



PASEC2024

DATA COLLECTED IN 2025

EXECUTIVE SUMMARY THE SKILLS OF PRIMARY SCHOOL TEACHERS

Sub-Saharan Africa

CONTENTS

Background and objectives of PASEC2024	1
Key messages	2
SECTION 1. Mean scores and dispersions	4
SECTION 2. Description of the levels of the proficiency scales and typology of countries	7
SECTION 3. Disparities within education systems	12
SECTION 4. Resources committed and results achieved	17
SECTION 5. What these results imply for action	21
Assessment methodology	27

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BACKGROUND AND OBJECTIVES OF PASEC2024

For the first time, PASEC is devoting an entire international report to primary school teachers. Introduced in 2019, the direct measurement of their knowledge was until now integrated into reports on student achievement. This choice responds to a major challenge for several sub-Saharan African countries, which must recruit and train a large number of teachers while working to improve the quality, equity and efficiency of education systems.

The PASEC2024 provides comparative data that make it possible to assess several dimensions of the effectiveness, the equity and, indirectly, the efficiency of the education systems. Thus, the teacher component of the assessment has three objectives: to describe the characteristics and conditions of practice of primary school teachers, to measure their subject and didactic knowledge in reading comprehension and mathematics, and to relate this knowledge to their characteristics and to the resources mobilised by the States.

Sixteen countries participated in the assessment carried out among primary school teachers: Benin, Burundi, Cameroon, Congo, Côte d'Ivoire, Djibouti, Gabon, Guinea, Guinea-Bissau,

Madagascar, Mali, Nigeria, Sao Tome and Principe, Senegal, Chad and Togo. Eleven had participated in the PASEC2019; Djibouti, Guinea-Bissau, Mali, Nigeria and Sao Tome and Principe took part in PASEC2024 for the first time. A total of 23,254 teachers were surveyed in schools in the end of primary school sample between April and June 2025.

This document is the executive summary of the PASEC2024 International Report on primary school teachers. It presents the report's main findings in condensed form for ministers, their teams and technical and financial partners. It does not replace the report, which contains the full analyses and detailed results by country.

Readers will find eight key messages summarising all the findings; mean scores and their dispersion within each country; a description of what teachers know and can do at each level of the scales, for both subject and didactic knowledge; the disparities observed within systems according to certain characteristics; and what these results imply for public policy.



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KEY MESSAGES

1 Teachers have a better command of subject content in reading comprehension than in mathematics.

Across the 16 countries, **43% of teachers achieve level 3 of the reading comprehension scale, compared to 21% in mathematics.** At the other extreme, 3% are below level 1 in reading comprehension, compared to 14% in mathematics. Almost one in two teachers (46%) do not exceed level 1 in mathematics, which corresponds to factual knowledge and direct application procedures. And yet, the content assessed corresponds mainly to the content that teachers need to ensure their students have acquired at the end of primary school. The share of teachers at level 3 is higher in reading comprehension in 14 out of 16 countries; only Burundi and Madagascar have the opposite configuration.

2 Content mastery varies greatly from one education system to another and, within countries, from one teacher to another.

In reading comprehension, mean national scores range from 385.1 points in Madagascar to 545.4 points in Senegal, a gap of 160 points. In mathematics, they range from 396.3 points in Nigeria to 537.4 points in Senegal. The share of teachers at level 3 in mathematics varies from 4% in Nigeria to 45% in Benin, and the share below level 1 from 3% (Benin, Burundi, Senegal) to 39% (Nigeria). The national positions are linked from one discipline to another (correlation of 0.69), without being identical. Finally, the national means mask significant differences

between teachers in the same country, particularly in Nigeria and Mali in reading comprehension, and in Gabon in mathematics.

3 Teachers recognise didactic concepts better than they use them to analyse students' mistakes and plan teaching.

In the didactics of reading comprehension, they succeed in 62.9% of the items relating to didactic concepts, but only 41.4% of those that ask to identify the pedagogical objective of a situation and 25.2% of those that relate to the source of an error; these last two rates are at or below the level of a random answer. In mathematics, analysis of the student's approach is the most successful (43.8%, or 19.6 points above chance), while the definition of pedagogical objectives (28.3%) and the choice of activities (27.9%) are at the level of chance. **Faced with a student's error in a proportionality problem, only 35% of teachers retain the expected interpretation.** This observation is consistent with that of 2019: knowing how to solve a problem is not enough to reconstruct the reasoning of a student who makes a mistake.

4 The differences between rural and urban areas, and between public and private schools, are primarily due to the distribution of teachers.

In reading comprehension, urban teachers are ahead of rural teachers by about 30 points; this advantage is greatly reduced when training, seniority and status are comparable. The advantage of the private sector (about 14 points) is reversed after adjustment, to the benefit of the public sector (about 16 points). These results are consistent with the hypothesis that the differences between contexts primarily reflect the assignment of less trained, less experienced and more vulnerable teachers in rural areas. Female teachers in rural areas are the weakest group: 446 points in reading comprehension, about 50 points lower than urban male teachers.



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One in six teachers declare that they have received no pre-service training, and one in four indicate that they have not received any in-service training in the last two years.

One in six teachers (16%) say they have never had any pre-service training in teaching. In Madagascar, this is the case for six out of ten teachers (61%); in Togo and Burundi, for one in four (26%). Conversely, this share remains below 10% in six countries, including Senegal and Djibouti. The advantage of trained teachers is very clear in some countries. In Côte d'Ivoire, they obtain on average 34 points more than those with no training in reading comprehension and 47 more in mathematics, with comparable background, gender and age. However, this advantage only appears in four of the ten countries where the comparison is possible, which raises questions about the content of the training rather than its usefulness. During their career, 73% of teachers report having undergone in-service training in the last two years, from 47% in Burundi to 90% in Djibouti. However, only 41% consider the training opportunities offered to them to be good, and nearly one in two have a somewhat negative opinion of the pedagogical support they receive (47%).

6

Within the same country, teachers have very different profiles depending on their employment status, the type of school (public or private), their work environment (rural or urban) and their experience.

Fewer than one in two teachers is a civil servant (45.7%), with strong differences between countries: 6.1% in Madagascar, 89.0% in Burundi. The rest are divided

between private teachers (27.9%), contract teachers (11.4%) and community teachers (8.3%). These profiles are also unevenly distributed within education systems. Community teachers account for 14.6% of rural teachers, compared to 2.7% of urban teachers, and up to 57.5% of rural teachers in Chad. In that country, 30% of rural teachers have no pre-service training, compared to 8.5% in cities. The private sector does not recruit the same profiles everywhere, either. In Côte d'Ivoire, 39.5% of its teachers have no pre-service training, compared to 4.6% in the public sector; in Congo, the situation is the opposite. The average experience ranges from 8 years in Guinea-Bissau and Sao Tome and Principe to 16 years in Burundi. In some contexts, these differences weigh on skills. In Cameroon and Mali, community teachers score 33 to 56 points lower than civil servants with comparable training and background.

7

Teachers' working conditions are difficult: overcrowded classes, irregular salaries in several countries and the accumulation of activities for nearly one in two teachers.

Primary school teachers report an average of 47 students per class, with variations from 37 in Gabon to 65 in Chad. Almost one in five teachers (18%) do not receive their salary on a regular basis. The proportion remains below 5% in Senegal and Benin, but reaches 47% in Chad, 39% in Madagascar and 33% in Congo. Community teachers are the most affected by salary irregularities (39%), as well as teachers in rural areas. **Nearly one in two teachers (47%) has another income-generating activity, most often agricultural; this share exceeds 60% in six countries.** In addition, only 35% of the teachers surveyed consider their salary to be good or very good, from 11% in Madagascar to 66% in Sao Tome and Principe.



47
STUDENTS
PER CLASS
ON AVERAGE

8

The countries that invest the most in primary education are not necessarily those with the most competent teachers.

States do not spend the same amount on primary education. Compared to the country's wealth, public expenditure per student ranges from 2.5% of GDP per capita in Guinea-Bissau to 28.2% in Djibouti. **However, the countries that spend the most per student are not necessarily those with the most competent teachers.** Togo and Guinea devote the same share of their wealth to each student (6.3%); however, 85% of Togolese teachers on average across both subjects, reach at least level 2, compared to 61.5% in Guinea. Benin and Cameroon also achieve good results with a modest expenditure per student, while Mali and Congo spend more without reaching this level. Senegal, Benin and Togo are, regardless of the indicator used, among the countries that obtain the best results in terms of the resources committed. These findings do not invite us to spend less, but to examine how resources are used.



