the content as well as teachers not conversant with didactics and teaching methodology are restricted to modes of teaching that are little more than transcription of repetition from notes.

In high-income countries, educators frequently advocate teaching methods based on interaction with students aimed at building student understanding, based on interaction and questioning. Professional teachers are expected to constantly evaluate and develop their own practice, to be aware of the needs of individual students and to have a clear strategy for developing understanding of the concepts in the subject.[81] In developing countries, the dominant teaching style is often a rote-learning style, based on repetition and transcription.

Some characteristics of teaching styles

Teaching for understanding	Teaching for rote learning – "chalk and talk"
1. Explanation of lesson objectives	1. Transcription of notes from the board
2. Linking lesson with previous lessons	2. Chorus answers (whole class answers)
3. Linking content with real experience	3. Material presented in formal language
4. Constant questioning and interaction	4. Limited questioning
5. Use of open-ended questions	5. Closed questions (one correct answer)
6. Use of higher-order questions (requiring some analysis or judgement)	6. Lower-order questions (recall of facts)
7. Use of discussion in class	7. Teacher talk dominates
8. Exploring the reasons behind the facts	8. Presentation of facts and procedures without explanation of reasons
9. Asking for reasons and alternatives	9. Limited probing of reasons or alternatives
10. Use of assessment for feedback to teachers, then from teacher to students	10. Use of assessment for grading
11. Use of group-based learning	11. Teaching the class as one group
12. Teacher reflects different learning needs of learners	12. Teaching assumes homogeneous class
13. Lively opportunities for experiential learning	

While teaching for understanding is desirable, moving teachers to a teaching style aimed at developing understanding is a difficult challenge. It requires time and repeated training courses, combined with CPD activities. While the chalk and talk style is easier to manage in large classes and places fewer demands on the teacher in preparation and creativity, it usually limits students' learning in the classroom and beyond and does not allow them to develop their own potentials for lifelong learning.

5.3 Management and support responses

5.3.1 School leadership

Fair and efficient school leadership and management is increasingly recognized as an important factor for the improvement of the performance of schools and their teachers and students. Improving leadership at school level is likely to be more effective than investing in centralized inspection systems, given the relatively high cost of transport and the high numbers of schools and teachers school inspectors are often in charge of. The impact of enhanced school leadership is difficult to quantify, as it is difficult to separate from other factors. Nevertheless, Hattie, in his meta-analysis, has reported that training of school principals has been shown to have a moderate positive impact on quality.[82] Programmes which equip school leaders with practical skills to monitor and support teachers are likely to have a positive impact. Courses involving long periods away from school or taking a very theoretical approach to leadership may be less beneficial.

5.3.2 Monitoring of attendance

There are indications that simply monitoring teacher attendance can have a significant impact. In The Gambia, the introduction of cluster monitors (support teachers responsible for about ten schools each) was reported to result in an increase in head teachers taking action on absenteeism and increased teacher attendance. Clear guidelines on attendance may also have an impact, which would be part of teacher policies. In The Gambia, recent guidelines have been issued indicating that teachers may not be absent more than two days per month, which means that teachers who have been absent for any reason may lose the opportunity to attend in-service courses or other professional development activities.

81 Hattie (2009). Visible Learning: A Synthesis of Over 800 Meta-Analyses Relating to Achievement, pages 126–128.

82 Hattie (2009). Visible Learning: A Synthesis of Over 800 Meta-Analyses Relating to Achievement, pages 83–85.

Using cameras to monitor teacher attendance: An example from India.

Context: In India, teacher absence is high, with teachers missing about 40 per cent of classes. Disciplinary action is rarely undertaken against absent teachers: in a survey of 3,000 Indian government schools, only one principal reported a teacher having been fired for poor attendance.[83]

A local NGO (Seva Mandir) gave each class a camera, with instructions to take a picture of the teacher and the class at the beginning and end of each school day. This monitoring was linked to salary; ordinarily a teacher earned Rupees 1,000 per month. In the monitored system, teachers were paid a minimum of Rs500, and an additional Rupees 50 for each day taught. Thus a teacher with full attendance could earn Rupees 1,300.

The programme resulted in an immediate and long-lasting improvement in teacher attendance rates in treatment schools. During the study's 30-month cycle, teachers at programme schools had an absence rate of 21 per cent, compared to 44 per cent at baseline and 42 per cent in the comparison schools. Absence rates stayed low after 14 months of the programme, suggesting that teachers did not change their behaviour simply for the evaluation – their response was almost entirely due to the financial incentives.[84]

5.3.3 Addressing ghost teachers

The phenomenon of ghost teachers discussed above has often been addressed by payroll cleaning exercises. Some payroll cleaning can be done by a systematic review of records school-by-school. However, to address widespread collusion to disguise ghosts, some countries have identified a single day on which employees must report to their place of work and asked enumerators from outside the sector (sometimes police or army) to verify attendance. These large-scale actions have been effective in identifying non-existing teachers and those who have more than one job.[85]

An effective Education Management Information System (EMIS) or its equivalent specifically for teacher and other human resource management is increasingly the preferred option to handle this issue.

There may also be potential to involve the local community in payroll cleaning and verification. If teacher allocation is formula-based and local communities are aware that every ghost teacher displaces one real teacher, the local communities have a strong incentive to report ghost teachers.

5.3.4 Support services

There has been successful support for teachers based on provision of local teacher centres or local mobile trainers who can provide support at school level. In Uganda, a system of cluster centre tutors (CCTs) was introduced to provide support for an in-service teacher training programme. These CCTs assisted the training of groups of teachers in a locality and also visited them at school. In The Gambia, a "cluster monitor" is allocated to every ten schools and is expected to live at one of the schools and travel by motorbike to visit each school every two weeks. Both head teachers and teachers find the system helpful, noting the benefits of improved support for teachers and improved communication with district offices.[86] This latter aspect is important since contact between schools and district education offices is often scarce because of lack of transport.

There have been positive experiences in cases where teachers were given a voice in their own CPD. This would enhance teachers' ownership of their own professional development, their understanding of the aims and purposes of a change in teaching style and enable them to set their own targets. In Malawi, under an externally funded project, groups of secondary schools were combined into clusters and given a budget (of about $100 per term) to facilitate meetings between schools to consider relevant topics. The level of activity of clusters varied, but some worked very well, and even developed and marked in-house examinations together. Zambia developed a sophisticated three-tier hierarchy of support structures, with school level in-service education and training committees, zonal centres (serving a small group of schools) with volunteer staff and district centres with full-time staff and more facilities.[87]

83 Chaudhury et al. (2006). Missing in Action: Teacher and Health Worker Absence in Developing Countries, page 16f.

84 Innovations for Poverty Action (IPA). Encouraging Teacher Attendance through Monitoring with Cameras in Rural India. http://www.poverty-action.org/study/encouraging-teacher-attendance-through-monitoring-with-cameras-rural-india (accessed July 2017).

85 Mulkeen (2010). Teachers in Anglophone Africa. Issues in Teacher Supply, Training and Management, page 98.

86 Voluntary Services Overseas (2007). Teachers Speak Out: A Policy Research Report on Teachers' Motivation and Perceptions of Their Profession in The Gambia, page 8ff.

87 Mulkeen (2010). Teachers in Anglophone Africa. Issues in Teacher Supply, Training and Management, page 98.

5.3.5 Textbooks and teaching materials

Provision of teaching materials (textbooks, visual aids, materials for learners with disabilities and teacher manuals) is one of the strategies frequently used to improve the quality of teaching. Textbooks are a relatively low-cost intervention (compared with teachers or buildings), and are likely to have the greatest impact when teacher quality is low and other resources are scarce. Books provide material for students to read when learning literacy and provide study materials for those already literate. The availability of books in the target language is particularly important when teaching literacy using local languages, where there is little written material available. The availability of textbooks is also a highly political issue. They are one of the most visible components of a government educational provision and their absence is noted by parents.[88]

There is some empirical evidence of the impact of teaching materials. A World Bank evaluation of education support for Ghana between 1988 and 2003 found that while teaching methods were the greatest determinant of learning outcomes, there was a statistical association between student learning outcomes and the availability of textbooks.[89]

Teaching materials are often seen as a way of teacher proofing or overcoming the disadvantages of poorly trained teachers. While well-designed textbooks can help a poorly trained teacher to structure the material, find appropriate ways of explaining concepts and suitable learning tasks, good textbooks are not a sufficient input to enhance teaching quality, as poorly trained teachers often lack the skills to use textbooks effectively. Moreover, where teachers are held responsible for the condition of textbooks at the end of the year, they may remain unused in storage. This suggests that textbooks and instructional materials will be of greatest value when linked with teacher training in the appropriate use of the resources.

5.4 Accountability and autonomy responses

One group of measures that has been used to address the quality of teaching and learning concerns teacher accountability. These interventions can be divided into four types:

- Performance management – standards-based reforms;
- Use of performance assessments linked to bonus payments for teachers;
- Delegating responsibility to schools; and
- Empowering local communities to monitor schools.

In all four approaches, these measures can only work if the teachers have the capacity to improve their own performance and therefore are more appropriate for situations where attendance and commitment are the main issues, rather than in cases where teacher content knowledge or their teaching skills are the main challenges.

In turn, a reciprocal principle demands that education systems should be accountable to teachers, in terms of providing effective professional support and acceptable working conditions.[90]

An alternative approach to top-down managerialism relies on increased teacher professionalism as a guarantor of teaching and learning quality. Based largely on elements of teacher autonomy, self-motivation and a sense of empowerment as a professional whose well-understood mission to help learners progress in school and life, teacher professionalism can be an effective management lever in the right context. The approach, rooted in decades-old international standards for teachers[91] is a key strategy of what are termed high-performing education systems. The challenge in many low-income countries is to provide or encourage the conditions that favour greater teacher professionalism, including a strong code of professional ethics, in a very restrictive resource environment, as noted above. Where successfully implemented, this approach including local monitoring of schools provides an alternative to notoriously weak management systems in such countries.

5.4.1 Performance management

Globally there has been a movement to improve quality through performance management. Typically this involves development of expected standards of achievement for students, introduction of systematic standardized testing and measures to address poor performance in schools. In the USA for example, the No Child Left Behind policy involved annual testing of all children, performance targets for schools, extra resources for schools failing to meet the targets, and changes in management and staff for schools consistently failing to reach the targets. Those supporting this approach argue that it has the benefit of ensuring a focus on learning from the early grades (as opposed to dependence on national examinations at the end of a primary or secondary school cycle) and shifting the focus from higher performers to a broader range of students. This latter aspect may be particularly important in countries with low completion rates, where learners with differentiated needs are often neglected.

88 Read (2011). Learning and teaching materials: policy and practice for provision, page 4ff.

89 World Bank (2004). Books, Buildings, and Learning Outcomes: An Impact Evaluation of World Bank Support To Basic Education in Ghana, page 13ff.

90 UNESCO (2017). Teacher Policy Development Guide, page 75.

91 ILO and UNESCO (1966). Recommendation concerning the Status of Teachers.

There has been strong criticism of the standards-based reform approach. It can, particularly where the consequences of failure to meet targets are high, lead to (i) a narrowing of the curriculum to teach to the test, (ii) increased pressure on students, and (iii) exclusion of learners with differentiated needs. It has also been argued that strong performance management systems distort teacher behaviour, disempowering teachers and reducing their ability to respond professionally to the needs of their students.[92] In some cases teachers may be under pressure to focus on students who are close to the defined standards, while neglecting the needs of high performers who will pass anyway and of those who are unlikely to pass.

To date, there is no consistent evidence that performance management systems have had a significant impact in high income countries. Evaluations of the No Child Left Behind policy have reported mixed findings, with gains in some grades and not in others.[93]

For better or worse, performance management based on higher standards is synonymous with teacher performance evaluation systems. Good practice for teachers suggests that performance evaluation serves both to measure performance, especially underperformance or poor performance and (with the same objectives in mind) to inform and guide professional development progress based on individual or systemic plans. In this regard, performance management based on higher standards is closely tied with CPD measures and other forms of professional support such as strong school leadership. Because of measurement difficulties, using test results in teacher evaluation or appraisal has proven to be problematic. Teacher appraisal is best used in a formative way, focusing on improving professional practice, linked to school-wide evaluation, strategy and goals and based on holistic criteria, including specific aspects of the school context. The General Teaching Council of Scotland (GTCS) Framework provides a useful summary of dealing with underperformance, in which support to underperforming teachers is a key component of an improvement strategy.[94]

5.4.2 Performance-based bonuses

Some systems provide incentive payments to either teachers or to schools, linked to student and teacher performance. The impact of these has been difficult to assess, and in some cases no impact could be detected. In their study of Latin American countries, Vegas and Umansky suggest that incentives are less likely to be effective when the incentive is small or is not well linked to students' performance, or when only a small proportion of teachers need to compete for the incentive (as is the case where many will receive the bonus regardless of performance and others cannot receive it no matter how well they perform).[95] They also note potential for negative impacts of performance-based incentives (i) excluding low-performing students from taking the tests, (ii) teaching to the test, (iii) cheating in the test and (iv) offering fee-based tutorials which not all children can afford.[96] Whether financial or non-financial rewards (professional development, study leave) for teachers are used, good practice calls for the criteria, procedures and administrators using them to be equitable, transparent and credible in practice. Poorly administrated and unfair evaluation of performance, based on subjective criteria, testing results taken out of context, patronage or favouritism can be major sources of demotivation.[97]