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SECTION 1

Mean scores and dispersions



The PASEC2024 average of teachers was 476.0 points in reading comprehension and 469.4 points in mathematics. In reading comprehension, national scores range from 385.1 points in Madagascar to 545.4 points in Senegal, a gap of 160.3 points. In mathematics, they range from 396.3 points in Nigeria to 537.4 points in Senegal, or 141.1 points. The following table presents the national scores and their deviation from the mean in each discipline.

Tables 3.3 and 3.4 (consolidated)

National mean teacher scores and deviation from the PASEC2024 mean

Country	Reading: score (standard error)	Reading: deviation from the mean	Mathematics: score (standard error)	Mathematics: deviation from the mean
Senegal	545.4 (5.7)	+69.4 ▲	537.4 (4.2)	+68.0 ▲
Côte d'Ivoire	541.6 (3.5)	+65.6 ▲	491.8 (3.9)	+22.4 ▲
Benin	532.6 (3.9)	+56.6 ▲	534.2 (4.9)	+64.8 ▲
Gabon	529.7 (4.8)	+53.7 ▲	490.8 (6.5)	+21.4 ▲
Djibouti	522.4 (2.8)	+46.4 ▲	494.0 (3.0)	+24.6 ▲
Togo	512.6 (3.2)	+36.6 ▲	524.6 (3.4)	+55.2 ▲
Cameroon	501.4 (4.6)	+25.4 ▲	482.0 (4.2)	+12.6 ▲
Sao Tome and Principe	482.7 (9.2)	+6.7 ●	440.0 (10.7)	-29.4 ▼
Congo	468.7 (4.7)	-7.3 ●	449.5 (4.6)	-19.9 ▼
Guinea-Bissau	453.7 (7.4)	-22.3 ▼	398.8 (7.6)	-70.6 ▼
Guinea	446.6 (5.6)	-29.4 ▼	448.6 (3.8)	-20.8 ▼
Burundi	436.1 (2.8)	-39.9 ▼	517.9 (3.1)	+48.5 ▲
Nigeria	430.6 (5.5)	-45.4 ▼	396.3 (4.5)	-73.1 ▼
Chad	415.3 (5.8)	-60.7 ▼	419.8 (6.6)	-49.6 ▼
Mali	411.5 (9.1)	-64.5 ▼	432.2 (4.9)	-37.2 ▼
Madagascar	385.1 (3.1)	-90.9 ▼	452.3 (3.8)	-17.1 ▼
PASEC2024 MEAN	476.0	-	469.4	-

How to read: ▲ score significantly higher than the PASEC2024 mean; ● not significantly different; ▼ significantly lower. Deviations from the mean are not compared from one discipline to another in points, as the two scales are constructed separately.



All figures and tables are taken from the International Report "PASEC2024 – The Skills of Primary School Teachers in Sub-Saharan Africa", available online: <https://pasec.confemen.org/en/results/pasec-24-report>



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Reading comprehension

Seven countries are significantly above the PASEC2024 mean: Senegal, Côte d'Ivoire, Benin, Gabon, Djibouti, Togo and Cameroon. Senegal and Côte d'Ivoire occupy the top with statistically inseparable performances, followed by Benin. Gabon and Djibouti form a second high-level group; Togo and Cameroon remain above average, but are moving away from the top. Sao Tome and Principe and Congo do not differ statistically from the mean. The other seven countries are significantly below: Guinea-Bissau, Guinea and Burundi have similar levels, Nigeria, Chad and Mali are a group of poor performers, and Madagascar clearly brings up the rear.

Mathematics

All countries score statistically differently from the PASEC2024 mean. Senegal and Benin occupy the top, with statistically equivalent performance, followed by Togo and Burundi, which do not differ significantly. Djibouti, Côte d'Ivoire and Gabon perform similarly; Cameroon is slightly behind, while remaining above average. In the second half of the distribution, Madagascar, Congo and Guinea are statistically close; Sao Tome and Principe, Mali and Chad occupy a lower area. Guinea-Bissau and Nigeria close the distribution, with no significant difference between them.

Performances linked in the two disciplines, but several atypical national profiles

Teachers' performance in the two disciplines generally evolves in the same direction: the correlation between national scores is around 0.69. However, the relationship remains far from perfect. Section 2 of this document presents the three groups of countries identified in chapter 3 of the International Report.

Three countries present a contrasting profile. Burundi is nearly 50 points above the mean in mathematics, but about 40 points below in reading comprehension. Sao Tome and Principe, which is close to the mean in reading comprehension, is significantly lower in mathematics; Congo has a similar, more moderate profile. In these countries, the diagnosis of skills and need for reinforcement must cover each discipline.



Dispersion of skills within countries

The mean is not enough to characterise education systems. The gap between the lowest-performing (10th percentile) and highest-performing (90th percentile) teachers varies greatly from country to country: in reading comprehension, from 154.5 points in Sao Tome and Principe to 249.8 points in Nigeria; in mathematics, from 171.1 points in Sao Tome and Principe to 267.6 points in Gabon (figures 3.7 and 3.9 of the International Report).

Sao Tome and Principe has the tightest distribution in both disciplines. In reading comprehension, Nigeria and Mali have low scores and high heterogeneity, while Senegal combines a high level and a relatively low dispersion. In mathematics, Gabon combines an above-average level with the highest dispersion; Senegal, Benin and Togo, the three best-performing countries, have dispersion above the median of the 16 countries.

When the mean level is low but the dispersion is limited, the need for reinforcement probably concerns a large part of the teaching staff. When the dispersion is high, the needs differ according to groups of teachers.



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SECTION 2

Description of the levels of the proficiency scales and typology of countries



What teachers know and know how to do

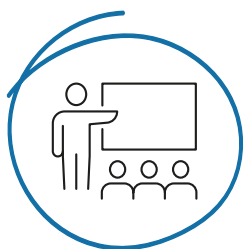
The content assessed is mainly anchored in the skills expected of students at the end of primary school. Chapter 3 of the International Report identifies an expectation: the teachers, responsible for helping students acquire these skills, should mostly be at the highest levels of the scales. In reading comprehension, a majority of teachers reach level 3 in seven countries; in mathematics, in none of the countries.

Chapter 3 of the International Report states that this difference between disciplines does not prove that the mathematics test is more difficult, each scale being based on its own thresholds and descriptors. However, the nature of level 3 in mathematics sheds light on these results: it requires the analysis of complex situations before initiating a procedure, the mobilisation of several pieces of knowledge and the control of certain errors and misconceptions in non-routine situations.

Table 3.1

Teachers' reading comprehension proficiency scale

Levels	Scores (points)	Distribution of teachers in the levels of the scale	Description of teachers' skills
Level 3	Greater than 497	43%	At this level, teachers are able to take a step back and carry out a comprehensive treatment of all types of texts. They make complex inferences and are able to combine and interpret several implicit ideas based on their experience and knowledge. Teachers are able to detach themselves from the literal meaning of a text to identify the author's intention, to perceive the humorous dimension of a text (even when it is subtle). They can take into account the content of a text to formulate a new idea relevant to the information read.
Level 2	Between 394 and 497	36%	Teachers demonstrate their ability to use paraphrased information. They are able to make simple inferences in any type of text. They are also able to perceive the anaphoric network of a literary text. Teachers are able to combine information in different parts of a text.
Level 1	Between 290 and 394	18%	Teachers are able to locate explicit information in medium or long texts using cues present in the text and in the questions. They use this skill in narrative and informative texts. Teachers are able to spot a few elementary paraphrases in a text.
Level <1	Less than 290	3%	Teachers who are at this level do not sufficiently demonstrate the skills measured by this reading comprehension test. They are struggling with level 1 knowledge and skills.