Mexico: Performance-based promotion for individual teachers

In 1993, Mexico began an incentive programme for teachers known as Carrera Magisterial. In this system, teachers could be promoted to higher levels based on a series of criteria, including qualifications and years of experience, with student test scores making up 20 per cent of the assessment. The size of the bonuses was quite significant, ranging from 24 per cent of basic pay on the first promotion to 197 per cent of basic pay for the fifth promotion. The bonus payment was in the form of an increment and so a permanent recurring payment. Because of the weighting of the teacher assessment, teachers without good academic qualifications could not be awarded the bonus even if their students performed well. A World Bank report concluded that "despite its promise, there is no apparent effect of the Carrera Magisterial Program on improving student performance as measured by a standardized exam."[98]

92 For one critique of recent USA policies see Mathis and Welner (2015). Reversing the Deprofessionalization of Teaching.

93 Dee and Jacob (2009). The Impact of No Child Left Behind on Student Achievement, page 26ff.

94 UNESCO (2017). Teacher Policy Development Guide, page 68ff and 75f; OECD (2013). Teachers for the 21st Century: Using Evaluation to Improve Teaching, chap. 1, page 15ff; ILO (2012). Handbook of good human resource practices in the teaching profession, page 247ff.

95 Vegas and Umansky (2005). Improving Teaching and Learning through Effective Incentives. What Can We Learn from Education Reforms in Latin America?, page 59.

96 Ibid.

97 UNESCO (2017). Teacher Policy Development Guide, page 76.

98 Vegas and Umansky (2005). Improving Teaching and Learning through Effective Incentives. What Can We Learn from Education Reforms in Latin America, page 37f.

Chile: Performance incentives for schools

In Chile, the National System of School Performance Assessment (SNED) was implemented in 1996. It offers a financial bonus to schools with the best performance in terms of student achievement. Schools are divided into groups, so that schools are in competition with other schools serving similar students. In each group, the top 25 per cent of schools receive the bonus, which is awarded every two years. When a school is given the bonus, it is expected to distribute 90 per cent of the bonus among the staff (typically equivalent to half a month's pay) and spend the remaining 10 per cent in the school. There is tentative evidence that the incentive has had a cumulative positive impact on student performance for schools with relatively good chances of winning the award.[99]

5.4.3 School-based management

Delegation of greater autonomy to schools has been advocated as a mechanism for increasing school performance. The core principle is that school effectiveness can be improved by allowing school leaders (principals, and communities) greater control over the school. This may include the ability to reallocate budget lines, to shape the curriculum and to recruit and dismiss teachers. There have been initiatives in numerous countries, including the USA, the United Kingdom, El Salvador, the Netherlands, Kenya and Indonesia, but the level of authority delegated has varied widely. A 2007 summary by the World Bank concluded that there is very little reliable evidence on the impact of school-based management, as the participating schools are often not randomly selected. However, a few comparative studies suggest positive impacts on attendance and on reduction of repetition.[100] While delegation of authority to schools is likely to be highly motivational for schools, there are also risks of improper behaviour in financial decisions or in employment decisions, which require careful consideration. A crucial element of devolving management to schools is a strategy to identify and, via a quality training programme, prepare school leaders to successfully take on the wide range of responsibilities required in the job.[101]

5.4.4 Community empowerment.

There have been a number of measures aimed at empowering local communities to have a stronger voice in school management. Logically, local parents have the strongest interest in a good education for their children, and enabling them to have a voice in the management of the school is likely to have an impact on managerial issues such as teacher attendance. Typical measures include provision of training for parent councils and provision of information about the school through community scorecards. Such systems have great potential in improving school performance but may have the greatest impact in the best-educated communities, displaying greater capacity and confidence to address school management issues.

Some experiments have demonstrated the value of parent power. In Kenya, for example, a World Bank impact evaluation found that contract teachers hired by school committees were significantly more likely to be in class and teaching than civil service teachers (see below).

In Kenya, the Extra Teacher Program (ETP) provided funding to a randomly selected group of schools to allow their school committees to hire local contract teachers from 2005 to 2007. Researchers found that contract teachers were significantly more likely to be in class and teaching, i.e. 74 per cent of the time versus 59 per cent of the time for civil service teachers. Students randomly assigned to contract teachers under the ETP scored a 0.21 standard deviation higher on reading and math tests than their schoolmates assigned to civil service teachers, suggesting a higher – or at least more effective – teaching effort by the contract teachers despite their lower salaries. However, the fact that contract teachers were assigned to a single class of students and stayed with those students for two successive years (unlike the typical pattern of a different teacher each year) may have played a role, too.[102]

99 Vegas and Umansky (2005). Improving Teaching and Learning through Effective Incentives. What Can We Learn from Education Reforms in Latin America?, page 38f.

100 World Bank (2007). What Is School-Based Management?, page 16f.

101 UNESCO (2017). Teacher Policy Development Guide, page 47f.

102 World Bank (2012). Discovering what works in education – The Informed Policy Making through Impact Evaluations.

5.4.5 Autonomy and control

Relying on a high degree of teacher professionalism can also produce relatively flexible but effective teacher management in a sort of virtuous circle of self-motivation and external trust in the results. Professionalism in teaching is associated with a package of interacting factors: high-quality initial and ongoing teacher education; relatively high levels of reward and social status as well as a degree of autonomy and control over professional practice for both individual teachers and the profession as a whole. To be effectively exercised, teacher autonomy depends on (i) high-quality recruitment and education of teachers and (ii) development and strict application of teacher codes (preferably self-developed and applied) that in turn generates confidence of administrators, learners and communities in teachers. Finland provides an example of high educational, social and professional status generating a great degree of autonomy over classroom and working conditions. With no system of external evaluation in place, this system of management has earned the trust of parents and the wider society by the demonstrated capacity of teachers to use professional discretion and judgement in the way they manage their classrooms and at the same time help virtually all students to become successful learners[103] – a virtuous circle.

Conversely, as is the predominant pattern in most low- and middle-income countries, where poor teacher preparation, low salaries and limited teaching resources coincide with little influence and control by teachers and their representatives over working practices and conditions, they are less likely to feel motivated or empowered and less able to produce the best possible outcomes for learners, leading to a vicious circle of low social status, low motivation and morale, and poor professional performance and outcomes. In addition to addressing the resource issues noted earlier in this paper (massive recruitment of poorly trained and supported contract teachers is a strong barrier to the necessary level of teacher professionalism that creates self-motivation and management), education authorities can and should employ a range of other instruments to transform the vicious circle into a virtuous one. Instruments in use include teaching assessment and accreditation councils or bodies to set up and apply high standards for all teachers, and the development of teacher codes of ethics and conduct that are binding on teacher practice without exception. The key is to ensure that breaches of these standards, professional and ethical, may be sanctioned.[104]

5.5 Which factors have an impact? – evidence from meta-analyses

A number of researchers have produced meta-analyses, which use a synthesis of findings from a range of studies to gain some insight into the impact of particular interventions. The findings from such studies highlight the interventions most likely to enhance learning. However, these indications should be treated with some care because interventions differing in context and in the detail of implementation are grouped together in meta-analyses. The method tends to encourage a view that certain interventions work while others do not, regardless of the quality of implementation or context.

Despite these drawbacks, meta-analyses provide interesting perspectives on educational reforms. John Hattie[105] has done a summary of the findings of over 800 meta-analyses, incorporating 50,000 individual studies. Based on the average effect sizes reported, he has developed a hierarchy of educational interventions, showing those that appear most and least effective.

He argues that some of the most effective interventions are those that help students to know how well they are learning, including the use of self-reporting by students and the use of formative evaluation. Another highly ranked strategy is Piagetian programmes, which use approaches to teaching based on the ideas of the Swiss education psychologist Jean Piaget. By contrast, some of the least effective interventions included mobility (moving to another school), use of television and repetition of classes.

103 Sahlberg (2010). The Secret to Finland's Success: Educating Teachers, page 5ff.

104 UNESCO (2017). Teacher Policy Development Guide, page 26 and 31; ILO and UNESCO (1966). Recommendation concerning the Status of Teachers

105 Hattie (2009). Visible Learning: A Synthesis of Over 800 Meta-Analyses Relating to Achievement, pages 14-21.

The most effective teaching interventions according to Hattie

Rank	Influence	Number of studies	Effect size
1	Self-reported grades. Asking students to estimate their own performance, which is useful as feedback for teachers, and in setting expectations for students.	209	1.44
2	Piagetian programmes. Teaching with a focus on developing formal thinking appropriate to the stage of development of the child, as per Piaget's psychology.	51	1.28
3	Providing formative evaluation. Testing of students aimed at providing constructive feedback to the students.	30	.90
4	Micro teaching. Detailed analysis of a student teacher interaction, often using video or audio recording.	402	.88
5	Acceleration. Allowing high-ability students to move more quickly through the curriculum, so that they are constantly challenged.	37	.88
6	Classroom behaviour. Interventions to improve teachers' classroom behaviour.	160	.80
7	Comprehensive interventions for the learning of disabled students. Special measures aimed at supporting students with specific learning needs.	343	.77
8	Teacher clarity. Asking teachers to clearly articulate their learning aims and the success criteria.	n/a	.75
9	Reciprocal teaching. Systems where students teach each other.	38	.74
10	Feedback. Provision of constructive feedback to students.	1,287	.73

Source: Hattie (2009). Visible Learning: A Synthesis of Over 800 Meta-Analyses Relating to Achievement, page 297.

The least effective teaching interventions according to Hattie

Rank	Influence	Number of studies	Effect size
136	Repetition of classes. Retaining students with poor performance to repeat a year of study.	207	-.16
137	Television. Use of television broadcasts in the classroom.	37	-.18
138	Mobility. Students moving between schools.	181	-.34

Source: Hattie (2009). Visible Learning: A Synthesis of Over 800 Meta-Analyses Relating to Achievement, page 300.

Scheerens,[106] writing for the International Institute for Education Planning (IIEP), has suggested that the factors which make a significant difference may vary in developing countries, where the impact of individual teacher factors may be more significant.

Scheerens' meta-analysis of teacher factors in low- and middle-income countries shows that a number of factors related to teacher education were frequently associated with significant positive effects. However, even this meta-analysis must be treated with some care, as the best-educated teachers are often unevenly distributed and more likely to be found in the schools serving better-educated communities. While some studies control for student-background variables, it is not always certain that positive associations genuinely reflect causal linkages.

Teacher factors influencing quality in developing countries. Number of studies showing a significant positive impact

Teacher characteristics	Primary	Secondary
Years of schooling	9 of 18 (50%)	5 of 8 (62.5%)
Tertiary or teacher college training	21 of 37 (57%)	8 of 14 (57%)
In-service training	8 of 13 (61.5%)	3 of 4 (75%)
Teacher experience	13 of 23 (56.5%)	1 of 12 (8%)
Teacher measured achievement	1 of 1 (100%)	1 of 1 (100%)
Teacher salary level	4 of 11 (36%)	2 of 11 (18%)
Teacher social class	7 of 10 (70%)	

Source: Scheerens (2000). Improving school effectiveness, page 61f.

106 Scheerens (2000). Improving school effectiveness, chap. 2, page 35ff.

VI Education reforms: Stakeholders and perspectives

The extent of education reforms is often determined by the pressure applied by various stakeholders in the sector. The key non-government stakeholders include parents, teachers and their unions and non-governmental providers of education. Main government stakeholders are ministries, universities and the development partners of the ministries.

6.1 Non-governmental stakeholders

6.1.1 Parents

Parents can be among the strongest stakeholders in education. The willingness of very poor families to send their children to low-cost private schools, even when free public schools are available, is a clear indication of the importance attached to education and the determination of parents to make sacrifices for their children. As the most numerous of the stakeholders, parents should be expected to have a strong voice. However, the influence of parents is weakened by a number of factors. First, despite the existence of parent/teacher associations in many countries, parents are often not organized as a group, and so are unable to present a consistent message. Second, the most influential and best resourced parents often send their children to private schools, thus removing any incentive for them to improve the public provision. Third, poorly educated parents may have a limited ability to assess quality in education and may base their judgement on school buildings, facilities and teacher attendance, important factors but not necessarily the final determinants of learning quality.

6.1.2 Teacher unions

Teachers also represent a powerful and important voice in education. There are often more teachers than in any other category of public service employment, and they are often highly organized in unions, giving them the potential to influence public opinion and a strong negotiating position. In some countries, teacher unions have been seen as barriers to quality-oriented educational reforms since they may focus their primary attention on salary negotiations, increasing the teacher wage bill at the expense of other educational expenditures and may go on strike, causing the loss of instructional time. The amount of teaching time lost can be considerable but the prevalence of strikes varies a lot between countries, and over time. A reference from 2007 that still illustrates possible scope of strikes. Helen Abadzi reports that in the Dominican Republic strikes accounted for 19 per cent of lost instructional time[107] and that strikes also accounted for closures in Honduras, where schools were reportedly open for only 114 of the official 200 days in 2001.[108] Strikes and other forms of teacher union protests may also represent legitimate forms of pushing back against government decisions to not properly fund education and teaching services, therefore constituting a defence of better quality education, though the public and development economists rarely see this side of the equation.