43%
OF TEACHERS

reach the highest level in
reading comprehension



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Table 3.2

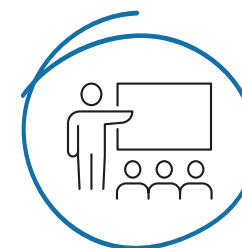
Teachers' mathematics proficiency scale

Levels	Scores (points)	Percentage of teachers	Description of teachers' skills
Level 3	Greater than 547	21%	Teachers at this level demonstrate the ability to solve complex problems involving several stages of resolution and requiring implementation of reasoning based on an in-depth analysis of the situation, and which may involve manipulating unknowns (for example, in problems of unequal division). To solve most tasks at this level, cognitive vigilance is required to avoid common mistakes and prevent misconceptions (e.g. thinking that the area and perimeter vary in the same direction). The expertise characteristic of this level also reflects a deep understanding of the concepts (for example, understanding the relativity of the whole compared to the concept of fraction).
Level 2	Between 456 and 547	33%	Teachers at this level can solve many problems of direct proportionality, as well as complex problems, involving several stages of resolution and requiring the implementation of a sequentially organised approach. Several tasks at this level involve unit conversions, whether or not they are integrated into problem situations. Some tasks require factual knowledge of various mathematical objects (for example, formulas for calculating the area of a solid, a property of triangles, or the name of a particular triangle, etc.).
Level 1	Between 365 and 456	32%	Teachers at this level demonstrate factual knowledge and mastery of basic procedures that they implement in direct application tasks. Their skills are essentially in the area of numbers (e.g. knowledge of decimal writing, comparison of fractions, the idea of percentages, etc.) and operations (ability to solve operations involving whole numbers, decimals and fractions). They also show some knowledge in the area of solids and shapes (for example, identifying figures or solids, locating a diagonal or an axis of symmetry, etc.) as well as in quantities and measurements (e.g. calculating the perimeter of a triangle). Few problem-solving tasks are located at this level.
Level <1	Less than 365	14%	Teachers who are at this level do not sufficiently demonstrate the knowledge and skills measured by this test. These teachers are struggling with level 1 knowledge and skills.

Subject proficiency levels that differ according to country and discipline

The proportion of teachers at level 3 varies greatly from one country to another. In reading comprehension, it exceeds seven out of ten in Senegal (73%) and Côte d'Ivoire (72%), but only reaches 8% in Madagascar and 16% in Chad. In mathematics, it ranges from 4% in Nigeria to 45% in Benin. In 14 out of 16 countries, it is higher in reading comprehension than in mathematics; the gap reaches 45 points in Côte d'Ivoire, 41 in Djibouti and 36 in Gabon. Burundi (37% in mathematics compared to 19% in reading comprehension) and Madagascar (14% compared to 8%) have the opposite configuration.

Internationally, 46% of men achieve level 3 in reading comprehension, compared to 41% of women. In mathematics, the gap increases to 15 points: 29% of men reach level 3, compared to 14% of women, and 54% of female teachers are at level 1 or below, compared to 36% of male teachers. These differences are descriptive.



21%
OF TEACHERS

reach the highest level
in mathematics



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Cross-reading of the two disciplines: three groups of countries

Chapter 3 of the International Report distinguishes three groups of countries according to their position relative to the two PASEC2024 means (figure 3.10). This table opposite shows the distribution of their teachers across the scales.

Above both means. In Senegal, Benin and Togo, level 3 has the highest proportion of teachers in both disciplines. For these countries, chapter 3 of the International Report situates the challenge in the consolidation and deepening of knowledge. In Côte d'Ivoire, Djibouti, Gabon and Cameroon, a majority of teachers reach level 3 in reading comprehension, but level 2 has the highest proportion in mathematics.

Contrasting profile. Burundi performs better in mathematics than in reading comprehension, where 19% of its teachers reach level 3. Sao Tome and Principe and, to a lesser extent, Congo have the opposite configuration: in Sao Tome and Principe, 88% of teachers achieve at least level 2 in reading comprehension, compared to 37% in mathematics. In both countries, at least half of teachers are at level 1 or below level 1 in mathematics.

Below both means. In Guinea, Guinea-Bissau, Nigeria, Mali, Chad and Madagascar, at least half of teachers are at level 1 or below level 1 in mathematics: 74% in Guinea-Bissau, 77% in Nigeria and 65% in Chad. In reading comprehension, Madagascar concentrates most of its teachers at levels 1 and 2, and 58% of them are at level 1 or below. In these countries, based on chapter 3 of the International Report, the challenge is to strengthen the fundamental subject outcomes of a significant proportion of the teaching staff.

Table

Distribution of teachers across the scales, by country group (%)

Group	Country	Reading comprehension: % of teachers at least at level 2	Reading comprehension: % of teachers at level 3	Mathematics: % of teachers at least at level 2	Mathematics: % of teachers at level 3
Above both means	Senegal	96	73	83	44
	Benin	96	69	80	45
	Togo	90	60	78	41
	Côte d'Ivoire	94	72	66	28
	Djibouti	94	64	71	24
	Gabon	93	67	62	30
	Cameroon	89	54	61	24
Contrasting profile	Burundi	72	19	76	37
	Sao Tome and Principe	88	41	37	6
	Congo	81	38	47	12
Below both means	Guinea	75	30	49	12
	Guinea-Bissau	79	31	26	5
	Nigeria	63	26	23	4
	Mali	56	18	38	9
	Chad	61	16	35	6
	Madagascar	42	8	46	14



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Didactic skills of teachers

Didactic knowledge completes this diagnosis. It is not measured on a scale, but by success rates in relation to the level that a random response would reach (tables 4.1 and 4.2).

Teachers are more successful in items that require recognition of a didactics concept or analysis of the student's approach. They encounter more difficulties in more complex tasks: identifying the source of an error, establishing a pedagogical objective or choosing an activity. In reading comprehension, 37% of teachers identify the difficulty related to the interpretation skill in a student's incorrect answer. In mathematics, 35% retained the expected interpretation of a

student's error in a proportionality problem, and two other error interpretation items obtained 17.2% and 19.1% success.

In mathematics, establishing pedagogical objectives and the choice of activities are at the level of chance. In reading comprehension, identifying pedagogical objectives is 8.6 points below this benchmark (41.4% compared to 50%). According to chapter 4 of the International Report, if this gap were to prove significant, it could suggest that teachers are more attracted to an incorrect answer than chance, and reveal a shared misconception.

Chapter 4 of the International Report puts forward two readings of these results: a difficulty in using diagnostic reasoning, or a gap between operative knowledge,

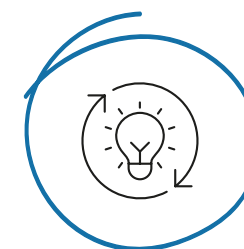
constructed by experience, and its theoretical formulation expected by the items. It proposes to analyse the distractors chosen by teachers to distinguish them. Some sub-domains have only two items, which calls for caution.

In the didactics of reading comprehension, chapter 4 of the International Report distinguishes three groups of countries. Djibouti and Senegal obtain relatively high results on a large portion of the items. Benin, Côte d'Ivoire, Cameroon, Togo and Guinea are close to the international mean. Sao Tome and Principe, Guinea-Bissau and Madagascar more often have rates below this mean, particularly for identifying pedagogical objectives.

 **Tables 4.1 and 4.2 (consolidated)**

Success on didactics items, by sub-domain

Discipline	Sub-domain	Items	Success rate	Gap from chance (points)
Reading comprehension	Understanding didactic concepts	2	62.9%	+12.9
	Identifying pedagogical objectives	12	41.4%	-8.6
	Identifying the source of errors	2	25.2%	+0.2
Mathematics	Analysing the student's approach	3	43.8%	+19.6
	Remediation and error status	3	39.2%	+11.4
	Identifying an appropriate approach	4	39.5%	+6.1
	Interpreting an error	13	33.2%	+5.6
	Establishing pedagogical objectives	7	28.3%	-0.3
	Choosing activities or tasks	2	27.9%	-1.3



33.2%
OF TEACHERS

can interpret a
student's error

SECTION 3

Disparities within education systems



Teacher gender

Women represent 45% of the teachers surveyed, compared to 42% in 2019, a share similar to that observed in 2022 in sub-Saharan Africa (47%). Globally, the share of female primary school teachers increased from 60% in 2000 to 68% in 2022 (UNESCO and Teacher Task Force, 2024). It ranges from 20% in Guinea-Bissau to 69% in Sao Tome and Principe, and women make up at least half of the teachers surveyed in seven countries.

On average, male teachers score about 10 points higher than female teachers in reading comprehension and 40 points in mathematics. In reading comprehension, the gap is not significant in nine countries; it is in favour of men in Mali, Burundi and Guinea-Bissau (from 26 to 42 points), and in favour of women in Nigeria (+41 points), Madagascar (+24) and Cameroon (+21). In mathematics, men score significantly higher in 12 countries, with gaps ranging from 15 points in Guinea to 76 points in Gabon; only Nigeria has a significant advantage for female teachers (+18 points).