However, teacher unions are increasingly taking on another perspective, playing a beneficial and constructive role in educational reforms, in partnership with governments. Education International (EI), the international organization of teacher unions, specifically commits itself to the principle that quality education, funded publicly, should be available to every student in every country.[109] In Finland and Scotland, teacher unions play key roles in formulating qualification standards and accreditation systems for teachers and are engaged together with the government to offer teacher training to satisfy the standards. A multi-country study in sub-Saharan Africa found teacher unions engaged in policy and advocacy work and in provision of professional development and other supports for teachers. Training and CPD was provided in most of the countries studied in a variety of areas, including (i) content-based in-service courses in English, mathematics and science; (ii) training for women; (iii) courses supporting improvement of teachers' formal educational qualifications and (iv) training in professional ethics

107 Abadzi (2007). Absenteeism and Beyond: Instructional Time Loss and Consequences, page 7.

108 Abadzi (2009). Instructional Time Loss in Developing Countries: Concepts, Measurement, and Implications, pages 267–290.

109 EI. Principal Aims. https://www.ei-ie.org/en/detail_page/4360/principal-aims (accessed July 2017).

and school representation.[110] In this way, teacher unions play an important role as both a support for teachers and an accountability check on the education system.[111]

6.1.3. Non-governmental education providers

Many low- and middle-income countries have seen a proliferation of non-governmental education providers, which include (i) government approved schools offering a curriculum equivalent (not necessarily equal) to the official curriculum and approved certification and (ii) non-approved schools. Both types can be offered by non-profit or by for-profit providers of education, such as religious or confessional associations, national or international NGOs, enterprises, or community or parent associations. Their purposes range from offering (i) access to education for disadvantaged groups or groups with special needs, for example regarding language, culturally adapted content, provisions for specific disabilities, mostly offered by non-profit providers (ii) religious education or education towards certain values (for example Education for Peace) mostly offered by non-profit and religious providers, to (iii) education of allegedly better quality than in the government schools, offered mostly by for-profit providers aiming at clients who are discontent with or have no access to the government system and who can afford the school fees. Government-approved private schools may receive subsidies and should regularly be monitored by the government in order to ensure that the criteria of approval (usually quality standards for buildings, equipment, qualification of teachers and school management, curricula, and unrestricted access to the school) are maintained. However, this does not always take place, often due to lack of resources for monitoring.

In some countries, non-government providers of education play an important role to complement the education opportunities offered by the government, particularly in areas of difficult access or for disadvantaged groups, and to an extent that it can be said that non-government providers take over part of the government's responsibility to provide universal primary education. In rural India, for instance, low-fee private schools account for 28.3 per cent of all school enrolment[112], in urban Pakistan for even 59 per cent.[113]

Usually, non-government education providers, even if approved by the government, define the conditions of work and pay of their teachers, and recruit, monitor and support their teachers independently and according to their own priorities. This may give them a comparative advantage over government schools, particularly if their financial basis is secure through school fees and/or through their own financial resources. There are examples of non-government education providers offering better teacher salaries than the government, as there are opposite examples. The same applies to school buildings and equipment. Often non-government providers score through better and more varied textbooks, teachers fluent in the (international) language of instruction and particularly through more intense monitoring of their teachers, which results in low or hardly any teacher absenteeism. Instructional time is therefore higher. Moreover, students usually come from households being concerned about the education of their children. Learning achievement in non-government schools may therefore be higher than in government schools.

A strength of non-government education providers is their flexibility to respond to needs. Until recently, the majority of providers of Early Childhood Education (ECE) were non-government providers although government provision has taken on a much greater role. Non-government provision accounted for 42 per cent of pre-primary enrolments globally in 2014 and 58 per cent in South-eastern Asia.[114] While the need for ECE is broadly recognized, many governments do not yet manage to offer ECE at a large scale and non-government providers step into the breach. However, the privately provided ECE is mostly offered to populations who can pay for it, and only to a lesser extent through non-profit providers to those for whom it is most needed and beneficial, i.e. disadvantaged populations to balance out deficits in education promotion.

6.2 Government responses

6.2.1 Ministries

Teacher policy is strongly influenced by ministries of education and ministries of finance. Ministries of education tend to be concerned about expansion of participation in education and are often expected to report primarily in terms of enrolment and retention rates. The use of enrolment and completion as the primary indicators tends to place more emphasis on numbers than quality, driving ministries into expansion at the expense of quality.

110 Mulkeen (2010). Teachers in Anglophone Africa. Issues in Teacher Supply, Training and Management, page 118.

111 Mundy et al. (2008). Basic Education, Civil Society Participation and the New Aid Architecture: Lessons from Burkina Faso, Kenya, Mali and Tanzania, page 14ff.

112 ASER (2013). Annual status of education report (rural) 2012: provisional.

113 ASER-Pakistan (2013). Annual Status of Education Report. National. Provisional, page 11.

114 UNESCO (2016). Global Education Monitoring Report: Education for people and planet: Creating Sustainable Futures For All, page 206f.

Ministries of finance tend to be concerned about public cost and pension liabilities and may therefore oppose increases in teacher numbers and pay but advocate for greater use of contract (non-permanent) teachers. This provides pressure to increase class sizes or to make greater use of low-cost teachers, even if unqualified.

6.2.2 Universities and institutes of higher education

Universities involved in teacher education often oppose in-service teacher training schemes, which they may see as undermining their campus-based courses. Universities may also oppose the inclusion of greater practical components in courses and tend to place a higher value on the more theoretical aspects. This is partly because the practical components are more difficult and expensive to provide but also at times because university staff lack the expertise to support the practical component.

6.2.3 International agencies and development cooperation

Policy is also influenced by the international agencies and development partners. In cases where domestic resources are mainly committed to teacher pay, external funds often constitute a very significant proportion of discretionary spending, and hence the external donors can have a strong voice in policy development. Following the Paris Declaration (2005), there has been an increased focus on the development of harmonized donor policies aligned with a national plan with country ownership. In addition, agencies strongly committed to single issues (gender, human immunodeficiency virus (HIV), school health) have often been able to have a significant impact on policy with modest funding. Single-issue funding-driven policies may not be sustained after the financial support is removed. International agencies can contribute through international dialogue forums and through support for studies on teacher-related issues.