One in six teachers report having received no pre-service training in teaching.

In almost all countries, the gap between male and female teachers estimated after taking into account their characteristics remains very close to the gross gap: the order of magnitude and the direction of the difference remain largely unchanged. In mathematics, male teachers' advantage remains significant in the vast majority of countries, as does female teachers' advantage in Nigeria. As already pointed out in the PASEC2019 report, chapter 5 of the International Report considers that the gap in mathematics could be linked to the under-representation of girls in science streams in secondary education in sub-Saharan Africa, from which future primary school teachers are increasingly recruited. On top of this, there is the predominance of candidates from literary backgrounds in pre-service teacher training programmes.

Seniority of teachers

Teachers have an average of 11 years of experience, from 8 years in Guinea-Bissau and Sao Tome and Principe to 16 years in Burundi. In reading comprehension, seniority is weakly and irregularly associated with the score: teachers with more than twenty years of experience are ahead of those with five years or less by around ten points. In mathematics, the configuration is much clearer: the gap with the least experienced teachers reaches around 18 points for those with 6 to 10 years' experience, 34 points for those with 11 to 20 years and 56 points for those with over 20 years. It reaches or exceeds around 60 points in Benin, Côte d'Ivoire, Senegal, Madagascar and Burundi, but is not significant in Guinea-Bissau, Mali, Nigeria and Sao Tome and Principe. Greater seniority is thus associated with a better mastery

of content, particularly in mathematics, which is compatible with the hypothesis of expertise developed over professional experience. Several works cited in chapter 5 of the International Report invite us to promote this expertise in the support of novice teachers and in pre-service training.

Pre-service training

One in six teachers (16%) say they have received no pre-service training in teaching. This proportion reaches 61% in Madagascar and 26% in Togo and Burundi, but remains below 10% in six countries: Congo, Djibouti, Gabon, Guinea-Bissau, Sao Tome and Principe and Senegal. In these six countries, the group of untrained teachers contains fewer than 100 teachers, which does not allow for a comparison between trained and untrained teachers.

In the other 10 countries, with comparable environment, gender and age, trained teachers obtained significantly higher scores in four countries: Côte d'Ivoire (+33.7 points in reading comprehension, +46.9 in mathematics), Madagascar (+30.8 and +32.2), Chad (+26.4 and +29.1) and Mali (+32.3 in mathematics). In Guinea, trained teachers, on the other hand, score 22.7 points lower in reading comprehension. Teachers who followed courses of three years or more are even below the level of the untrained teachers in Togo, Guinea and Benin in reading comprehension.



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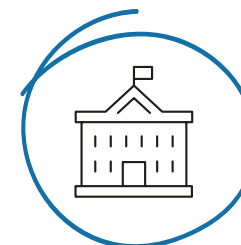
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The extent of the differences is not linked to the scarcity or the generalisation of pre-service training. Madagascar, where fewer than four out of ten teachers are trained, and Côte d'Ivoire, where nearly nine out of ten are trained, have gaps of comparable magnitude, while Burundi and Togo have none. What distinguishes these countries may be less the rate of training than the nature of the group of untrained teachers: in Chad, Madagascar and Mali, some of the untrained teachers are recruited by alternative methods, such as community teachers, whose objective is to meet teacher needs in contexts where there is a shortage of trained teachers. Pre-service training and employment status thus appear to be closely intertwined. The declared duration of training is an imperfect indicator of teachers' subject skills; its scope could be more related to the educational level at the start of training, the subject content of the programmes and the evolution of national recruitment systems. These findings invite us to examine, in each system, the link between the conditions of access to pre-service training, the structure of the programmes and the duration of the training.

Status of teachers

Civil servants represent an average of 45.7% of the teachers surveyed, from 6.1% in Madagascar to 89.0% in Burundi. Community teachers, recruited and paid by the community, parents or a non-governmental organisation, represent 8.3% of teachers in all the countries surveyed and are concentrated in Chad (38.5%), Madagascar (33.0%), Congo (18.3%) and Mali (17.2%).



45.7%
OF TEACHERS
are civil servants

In the four countries where the comparison is possible, community teachers obtain lower scores than civil servants. In Madagascar, and in Chad in mathematics, the gap ceases to be significant with comparable training and environment. In Cameroon (-42.0 points in reading comprehension, -55.8 in mathematics) and Mali (-34.3 and -33.3), it persists. The results of contract teachers were more mixed: no significant gap in Madagascar, Cameroon and Guinea-Bissau; lower scores of about 33 points in mathematics in Benin and Senegal; clear gaps in Mali (-52.9 points in mathematics, -41.1 in reading comprehension) and especially in Chad (-77.0 and -68.6).

These results can be linked to the weight of community teachers among the teachers included in the status analysis. Where they represent about half of them, as in Chad and Madagascar, the gap with civil servants seems to reflect mainly differences in training and, perhaps, the place of practice. Where they are more in the minority, such as in Cameroon and Mali, the gap resists controls and could reflect less demanding recruitment conditions; however, this analysis is based on only four countries. For contract teachers in Benin, Senegal and Mali, the gap in mathematics remains practically unchanged with comparable training and background, and may relate to unobserved characteristics, such as the educational level at entry and the subject content of the training received. It emerges that employment status is not, in itself, a homogeneous indicator of skills. Where gaps persist, they probably relate to the recruitment and training conditions associated with each status, rather than to the status itself. The decisive issue lies less in the nature



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of the employment relationship than in the requirements for access to the profession and in the support of teachers recruited outside the regular channels.

Skills and practice environment (urban/rural)

Community teachers account for 14.6% of rural teachers, compared to 2.7% of urban teachers. Chad, where they make up 38.5% of the teaching staff, has the largest gap (57.5% in rural areas compared to 14.6% in cities). This concentration in rural areas is also observed in Congo (46.9% compared to 9.7%), Madagascar (39.5% compared to 11.3%) and Mali (32.7% compared to 2.1%). In Chad, 30% of rural teachers have received no pre-service training, compared to 8.5% in cities.

In reading comprehension, urban teachers score on average nearly 30 points higher than rural teachers. The gap is significant in eight countries: from 15 points in Djibouti to 53 points in Madagascar, including Togo (22), Burundi (28), Congo (31), Nigeria (35), Chad (37) and Guinea-Bissau (39). No country has a significant rural advantage. In urban areas, 49% of teachers reach level 3, compared to 37% in rural areas; 16% are at level 1 or below, compared to 28%. In Madagascar, 19% of urban teachers reach level 3, compared to 5% of rural teachers. In mathematics, the urban advantage is significant in only four countries: Congo (48 points), Madagascar (28), Nigeria (26) and Djibouti (16). On average, the gap is around 3 points in favour of rural areas and is not significant.

With comparable training, experience and status, the gap in reading comprehension narrows in 12 out of 16 countries. A significant urban advantage remains in Burundi and Chad, while a rural advantage of about 20 points emerges in Senegal. In mathematics, the adjustment reveals, on average, a rural advantage; only Congo retains a significant urban advantage. The central observation is less that of an intrinsic effect of the rural environment on skills than that of a close relationship between the environment of practice and the characteristics of the teaching staff assigned to it: rural schools traditionally receive the least experienced teachers, the least trained and the most vulnerable. More difficult conditions of practice, restricted access to certain resources or training, and difficulties in retaining experienced teachers may also contribute to these results, although their own effect cannot be established from the data from the PASEC2024 assessment. In mathematics, the mechanisms at the origin of the rural advantage observed after adjustment remain to be investigated. These results encourage a systemic examination of policies for the recruitment, assignment, pre- and in-service training and retention of teachers in rural areas as levers to improve the equity of education systems.

Skills and status of the institution (public/private)

Private school teachers represent 27.9% of the teachers surveyed: 63.1% in Congo, 52.0% in Gabon, 43.5% in Cameroon and 43.1% in Guinea, but 1.8% in Sao Tome and Principe. Pre-service training is not distributed in the same way everywhere: in Côte d'Ivoire, 39.5% of teachers in private schools have no training, compared with 4.6% in the public sector; in Congo, the situation is the opposite (2.4% in the private sector, 20% in the public sector).

In the 15 countries where the comparison can be made, private school teachers obtain, on average, around 14 points more than those in the public sector in reading comprehension. The advantage of the private sector is significant in five countries, from 28 points in Guinea to 63 points in Madagascar; Benin is the only country where the public sector is ahead (17 points). In mathematics, the public sector is ahead of the private sector by just over 9 points. Its advantage is significant in five countries, from 20 points in Mali to 47 points in Benin; that of the private sector is ahead in four countries, from 28 points in Madagascar to 54 points in Burundi.

Once the training, experience and status of teachers are taken into account, the advantage of the private sector in reading comprehension is reversed: the gap reaches around 16 points in favour of the public sector. In mathematics, the public sector advantage increases and reaches about 26 points. A significant advantage of the private sector remains in Burundi, Congo and Nigeria in both disciplines, and in Guinea in reading comprehension. In Madagascar, where the public sector has a high proportion of FRAM community teachers, the gross advantage of the private sector is no longer significant. The differences between teachers in the public and private sectors cannot be interpreted independently from the composition of the teaching staff in each sector. Several mechanisms, which cannot be isolated from the analyses, can contribute to the discrepancies: the methods of recruitment and assignment, the nature and duration of pre-service training, the status and stability of employment, access to in-service training or the characteristics of the institutions and the people they receive. Chapter 5 of the International Report stresses the importance of considering the status of the school and the characteristics of the teachers together, rather than directly attributing the discrepancies to the public or private nature of the school.



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Cross-analysis of gender and practice environment

In reading comprehension, the gap between men and women is 9 points in urban areas and 24 points in rural areas. Men in rural areas score 25 points less than men in urban areas, and women in rural areas 40 points less than women in urban areas: the rural disadvantage is one and a half times higher for female teachers. At 446 points, women in rural areas constitute the weakest group of the four, 50 points behind men in urban areas. In mathematics, the gap between men and women is the same in both environments (41 and 40 points).

Working and teaching conditions

Different variables are used to provide information on working and teaching conditions. Teachers report an average of 47 students per class, from 37 in Gabon to 65 in Chad. In terms of available teaching resources, the teacher's textbook equips 88% of the classes; teaching guides for mathematics (75%), French (72%) and student textbooks (73%) equip around three out of four classes. In Guinea-Bissau, only 41% of teachers have textbooks for students. Dictionaries (43%) and electricity (39%) remain the least available resources; electricity, which is 85% present in Djibouti, is only 3% present in Chad. Thus, teachers do not have all the basic resources to rely on to teach, and efforts to promote digital technology in education will not be able to yield results in the field unless the electrification of schools is more generalised.

Nearly one in five teachers (18%) say they do not receive their salary regularly. The proportion remains below 5% in Senegal and Benin, but reaches 47% in Chad, 39% in Madagascar and 33% in Congo. Rural teachers are more exposed (23% compared to 13% in cities), up to 66% in rural areas in Chad, as are community teachers (39%). Chapter 2 of the International Report talks about a double disadvantage, rural and community, which often affects the same teachers.

Almost one in two teachers (47%) has had an activity outside of teaching in the last three months, most often agriculture (28%). This proportion exceeds six out of ten in Guinea-Bissau (68%), Nigeria (67%), Congo (66%), Madagascar (63%), Chad (63%) and Cameroon (61%), but remains limited in Côte d'Ivoire (22%) and Senegal (26%). Where salaries are paid irregularly, these activities can help supplement incomes, although this link is not true in all countries.



Teachers reported an average of 2.5 days of absence in the last two months before the survey, from 0.6 days in Benin to 5.1 days in Guinea-Bissau, where about one in seven teachers reported more than 10 days of absence. These self-reported data probably underestimate the phenomenon. Reported absences are generally considered moderate: nearly half of teachers report none and the vast majority stay at five days or less over two months. However, absences are concentrated in a few countries, with Guinea-Bissau standing out for the frequency of prolonged absences.

Relations with colleagues are considered good or very good by 90% of teachers. On the other hand, only 35% consider their salary good or very good (11% in Madagascar, 66% in Sao Tome and Principe), and 42% consider their chances of promotion somewhat low, up to 70% in Madagascar. Within the same country, the gap between the 10% of the most critical teachers and the 10% most satisfied reaches an average of 20.7 points, almost double the maximum gap between national means. The perception of working conditions is, therefore, essentially at the level of the school and not the education system.



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SECTION 4

Resources committed and results achieved



The efficiency analysis of the PASEC2024 compares the position of 16 education systems with regard to financial factors, institutional constraints and teaching skills. This exploratory approach complements traditional assessments by placing subject skills in their financial and administrative context. It does not seek to establish causal links, but to compare the relative position of systems with respect to documented resources and constraints, to examine subject asymmetries, and to identify systems that contribute to efficiency frontier.

Overview of education systems

Compared with the subject skills measured by the PASEC2024, the UNESCO Institute for Statistics financial and administrative indicators reveal a major structural heterogeneity between countries, both in terms of financial effort and budgetary choices or supervision constraints.

The share of public expenditure on education in GDP, which measures the overall effort, has a median of 3.29%. Senegal devotes the highest share (6.16%), ahead of Sao Tome and Principe (5.03%) and Burundi (4.50%); Nigeria, Guinea and Guinea-Bissau are around or below 2%. Initial funding per primary school student, or unit effort, ranges from 2.5% of GDP per capita in Guinea-Bissau to 28.2% in Djibouti, with a median of around 7.2%.

Teachers' remuneration represents a median of 74.8% of primary school expenditure. It exceeds 80% in Burundi, Guinea and Togo, and drops to 61.4% in Benin and 59.1%

in Chad. The median share of teachers with the minimum qualifications required is 73.7%, from 15.3% in Madagascar to 100% in Côte d'Ivoire. The number of students per qualified teacher varies from 25.4 in Djibouti to 175.2 in Madagascar (median 62.1). Attrition rates, available for only nine countries, reach 27.5% in Benin and 21.6% in Guinea.

These indicators refer to different years depending on the country, from 2010 to 2025, and several values are missing.

Tables 6.2 and 6.3 (consolidated)

Resources, skills and relative position of systems

Country	Effort per student (% GDP per capita)	Salary share (%)	Minimum qualifications (%)	Combined performance (%)	Average DEA score (number of models)
Senegal	14.4	71.6	77.1	90.0	100.0 (4)
Benin	7.2	61.4	75.1	88.0	98.9 (4)
Gabon	5.0	N/A	92.0	78.0	96.7 (2)
Togo	6.3	80.1	81.0	85.0	96.3 (4)
Djibouti	28.2	79.3	66.0	82.5	93.8 (4)
Côte d'Ivoire	10.3	78.3	100.0	80.0	92.0 (4)
Cameroon	5.1	72.6	72.3	75.0	86.4 (4)
Guinea-Bissau	2.5	32.3	38.9	52.0	85.9 (3)
Burundi	14.0	83.9	95.8	74.0	84.3 (4)
Congo	11.2	N/A	80.3	64.0	71.7 (3)
Sao Tome and Principe	14.1	N/A	27.4	64.0	71.1 (2)
Guinea	6.3	83.0	76.7	61.5	69.3 (4)
Chad	5.0	59.1	29.4	48.0	56.1 (4)
Mali	11.0	77.1	37.4	46.0	51.3 (3)
Madagascar	5.9	69.3	15.3	44.0	50.0 (4)
Nigeria	N/A	N/A	62.2	43.5	48.3 (2)

Reference years vary according to indicators and countries. The average DEA score is an indicative average of the available specifications, not an overall score; it can only be compared with caution between countries whose number of models differs.

Analysis of teacher management policies

The following table brings together the main indicators of combined performance, defined as the average share of teachers achieving at least level 2 in both subjects, and the relative position resulting from the efficiency analysis.



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None of the indicators examined shows a consistent relationship with combined performance. Above-median scores are observed at different levels of financial effort, salary share, minimum qualification and management, while systems with similar values for the same indicator may record significantly different skill levels.

The unit financial effort alone does not make it possible to rank the systems according to their results. Senegal, Djibouti, Côte d'Ivoire and Burundi associated an effort equal to or greater than the median with a high combined performance. Benin, Togo, Gabon and Cameroon also obtained results above the median with a more moderate unit effort. Conversely, Mali and Congo have a relatively high effort without reaching the performance median. The relative volume of funding must, therefore, be interpreted in conjunction with its composition and with the institutional characteristics of the staff.

The comparison based on the salary share leads to a similar conclusion. High performance can be observed both in systems where remuneration represents a share above the median of primary school expenditure, such as Togo, Djibouti and Côte d'Ivoire, and in systems where this share is more moderate, such as Benin, Senegal and Cameroon. Guinea and Mali combine a relatively high salary share with performance below the median. The salary structure cannot, therefore, be interpreted independently from the total level of resources, the number of staff financed and the other components of educational expenditure.