Institutions with a strong focus on teacher policies can be found on the website of the TTF.[115] This task force was established by the EFA partners in 2008 to coordinate international efforts and advocacy to address the teacher gap. It is now an alliance of national governments, intergovernmental organizations, NGOs, CSOs, international development agencies and private sector organizations that amongst others is contributing to the monitoring of the teacher-related targets of the SDGs.

115 TTF. http://www.teachersforefa.unesco.org/v2/index.php/en/ (accessed May 2017).

VII Teacher policy

In chapters 1 to 6, the multiple causes and consequences of the so-called teacher gap, i.e. the worldwide lack of suitably qualified teachers and the wide-spread inability of education systems to adequately support and retain teachers, were described. Possible correctives and remedies for the teacher shortage were listed and experience from various countries described. Many of the corrective measures fall under the broad topic of teacher policy. However, while particular teacher policies are actually being used to counteract the negative effects of teacher shortage, a comprehensive, coordinated and monitored fully formed teacher policy is still rarely to be found at national level, much less integrated with national education strategies or plans. In the following chapter, the purpose, rationale, assumed impact, as well as limitations and risks of a teacher policy will be described.

7.1 Definition, rationale, dimensions and assumed impact of a teacher policy

A comprehensive teacher policy is a set of principles, concepts, guidelines, plans and strategies striving to ensure high professional teaching standards and quality learning environments that favour the maximum learning outcomes. Adequate, fair and sustainable working conditions for teachers, enabling them to do their work as effectively as possible are key components frequently overlooked in the focus on teacher education and other more highly visible factors. Principal but not necessarily exclusive dimensions of a comprehensive teacher policy include: (i) teacher recruitment and retention, (ii) teacher initial and continuing education, (iii) deployment, (iv) career structures and paths, (v) employment and working conditions, (vi) teacher reward and remuneration, (vii) teacher standards and accountability, and (viii) school governance.[116]

The EFA Global Monitoring Report 2013/14 recommends to make teaching quality a national priority and a strategic objective in education plans[117] and suggests four strategies, (i) attracting the best candidates into the profession, (ii) improving teacher education, (iii) getting teachers where they are most needed, and (iv) providing the right incentives to retain the best teachers. Experience suggests that all four strategies should be actively linked to the development and implementation of a teacher policy. A comprehensive and synchronized teacher policy offers possibilities to eventually replace the tendency to respond in an ad hoc and frequently emergency fashion to issues regarding teaching and teacher quality that require a more long-term and coordinated policy approach and practice if education plans are to be fully achieved.

As previous chapters of this paper highlight, a well-qualified and motivated teaching cadre is the key to quality education, and to be well qualified and motivated, a good policy to frame the most suitable plans, regulation, legislation and funding are indispensable. For the attainment of SDG 4 a sufficient number of qualified and motivated teachers is a prerequisite. For teachers to stay in their posts and offer quality education, they have to be selected and recruited properly, trained comprehensively, deployed fairly and supported adequately through CPD. For the teaching profession to become an acceptable or attractive choice, employment and working conditions have to be defined at an appropriate level equal to the expectations placed in teachers, including chances for career development. For teachers to become committed and motivated professionals with high expectations for themselves and their students, they have to be granted some autonomy and participation in social dialogue and discussions regarding education, particularly in issues relating to their own working conditions. It is an obligation of an education system to maximize taxpayer investments in teaching and learning by creating the conditions that maximize teachers' contributions to these ends. For this, the responsibilities and rights of teachers as employees just as the responsibilities and rights of the education system as employer should be defined in a comprehensive teacher policy and the fulfilment continuously monitored mutual responsibilities.

116 UNESCO (2017). Teacher Policy Development Guide, page 43 and chap. 3.5, page 62ff.

117 UNESCO (2014). EFA Global Monitoring Report 2013/14: Teaching and Learning: Achieving quality for all, page 22f and pages 214–229.

Teacher policy standards and regulations have to complement one another, be matched and synchronized and have to be based on the conditions and available choices in a given country, the targets and objectives for the education sector and the needs and interests of all concerned. Teacher policy is a key aspect of public policy, serving as an instrument to direct allocation of public resources and actions with the purpose of enhancing teaching quality. The policy can be in the form of a legislative act or a set of regulations or a programme. Its rationale is to provide a transparent, fair, feasible and sustainable frame of work for teachers, arguably a prerequisite for good teaching. It thus creates conditions for a motivated and professional teaching cadre with the aim to "ensure equitable learning success for all learners and maximize investments in education and guarantee sufficient numbers of competent and motivated teachers, particularly in locations where they are needed"[118].

The TTF launched a Teacher Policy Development Guide in 2015. It offers an overview of teacher-related policy dimensions and issues that need to be considered when elaborating a national teacher policy, and is meant as a tool to assist countries endeavoring to develop such a policy. The guide is the first international document to systematically introduce all facets of teacher policy. It is used in the following sections as the main reference. The Teacher Policy Development Guide comes in a comprehensive and a summary version. As the Guide points out, teacher policy is also inspired by the International Labour Organization (ILO) and UNESCO Recommendation concerning the Status of Teachers of 1966 and the ILO Handbook of Good Human Resource Practices in the Teaching Profession of 2012.

7.2 Summary of dimensions of a teacher policy

Teacher recruitment and retention
A strategy for teacher recruitment and retention has to be based on data about the present and projected future demand of teachers regarding their quantity and quality. Demographic trends, sector targets like increased enrolment and/or completion rates, reduced pupil-teacher ratio or expansion of ECE have to be taken into account as well as the gender ratio and subject needs.

The strategy has to ensure that suitable teachers are recruited and retained in the system. Entry requirements into the profession have to be set, balancing between attracting the best possible candidates and meeting the quantitative needs. Entry conditions may have to be modified for targeted recruitment of candidates from geographical areas where teachers are needed. An entry test checking for academic qualification and motivation for the profession and procedures for licensing of teachers may be established. If needed, a recruitment strategy may have to include the hiring of contract teachers to meet quantitative needs with limited financial resources but would also have to plan for training and eventual integration of contract teachers into the regular teaching force.

To increase retention of teachers in the system, all teacher posts should offer fair and sufficiently conducive work conditions including professional support, opportunities for career development and access to information and participation in dialogues regarding teacher and education issues.

There should be special recruitment procedures for school leaders based on the knowledge, competencies and attitudes required from school leaders. The Inter-agency Network for Education in Emergencies (INEE) has produced standards and recommendations for recruitment of teachers in emergency situations.

Initial and continuing teacher education
A teacher education framework will have to refer to three interrelated stages of teacher education, i.e. (i) initial teacher training, (ii) an induction period and (iii) CPD. Content and curricula of initial teacher training have to be aligned with the national education policies and the school curriculum. The policy has to ensure that teacher training combines theory and practice in the fields of lesson planning, teaching methodology (pedagogy and didactics), classroom-based assessment of learning, child psychology, classroom management, cooperation with parents, recognizing and supporting students with disabilities, principles of inclusion and equity and a phase of teaching practice, if possible supervised by experienced teachers.