Qualification and management indicators show a more consistent association across multiple systems, but also important exceptions. Côte d'Ivoire, Burundi, Senegal and Benin combine relatively favourable institutional characteristics with above-median performance. Madagascar and Chad, on the other hand, have low proportions of teachers with minimum qualifications, high teacher ratios and low performance. Djibouti performs well despite having

Unit financial effort alone does not make it possible to rank systems according to their results.

a lower than median proportion of minimum qualifications, while Togo achieves a combined performance of 85.0%, with 84.4 students per qualified teacher. Conversely, Nigeria has a relatively favourable ratio, but a weak combined performance.

Ultimately, these analyses do not reveal a simple or proportional relationship between the level of resources, institutional characteristics and observed skills. Exogenous environmental constraints, such as violence, instability and territorial inequalities, also disrupt this relationship by affecting the pedagogical performance of schools.

The technical efficiency of teacher policies

The Data Envelopment Analysis (DEA) measures the distance of systems to the best-observed combinations between a positioning factor and the combined performance of teachers. The analysis retains four specifications: two are budgetary (unit financing, salary share) and two institutional (ratio of students per qualified teacher, non-qualification). The budget scores describe the relative position of the systems with regard to the relationship between resources and skills; institutional scores are interpreted more modestly as positions conditional on constraints. A frontier position only indicates that with respect to the factor, the output, and the countries included in the specification, no observed combination dominates the system. The indicative mean in

consolidated tables 6.2 and 6.3 is not an overall DEA score: it should be read together with individual scores and the number of models available.

Senegal is on the empirical borderline in all four specifications. Benin and Togo also have high scores in all four specifications, with a relative position that varies little depending on the factor; this result describes a regular proximity to the frontiers without allowing us to deduce a general superiority of their teaching policies. Djibouti establishes the frontier subject to the constraint of the ratio of students to qualified teachers (100.0%), and Côte d'Ivoire in terms of compliance with minimum qualifications (100.0%), while lagging slightly behind on other factors. Cameroon and Burundi have relatively stable intermediate profiles. At the other extreme, Madagascar, Chad and Mali are located far from the frontiers in almost all models; Madagascar's scores range from 48.9% to 53.1%. This consistency reflects an overall less favourable positioning, both in terms of the conversion of investments and operating under constraints.

Typology of relative positions

The cross-referencing of individual scores, coverage of specifications and gaps between disciplines reveals four empirical configurations. This typology is neither a general ranking of education systems, nor an exhaustive assessment of their staff management policies; its profiles are neither exclusive nor definitive.

Senegal, Benin, Togo and Djibouti occupy a high and relatively stable position: they remain in the immediate vicinity of the borderlines in almost all models, and the combined performance does not mask any major subject gap. For these systems, the challenge is to document the institutional arrangements associated with this position, without assuming their transferability.



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These quantitative analyses would benefit from being complemented by national studies...

Madagascar, Mali, Chad, and Nigeria occupy a position relatively far from the borders, with low scores in almost all available specifications. This regularity indicates that their lagging position does not depend on a single model, but reflects a more structural difficulty in approaching the best combinations observed. For these systems, financial constraints, qualification, management and distribution of staff should be considered together. Nigeria's score, however, is based on only two models, with no financial dimension.

Several extensions would make it possible to go further: the improvement of temporal comparability, the exploitation of longitudinal and subnational data, and taking into account the uncertainty associated with PASEC estimates and borders, which current deterministic models do not integrate. These quantitative analyses would benefit from being complemented by national studies on pre-service and in-service training, recruitment and assignment, service conditions and staff management practices.

Guinea-Bissau, Cameroon and Gabon are in a favourable position, but sensitive to data specification or coverage. Guinea-Bissau sits on the frontier of the two budgetary models, a position linked to its location at the lower end of the unit effort and salary share distributions, but scores 57.8% in the unqualified specification. Cameroon's position is characterised by a greater dispersion of its mathematics scores depending on the factor used, and Gabon's average is based on only two models. These positions call for a reading by factor and more complete data before any general conclusion.

Sao Tome and Principe, Nigeria, Congo, Guinea-Bissau and Burundi have clear subject asymmetry. Regionally, relative scores are overall higher in reading than in mathematics, and Sao Tome and Principe, Nigeria and Congo have the largest gaps to the detriment of mathematics: Sao Tome and Principe scores an average of 93.8% in reading compared to 44.6% in mathematics. Burundi and Madagascar, on the other hand, have a more favourable relative position in mathematics. These disparities confirm that a synthetic measure cannot replace a diagnosis by discipline.



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SECTION 5

What these results imply for action



The results of the PASEC2024 shed light on both teachers' achievements, in terms of subject knowledge and didactic skills, and the conditions in which they exercise their profession. These dimensions are inseparable. The development of professional skills depends on training opportunities, material and institutional conditions of practice, support, relations within institutions and economic, social and security contexts. The results, therefore, do not point to a single response; they call for an examination of the conditions that promote the sustainable professional development of teachers.

Policy directions

According to international research, teacher policies only have lasting effects if they are designed and implemented in a coherent and systemic way. A one-time salary increase, isolation pay, an *ad hoc* mentoring programme or relaxed recruitment criteria may provide immediate relief, but their effects erode quickly without deeper changes. The four dimensions of teacher policy (attraction, training, recruitment and retention) are interdependent and mutually reinforcing.

In the 16 countries of the PASEC2024, for example, pre-service training, employment status and teaching conditions appear to be closely intertwined: where there are many community teachers, their skills gap with civil servants mainly reflects differences in training. The differences between urban and rural areas are mainly due to the assignment of the least trained, the least experienced and the most precarious teachers in rural schools, where irregular salaries are also more frequent. The level of resources committed is not enough, in itself, to rank the systems according to the skills of their teachers. Action on training that neglects the criteria of recruitment, assignment procedures and

conditions of exercise would therefore be limited in scope. These observations call for articulating, within a coherent framework, simultaneous actions on training, recruitment, working conditions, careers and the social recognition of the profession. Three directions flow from this.

Mobilising various levers to improve teachers' skills

The effects of education investment depend on the volume of resources mobilised, their distribution, the policies they finance and the contexts in which they are implemented. The availability of adequately trained teachers, their distribution among schools, their working conditions and their opportunities for professional development determine the ability of systems to transform invested resources into effective learning opportunities. These dimensions themselves depend on public policy choices. In Mali, for example, the development of forms of education privatisation is accompanied by inequalities in teachers' status and working conditions. Policies on financing, recruitment, training and staff management therefore benefit from being examined jointly.

The significant gaps in mastery of subject and didactic skills, between countries and within systems, call for continued efforts targeting the professional development of teachers, with particular attention to areas where the needs are greatest. Nearly one in two teachers do not exceed level 1 in mathematics. For some teachers, moving from knowledge of a concept to its use in a professional situation also remains a challenge. These needs differ according to disciplines, proficiency levels and teacher profiles, which argues for differentiated pre-service and in-service training systems. These systems would benefit from giving priority to the analysis of students' production, the identification of errors and reasoning, the design of learning objectives and the choice of tasks consistent with these objectives.

Teachers with little or no training call for a special effort. One teacher in six states that they have received no pre-service training in teaching; this proportion reaches 61% in Madagascar and 26% in Togo and Burundi. In Burundi, this deficit is combined with limited access to in-service training: 53% of teachers have not followed it in the last two years. When pre-service training is lacking, in-service training becomes all the more essential. However, it is struggling to support these teachers in a landscape characterised by a lack of coherence between pre-service and in-service training, and between national and local initiatives.



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In-service training would benefit from being part of a coherent framework, which extends pre-service training and is articulated with pedagogical supervision and classroom practices. Practical internships during training and support for beginners in the extension of pre-service training are recognised as essential to promote the retention of new teachers. Strengthening the practical dimension of the courses by placing a strong emphasis on subject didactics and immersion in the field from pre-service training, and then ensuring continuity with integration and in-service training, would make it possible to build progressive, certification-based professional pathways. However, training opportunities are not perceived as equally accessible: only 41% of teachers consider them good or very good, from 26% in Madagascar and Mali to 56% in Congo. Access remains unequal, particularly in rural and remote areas, due to a lack of time, funding and structured integration and mentoring schemes. The content of the training, its modalities, its articulation with the needs of the classes, the long-term support and the conditions for reinvesting the acquired knowledge in practice count as much as their volume or frequency.