A teacher education framework also has to define the required qualification and experience of teacher educators who need to be familiar with classroom reality and able to convey a variety of methods for active teaching and learning. There should be a selection process and opportunities for professional development for teacher educators.

An induction period for newly qualified teachers with support through a mentor teacher is recommendable. Like teacher educators, mentor teachers would need to be selected and offered professional support.

CPD for teachers should be an integral part of teacher education and included in education budgets. It should be school-based as far as resources in schools permit effective CPD, focused on practice, based on the teachers' needs, but it should also take into consideration new system reforms such as changes in the curriculum. CPD can use diverse

118 UNESCO (2017). Teacher Policy Development Guide, page 21.

approaches, e.g. peer work of teachers, individual self-reflection, professional supervision by full-time supervisors or mentoring/coaching by the school head or expert teachers selected for this task. It is essential that CPD also includes input from outside the teachers' immediate environment. Teachers should become involved in the elaboration of modes and content of CPD and take responsibility for their own CPD.

Deployment
A deployment strategy should be based on information regarding the needs and preferences of teachers seeking employment and of schools seeking teaching staff from a Teacher Management Information System (TEMIS). The two basic models of deployment are (i) centrally managed systems and (ii) school-based systems, where schools advertise posts and teachers apply directly to them. Essentially, both systems tend to result in well-qualified teachers taking the attractive posts and disadvantaged areas getting the least experienced and qualified teachers. A deployment strategy must find ways to counteract this tendency and ensure that there are sufficient good teachers in disadvantaged areas. Strategies for this include (i) rewarding service in difficult-to-staff schools through salary increments, accelerated promotion, preferred access to further studies or distance CPD, housing, etc., (ii) compulsory posting in difficult-to-staff schools for a certain period of time or as a condition for education subsidies, (iii) recruiting teacher students from hard-to-staff areas who are willing to stay there as teachers. Several strategies can be applied in parallel. Incentive strategies have to be well targeted and sufficiently funded.

Initial postings of newly qualified teachers should always be to schools where they get support from experienced colleagues, and teachers requiring medical care or with disabilities should be deployed to areas where they get the necessary support.

Career structures and paths
A career structure allowing for progression, development, and specialization is important to attract and retain teachers, contributes to their professionalization and allows experienced and competent teachers to mentor and train teachers with less experience. Opportunities for systematic CPD need to be defined and offered, and there should be differentiated paths for vertical careers in school management, education administration, teacher education or curriculum development as well as for horizontal development along quality categories. Several countries have introduced certifications for teacher performance, for example advancing from newly graduated teacher to accomplished teacher, expert or master teacher, which are accompanied by salary increments and/or taking over responsibilities in material development, mentoring, or curriculum development. A career structure should also include access to part-time work or unpaid leave to enable further training or studies.

Employment and working conditions for teachers
A policy on working conditions for teachers should be established in consultation with teacher union representatives. Employment and working conditions have a strong influence on teacher morale, motivation, professional satisfaction and teacher status and therefore on the ability of the profession to attract and retain good candidates. Dimensions of working conditions include (i) hours of work and workload, (ii) class sizes and pupil-teacher-ratios, (iii) school infrastructure, (iv) availability of teaching-learning material, (v) student behavior and discipline, school violence, and (vi) autonomy and control.

The amount of working hours should be defined, taking into consideration teaching time, time for lesson preparation, student assessment and support, administrative responsibilities, extra-curricular activities, parent interaction and professional development. Class size and teaching in multi-grade classes are further factors in a teacher's workload and have to be considered when defining working hours. The amount of time teachers may dedicate to private tuition of students should be regulated. Provisions for flexible working hours are an advantage.

School infrastructure and the availability of teaching aids are important factors in teacher satisfaction and educational outcomes. Employers should be obliged to provide safe and functional buildings and basic equipment for effective teaching and learning, including a staff room or at least a place for teachers to meet and adequate sanitary installations for students and teachers.

Student behavior and discipline as well as school violence should be concerns of a teacher policy. Teachers may suffer from lack of student discipline but violence through corporal punishment or gender-based violence is highly unacceptable. Policies for the protection of students, teachers and schools are necessary and should refer explicitly to violence against students.

Teacher professionalism is increased by granting them more autonomy and control over their work. In some countries, teachers are conceded a high degree of professional autonomy, while in others there is a vicious circle of low social status of teachers, low motivation and morale, and a low level of performance and learning outcomes. The guiding principle is that teachers provide the best professional work if they can (i) work autonomously within clearly defined responsibilities, (ii) contribute towards elaborating, implementing, and evaluating their terms of service, and (iii) engage in collegial activities, interaction with parents, and professional development activities.

Reward and remuneration
Reward includes monetary as well as non-financial benefits like allowances, leave entitlements, access to professional development, pension and social security. Teacher salaries

have been found to be one of the key factors of high-performing education systems as well as important determinants of teacher status and prestige. Salary levels have to be established in relation to (i) national income levels, (ii) minimum living standards (in poor countries), (iii) salaries in comparable professions requiring similar qualifications and (iv) the fiscal capacity of the country. The EFA Fast Track Initiative's initial benchmark for teacher salaries was approximately 3.5 times the GDP per capita, which turned out to be too low in some very low-income countries. Establishing adequate teacher salaries may mean a trade-off between teacher numbers and class sizes or teacher working hours, which in turn can affect teacher motivation and education quality. Several higher income countries have chosen high salaries for well-trained teachers at the expense of larger class sizes. Class sizes do have a negative effect on teaching quality beyond a PTR of 1:40 or 1:50, so there is some margin. An important reason for low teacher salaries is low funding for education in some countries. While only 41 countries worldwide devote at least 6 per cent of the GDP to education (according to the Education 2030 Framework for Action, governments shall allocate at least 4 to 6 per cent of GDP to education in order to be able to achieve universal primary education), 25 countries dedicate under 3 per cent of the GDP. Donor funding is no long-term alternative since donors mostly object to finance recurrent costs like salaries. Suggestions for creating fiscal space for adequate teacher salaries include (i) improving tax collection, particularly from corporations, enterprises and the informal sector, (ii) modifying budget allocations away from some sectors (for example the military sector) towards the education sector and (iii) adjusting international policies on borrowing and donor policies on assisting funding of recurrent education expenditures.