Improving working and teaching conditions as a priority in the most difficult contexts

Practice contexts have a strong impact on teachers' activity. Insecurity linked to armed conflict and social tensions can affect their presence and the continuity of their work. Rural, remote or hard-to-reach areas combine constraints of infrastructure, resources, professional isolation and access to training, which make it difficult to assign and retain qualified teachers. Electricity, present in 85% of classrooms in Djibouti, equips only 3% of classrooms in Chad. The same training or support policy can thus produce different effects



**47%
OF TEACHERS**

have a rather negative view of the pedagogical support they receive

depending on the resources, constraints and possibilities for action actually available to teachers.

Retaining teachers in rural and remote areas remains a major challenge in most countries. The demand for teachers is greater, but these positions are the most difficult to fill. The teaching staff in the countries surveyed is also young (38 years old on average), which shifts the priority issue, in several countries, from replacing people who are retiring to retention at the beginning of their careers. Unattractive conditions encourage departures, absenteeism or refusal of assignments in difficult areas. These movements then accentuate shortages, staff turnover and the workload of teachers who remain in their posts, which can further degrade the quality of teaching. When assignment processes leave the choice of school to the most senior teachers, they can also contribute to an unequal distribution of skills between rural and urban schools. Initiatives that stabilise teams in these schools can thus act on both shortages and equity in education systems.

Research highlights the importance of adequate remuneration, job prospects, and monetary and non-monetary benefits tailored to rural areas (Bennell & Akyeampong, 2007). Targeted bonuses appear to be effective in attracting teachers to difficult areas (Pugatch & Schroeder, 2014), but their effects on retention remain more uncertain (Mulkeen, 2006; Rhinesmith et al., 2023): they depend on the regularity of the payment, job security

and career prospects (Chelwa, Pellicer & Maboshe, 2019). Targeted recruitment and allocation policies, combined with these bonuses, aim to increase the presence of trained and experienced teachers in rural and remote schools (Acheampong & Gyasi, 2019; Sirois, 2021). However, 23% of rural teachers report an irregular salary, compared to 13% in cities, and up to 66% in Chad. Non-monetary incentives also matter: decent housing and access to water, electricity, transport and social services impact job satisfaction and the attractiveness of the profession. Of the permanent teachers who receive benefits linked to their status, 75% report housing, 58% transport assistance and 53% bonuses. Housing and transportation especially help to compensate for the constraints of assignment and travel in rural and remote areas. Well-being, satisfaction, professional support, employment conditions and the intention to remain in the profession are closely linked.

Teachers' need for support is twofold, pedagogical and administrative. Nearly one in two teachers has a somewhat negative opinion of the pedagogical (47%) and administrative (44%) support they receive, and the countries where pedagogical support seems to be the weakest have the same administrative deficiency. This need is manifested, in particular, by the loneliness that some teachers feel in difficult contexts, especially in rural areas and probably in conflict zones. Reducing some administrative tasks is necessary to strengthen pedagogical and didactic skills, whereas results-based management often tends to make these tasks, accountability and assessments more burdensome.

Strengthening the involvement of school actors

The effectiveness of a reform depends on its appropriation by the actors, its adaptation to professional and institutional realities and its long-term commitment, which presupposes



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the provision of mechanisms allowing its adjustment over time. A results-based culture can improve pedagogical management, but it produces unintended effects when it privileges measured results alone or when it appears to be a prescription external to teaching work. Resistance to reforms is often due to the non-recognition of professional knowledge built in the field and the lack of involvement of the targeted actors: teachers. The transfer of “good practices” also involves an element of illusion: the programmes labelled in this way, often evaluated in English-speaking contexts, are often cumbersome, costly and far removed from the realities in the field. Although they should not be rejected, these practices require local translation and collective work of appropriation and legitimisation carried out as a team in the field.

Nine out of ten teachers (90%) consider their relations with their colleagues to be good or very good, and 85% describe their teacher-management team as close-knit or very close-knit. They also largely accept the intervention of other professionals in their class, a favourable condition that hierarchical or bureaucratic rigidification could break. This openness is confirmed in practice: 82.6% of teachers indicate that the management intervenes in their classroom on the pedagogical, administrative or subject levels, and 76.6% received a visit from a pedagogical supervisor during the year. These visits are often related to inspection (90.7%), but also to help or advise (78.8%) and for training (46.5%). When they need support, however, teachers turn more to the hierarchy (63.2%) than to their colleagues (32.8%). These provisions call for professional development based on

collectives rather than individuals alone, through mentoring of beginners, in-service training and daily school life, and for a management that is more decentralised than top-down.

Teachers overwhelmingly place the ability to communicate with others and universal human values among the skills to be acquired by students. They are more reserved when it comes to embodying them in the fight against gender violence, racism or ableism. A clear incentive, work with teachers’ organisations and opinion campaigns could move the lines, but these values are embodied first and foremost in the daily life of the school and a peaceful school climate. Equality between women and men also involves the promotion of women to positions of responsibility, training and management.

Recommendations and courses of action

The recommendations are based on three types of actors: political decision-makers, pre-service and in-service training institutions, and technical and financial partners. They are part of an integrated approach to the teaching profession, from recruitment and pre-service training to professional development, career progression and retention, and require regular dialogue with teachers and their representative organisations. Rural areas call for priority attention, which is transversal to the recommendations targeting these three actors.



The recommendations (...) are part of an integrated approach to the teaching profession...

Priority attention to rural areas

Rural schools receive the least trained, the least experienced and the most vulnerable teachers. Community teachers make up 14.6% of the teaching staff there, compared to 2.7% in cities, and 23% of rural teachers report irregular salaries, compared to 13% in cities and up to 66% in Chad. The urban advantage in reading comprehension is greatly reduced when training, experience and status are comparable: the distribution of teachers between the territories is therefore at the heart of equity. Rural female teachers are also the weakest group in reading comprehension. Finally, these schools have constraints in terms of infrastructure, resources, professional isolation and access to training and support, which make it more difficult to assign and retain qualified teachers.

Several recommendations converge on these contexts. National policies for the teaching profession should pay particular attention to territorial inequalities, jointly examining the selection, assignment, pre-service and in-service training and retention of teachers in rural areas. Specific support programmes for rural teachers, and in particular for women teachers, should compensate for the structural vulnerabilities of these regions by acting on the conditions of work, access to professional development and career prospects. Local in-service training, organised through nearby schools or school networks, and support from educational managers and trainers respond directly to the professional isolation felt in these contexts, provided that their deployment effectively reaches all areas.

For policy-makers and Ministries of Education

Firstly, it is important to develop an integrated national policy for the teaching profession, articulating recruitment, pre-service training, professional integration, professional development, certification, career and retention. This policy would be based on a national competency framework, information systems for monitoring career paths, forward-looking planning of needs and particular attention to territorial inequalities, particularly in rural areas. Strengthening the pedagogical leadership of school principals, dialogue with teachers' representative organisations and coordination with the other administrations concerned are essential levers.

Increasing the attractiveness of the profession to women also appears strategic. Combined with adequate working conditions, increasing the number of women in the teaching staff contributes to the equity of systems and is a major lever for alleviating shortages and stabilising the profession. Specific support programmes aimed at female teachers as well as all teachers working in rural areas, should act on the conditions of practice, access to professional development and career prospects.

Finally, the educational authorities will benefit from structuring a real professional development ecosystem by investing sustainably in in-service training integrated into a coherent framework that articulates pedagogical supervision and classroom practices. In countries facing massive waves of recruitment, integration schemes combining mentoring and support are essential to secure entry into the profession.

For pre-service and in-service training institutions

Training institutions are called upon to adjust their curricula to the realities in the field by aligning their programmes with the pedagogical needs measured in primary school classes and with the national competency framework. They should strengthen the practical dimension of the courses by largely integrating subject didactics and immersion in the field from pre-service training. In conjunction with the authorities responsible for in-service training, they should also deploy in-service training rooted in practices, organised through nearby schools or school networks, and contribute to progressive and certifying professionalisation courses as well as to the training of principals, mentors and other actors involved in local support.

For technical and financial partners

For the technical and financial partners, the challenge lies first and foremost in the rationalisation of aid by avoiding scattering interventions among a multitude of in-service training operators devoid of overall coherence. Their funding would benefit from close alignment with the strategies adopted by countries. In a logic of educational sovereignty, these strategies, reference frameworks, training courses and certification mechanisms must remain defined and managed by the countries, while being enriched by regional spaces for reflection and sharing of experiences. Partners must also provide long-term support for pre-service training, both in terms of its financing and structural support, and contribute to the strengthening of national information, training, support and certification systems rather than to the creation of parallel mechanisms.



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Horizons: new projects for research

The results of the PASEC2024 open up several research projects, which touch on teachers' practices, the determinants of their skills, their training and the data available to inform policies.

The first project consists of closely observing teaching practices in the classroom, beyond declarative reporting, in order to grasp the reality of the interactions and methods at work. The pedagogical practices collected by PASEC are based on teachers' statements, which may deviate from the reality experienced in the classroom. The convergence of responses within the same country suggests that these practices are less related to the level of individual training than to a shared national competency framework; only a systematic cross-referencing between teacher profiles, levels of education and national curricula would make it possible to verify this hypothesis. Sociolinguistic and didactic studies would also help to understand the linguistic strategies used in the classroom and their effects on learning.

A second project focuses on the determinants of teachers' skills. The first step is to identify the characteristics of the most effective teachers and the factors of their success. Several differences observed also call for additional analyses. The gap between male and female mathematics teachers, which persists with comparable characteristics, could be linked to the academic orientation of future teachers in secondary school, a hypothesis to be tested by integrating training paths, seniority, status and assignments. The differences that persist between employment statuses seem to relate to unobserved characteristics, such as the educational level at the start of the training course and the subject content of the training received. In rural areas, the advantage observed in mathematics after

adjustment remains to be explained, and the analysis of school and contextual factors would benefit from further analysis. Finally, the intersection of the public or private status of the school with the environment would make it possible to verify whether the differences between sectors are partly due to the concentration of private schools in urban areas.

A third area concerns didactic skills and training. Analysis of the incorrect answers chosen by teachers would make it possible to distinguish a lack of knowledge from a gap between knowledge constructed by experience and the expected theoretical formulation. A comparison between countries where teachers follow a curriculum-prescribed approach and those where freer practice dominates would also shed light on the success rates observed. More broadly, it is important to identify the most effective in-service training modalities in these contexts, including to prepare teachers for the challenges of digital technology and artificial intelligence.

A final project involves data and methods. Improving comparability over time, leveraging longitudinal and subnational data, and accounting for the uncertainty associated with PASEC estimates and efficiency thresholds would strengthen the scope of comparisons between systems. It is also important to continue to develop comparable indicators for the different facets of the teaching profession, from recruitment and training to status, conditions of practice, career and skills. These quantitative analyses would benefit from being complemented by national studies on teacher training, assignment, practising conditions and management practices, which would allow for the monitoring of changes in teacher policies in countries and how these changes are reflected in assessments.

Box

Scope and limitations of results

What the measure allows us to affirm, and what it does not

The differences shown are associations, not effects. The assessment observes students and teachers at a given time, without an experimental design and without following the same children over time. When this report indicates that one group performs better than another, it describes an observed difference; it does not establish that the characteristic distinguishing these groups is the cause.

What the assessment does not observe

Only students who are in school and present on the day of the test are assessed. Children who do not go to school, have left school or are absent are not represented. In systems where access to and retention in school are the lowest, the population tested is therefore the most often selected.

The assessment focuses on two disciplines, at a specific moment in the pathway. It does not say anything about other learning.

Context data are self-reported. Students, parents, teachers and school principals answer for themselves.

What limits comparisons

The levels assessed are not on a common scale. A score at the start of education, a score at the end of education and a score at the end of basic education are not comparable with each other, nor are the levels of teachers and students, who belong to different populations and tests.

Comparisons over time only concern countries that have participated in several cycles and whose data have been validated. The others are excluded from the trend analyses and indicated as such.



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Assessment methodology

Assessment instruments

The teacher survey is based on the Shulman model, which distinguishes subject knowledge from didactic knowledge. It first measures the mastery of the content taught in primary school in reading comprehension and mathematics. It then measures the ability to mobilise this content to teach: analyse a student's approach, identify and interpret an error, define a pedagogical objective, choose an appropriate approach or activity.

The subject content is anchored in the skills expected of students at the end of primary school. However, the situations proposed to teachers are slightly more complex than the tasks intended for students. In reading comprehension, the test focuses on mastery of the language of instruction, access to the meaning of the text and knowledge of the language structures. In mathematics, it covers arithmetic, quantities and measurements, geometry and space, as well as problem solving.

The instruments were designed in French and then adapted into English, Portuguese and Arabic for the countries concerned. The tests are multiple-choice questionnaires administered on paper. To cover a large number of items without lengthening the test, PASEC uses "rotating booklets": four booklets are randomly distributed among the teachers of the same school. A context questionnaire completes the survey instruments. It documents socio-demographic characteristics, training paths, status, working conditions, declared pedagogical practices and teachers' perceptions of the school climate and recognition of the profession.

Administration in the field

The teacher survey is an integral component of the PASEC2024 assessment. The collection took place between April and June 2025. In each school, the teacher survey takes place on the fourth day of the campaign, during the morning. The administration is carried out by administrators recruited and trained by the national teams, according to a standard protocol.

Sampling

The teacher population surveyed is a direct result of the student survey design. The survey was administered to all teachers working in the schools selected for the assessment of students at the end of primary school, and not only to the teachers of the classes assessed. The standard sample size is 200 primary schools per country; in total, 3,892 schools were selected at the end of primary school in the 16 countries.

A total of 23,254 teachers were surveyed. The number of teachers ranges from 390 in Sao Tome and Principe to 2,737 in Nigeria, and exceeds 1,000 in 14 countries. The results, therefore, do not constitute a direct estimate of the entire national teaching population: they describe the teachers of the schools sampled for the assessment of students at the end of primary school.

Accuracy of estimates

Each result is accompanied by a standard error, which reflects the uncertainty associated with sampling. Differences between countries or between groups are only commented on when they are statistically significant at the 5% threshold. The multiple comparison tables indicate, for each country pair, whether the difference is significant.

Comparisons between groups of teachers are estimated only when each group has at least 100 teachers. This rule reduces the scope of certain analyses: the comparison between trained and untrained teachers covers ten countries, that between civil servants and contract teachers covers seven, and that with community teachers only covers four.

Quality assurance

Independent observers in the field verify compliance with administration procedures. The teacher data was collected based on the same quality assurance procedures as the other components of the assessment. They are then subject to consistency checks within each database and between the student, teacher and principal databases.



Proficiency scales and comparability over time

The answers to the subject tests are processed according to the item response theory (IRT) models. This analysis verifies that each question measures the targeted skill and behaves equitably between the groups. It then transforms the responses into comparable scores across countries.

Each discipline scale divides the continuum of scores into three levels, to which is added an area located below level 1. Each level has a descriptor that sets out what teachers at that level are capable of doing. The thresholds are set at 290, 394 and 497 points in reading comprehension, and 365, 456 and 547 points in mathematics.

Unlike the student scales, the teacher scales do not establish a baseline level of proficiency. Level 3 corresponds to the degree of mastery expected of a professional in charge of teaching this content. Teachers at level 1 or below are considered, as in 2019, a priority target for specific training measures.

Didactic knowledge is not subject to a scale. It is presented as success rates by sub-domains, compared to the probability of correctly answering by a random choice. In reading comprehension, 16 items are divided into three sub-domains; in mathematics, 32 items are divided into six sub-domains. This benchmark is not a statistical test, and some sub-domains have only two items.



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Assessing learning to transform education policies

Established in 1991, the CONFEMEN's Programme for the Analysis of Education Systems (PASEC) has become the reference instrument for steering the education systems of CONFEMEN member States and governments. Its purpose is to inform public decision-making by measuring changes in the performance of education systems, in order to guide the design, monitoring and evaluation of education policies and, through them, the improvement of the quality of education.

Its work goes beyond measurement. PASEC strengthens national assessment capacities, promotes the ownership and effective use of results by education stakeholders, and supports the development of education research. Through its assessments and analytical work, it provides decision-makers with reliable and comparable data as well as rigorous analyses, levers for higher-performing, more equitable and more efficient education.

Finally, PASEC contributes to the production of knowledge by supporting researchers and making its data and assessment frameworks available to them. It feeds into work that is useful both to education systems and to the academic community.

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