Teacher standards and accountability
An increasing number of countries is developing professional standards for teachers, defining good teaching in their context and outlining the knowledge, competencies, attributes and skills necessary in order to implement such good teaching. It is essential that standards are set in close cooperation with teachers and their associations and are frequently reviewed and adjusted. Standard frameworks often include several domains like (i) knowledge of academic subjects, (ii) skills in making lesson plans, (iii) pedagogical skills and teaching practice, (iv) assessment of student learning, (v) support of all learners and (vi) capacity for further professional development. Standards are translated into observable performance, which is usually expressed in statements describing the performance in a scaled manner, ascending from a low level to a high level of accomplishment. Standards provide a framework for measuring teacher performance that can be used for accreditation of teachers, definition of career and salary stages and as guideline for professional development when combined with supportive measures. Specific standards may be set for novice teachers for their accreditation as a teacher.

Accountability in education is reciprocal: while teachers are accountable towards the education system regarding the quality of their teaching, the education system in turn is accountable towards the teachers regarding the quality of support and working conditions. A teacher policy should focus on this mutual accountability.

School governance
School governance is increasingly recognized as a crucial factor for education quality, and there is growing awareness that school leaders have to be specifically selected and trained rather than be promoted from the teaching staff. Responsibilities of school leaders include management of teaching and non-teaching staff, supporting and monitoring of teachers, managing the school's finances, liaising with parents and with the next-higher level of education administration, managing school environment and defining the culture and ethos of the school. A teacher policy should include regulations for the recruitment, training and retention of suitable school leaders, regular evaluations of schools and continuing training for school leaders focusing on their responsibilities.

7.3 Development of a teacher policy and key actors
A teacher policy should be (i) comprehensive and holistic, including all determinants of learning success linked to teachers and ideally applicable to all teachers and schools, (ii) aligned to other national policies, particularly to all education policies and plans as well as to the country's context and conditions and (iii) acceptable to all important stakeholders, particularly teachers and their representatives, since they are most directly concerned and most important for successful implementation. Given these far-reaching demands and requirements and the high number of stakeholders, elaboration of a teacher policy is a complex, challenging and time-consuming political process, that is likely to require compromises between different stakeholders and trade-offs between competing priorities. The most important prerequisites for formulating an agreed teacher policy are therefore intensive stakeholder participation and firm political will and "ownership" by the country.

Development and implementation of a teacher policy are recommended to be done in phases, as outlined below:

(i) Issue identification and agenda setting: agreeing upon problems requiring further government attention;

(ii) Policy formulation: analysis of the context, agreement on guiding principles and development of choices and options;

(iii) Adoption and decision: agreement on choices, formulation of the policy, approval or endorsement of the policy through the relevant political bodies;

(iv) Dissemination: Information of all stakeholders through dissemination campaigns;

(v) Preparation of implementation: Costing and budgeting, identification of funding sources, elaboration of sequenced time frames and work plans for implementation, definition of roles and responsibilities;

(vi) Implementation;

(vii) Monitoring and evaluation: summative and continuous monitoring, information about progress and effect of measures, adjustment of plan if necessary.

Broad and continued stakeholder participation is essential, particularly in the initial phases of the development process. Usually the ministry of education takes the lead in the development process and plans for the phases of the process, time frame, costs and the relevant bodies to be involved. Stakeholders and their roles are:

(i) Teachers and their representatives: to provide practical experience, represent their needs and concerns and participate in drafting and validating a teacher policy;

(ii) Teacher regulatory bodies: to provide profession-led inputs to the policy;

(iii) Ministries of education and planning, state governments, local governments: to facilitate and lead the development of the policy and ensure that it is adopted;

(iv) Scholars and researchers, CSOs: to provide expertise and evidence;

(v) Parents and their representatives, students and their representatives: to represent their needs and concerns and to link to the communities;

(vi) The private sector: to represent the needs and interests of the labour market, non-government education providers to provide experience;

(vii) International agencies: may support the process through funding, technical assistance and capacity-building.

Furthermore, adequate funding is mandatory for the preparation, implementation and monitoring and evaluation of a teacher policy.

Moreover, it is essential that the ministry or department of education disposes of sufficient adequately qualified personnel to operate implementation and monitoring. Beyond this, the following factors are found necessary for successful teacher policy development: (i) consistency between new and existing policies, (ii) comprehensive strategic planning, clear timeframe and roadmap, (iii) engaging teachers, (iv) evidence-informed policy development, (v) country ownership and (vi) awareness of specific political and cultural dynamics in each region and attention to local expectations and power relations.

7.4 Risks, challenges and limitations of a teacher policy

A comprehensive teacher policy, if well elaborated and implemented, is a crucial supporting instrument to respond to the teacher crisis. However, it does not come without risks and limitations.

Development and implementation of a teacher policy are complex and challenging, subject to contestation, at risk to be delayed or even abandoned in view of controversies, planning errors or constraints in resources. This may be particularly true for countries or education systems where governance and the rule of law are relatively weak. Although a teacher policy might be particularly needed in such situations, political will for its development is likely to be insufficient, and respective initiatives might face a lack of interest and cooperation, or even resistance.

Even if there is agreement regarding the development of a teacher policy, its implementation could be impeded by interfering budget priorities, delayed planning or other obstacles caused by open or hidden resistance against the policy. A teacher policy is a comprehensive plan of action containing a multitude of regulations, which even after formal agreement might be seen in a controversial way by different stakeholders. Therefore, there is considerable risk that the plan, even after formal agreement, will not or not fully be implemented but remain "on the shelves". If the teacher policy is acknowledged as a piece of legislation, chances for a thorough implementation and continuous monitoring are higher.

Lack of capacity in the ministry of education and its associated bodies and decentralized units is another risk to the implementation of a teacher policy. The main limitation of a teacher policy is not that it is not needed or not useful but that it contains many potentially controversial issues, e.g. teacher salaries and working time, teacher standards and how to handle teachers not achieving them, the importance ascribed to good teaching in rural and disadvantaged areas and the budget dedicated to it or the overall budget dedicated to education.

In the long run, there is no shortcut and no way of avoiding a body of rules and regulations regarding teachers and teaching in schools. Country examples show diverse attempts to enhance the quality of their school education through measures targeting teachers, but too often they are scattered and not consistent and thus not effective and sustainable

enough. A comprehensive and synchronized body of rules is not only more effective than isolated rules and regulations, but its rationale and purpose are also more transparent, acceptable and logical. However, it must be monitored so that the rules and regulations are effectively applied.

Progress towards greater use of comprehensive national teacher policies will no doubt emerge as policy and decision makers from among many education stakeholders recognize its importance as a means to enhance the quality of teachers and teaching as the single-most important influenceable factor determining the quality of children's learning in school. The Teacher Policy Development Guide may assist in these endeavors.

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